

THE UNIVERSITY OF HULL

**Spiritual Coping of Maltese Patients with
first Acute Myocardial Infarction: A Longitudinal Study.**

being a Thesis submitted for the Degree of

Doctor of Philosophy

in the University of Hull

by

Donia Baldacchino M.Sc.(Lond), B.Sc.(Hons), Cert.Ed.(Lond), R.G.N.

February 2002

ABSTRACT

Research provides evidence about the high levels of anxiety and depression in myocardial infarction (MI). This is because patients with MI face both an acute life-threatening illness and the potential for living with a major illness (Roebuck et al. 2001, Thornton 2001, Kim et al. 2000). Consequently, the patients' whole sense of meaning and purpose in life is at stake (Walton 1999, Burnard 1987, Simsen 1985). Research on spiritual coping and spiritual well being (SWB) in MI is still in its infancy. Therefore the aim of the study was to identify possible relationships between spiritual coping strategies (SCS) and anxiety, depression, SWB and personal characteristics of Maltese patients with MI, during hospitalisation and the first three months after discharge.

The longitudinal descriptive correlational study recruited a homogenous systematic sample of seventy male (n=46) and female (n=24) patients with first MI, mean age of 61.9 years. The variables under investigation were assessed by the translated versions of the Hospital Anxiety and Depression (HAD) scale (Zigmond and Snaith 1983), JAREL SWB scale (Hungelmann et al. 1985) and Helpfulness of Spiritual Coping Strategies (HSCS) scale designed for the study. The rationale for the perceived helpfulness of SCS was explored by the semi-structured face to face interview.

The theoretical framework which guided the study incorporated the Cognitive Theory of Stress and Coping (Lazarus and Folkman 1984) and the Idea of the Holy (Otto 1950). Analysis of the qualitative data was guided by Burnard (1991) analysis model. Additionally, analysis of the quantitative data utilized both parametric and non-parametric statistical tests in order to identify differences between means of subgroups of the personal characteristics and correlations between SCS and anxiety, depression and SWB across time.

The findings revealed a constant decline of anxiety and depression across time which is inconsistent with published research. However, the return of anxiety and depression to normal limits by the third month is congruent with research. In contrast, scores of SWB and SCS increased on discharge and remained stable across time.

The qualitative data revealed that SCS, SWB and the Maltese culture, which promotes family support in illness, may have contributed towards the relief of anxiety and depression. The quantitative data exhibited a negative, significant relationship between SCS and anxiety and depression on the sixth week after discharge. Additionally, positive significant relationships were identified between SCS and SWB across time.

The findings suggest that SWB may be a precursor to the relief of anxiety and depression. The minimal significant differences in SCS between the subgroups of personal characteristics propose the possible impact of the event of MI on spiritual coping and negative mood states. However these speculations may only be confirmed by further research as recommended in the study. Hopefully, the new knowledge produced by the study will be applied to the clinical practice and nursing education to promote patient care.

DEDICATION

To my brother Nikola
for his constant precious support throughout this project.

ACKNOWLEDGEMENTS

This research study produced new knowledge which may contribute to the nursing clinical practice and nursing education in order to enhance holistic care. On reflection, I profess that I experienced self-growth both academically, as a researcher and spiritually, as a human person. Patients' experiences enhanced meaning and purpose in my nursing education profession. Therefore, a special debt of gratitude is owed to both samples of patients who participated in the pilot and main studies. Additionally, I would like to express my sincere appreciation to the following individuals for their support along the research process continuum:

My Supervisors for their insightful advice and encouragement throughout the study:

- Mr. Gerry S. Bowman MPhil, RN. for his consistent indispensable advice throughout the research process.
- Dr. Peter Draper PhD, BSc, Cert Ed, RN, RNT. for his caring supervision along this journey and for his rich English in the proof reading of the final draft.
- Professor George Grima PhD (Louvain), MA, BA. for his interest in this study.

Nursing Research Consultants for their expertise and inspirational interest in the pre-planning phase of the project:

- Professor Philip Burnard, PhD (Wales), MSc (Surrey), RMN, RGN, DipN (London), Cert.Ed (London), RNT.
- Dr. Linda Ross PhD, BA, RGN.

Authors of the original research instruments for their generosity in granting me permission to translate and use the scales:

- NFER-NELSON Agency on behalf of Zigmond and Snaith (1983): HAD scale.
- JoAnn Hungelmann DNSc. : JAREL SWB scale.
Eileen Kenkel-Rossi MSN.
Loretta Klassen MS, RN.
Ruth Stollenwerk DNSc, RN.

Statisticians for their patience and guidance in statistical analysis of data:

- Professor Anton Buhagiar Ph.D.
- Mr. Allan Reese MA, MSc, CStat.
- Professor Roger Watson PhD, BSc, RGN, Cbiol, MIBiol, ILTM, FRSA.

Expert panel of Linguistics for their meticulous translation of the instruments in the Maltese Language:

- Mr. Walter Attard Cert. Maltese History
- Mr. George Mifsud MA.Lit(Maltese), BEd (Hons)
- Mrs. Mary Lilian Oliva Mifsud. B.A.(Hons)(English), P.G.C.E.

Panel of Experts of research for their professional contribution towards the content validity of the new Helpfulness of Spiritual Coping Strategies (HSCS) scale:

- Professor Emanuel Agius Ph.D. (Malta)
- Rev. Sister Brigid Murphy CertEd, Diploma (Social Work) (U.K.)
- Dr. Derek Fraser Ph.D (U.K)
- Rev. Fr. Anton Gouder M.S.Th. (Malta)
- Mr. Thomas Keaghley RGN, RMN, NDN, DN, RGNR, BA (Hons) (U.K.)
- Professor Hilreth Lanig MSN, RN.C, FNP (U.S.A.)
- Dr. Domenic Portelli Ph.D., Lic.Psych., Lic. Soc. (Malta)
- Dr. Linda Ross Ph.D, BA, RGN (U.K.)
- Ms.Rose Spiteri MSc (NEduc), PRDip (N.Educ), SRN (Malta)
- Dr. Benjamin Tonna BA, LicD, LicSc, POL Soc. (Malta)

Panel of Translators for their commitment in the thorough translation of patients' interview transcripts:

- Mr. Walter Attard Cert. Maltese History
- Ms. Lilian Bonello R.G.N.
- Mr. Joseph Spiteri, Accountant.
- Ms.Rose Spiteri MSc (NEduc), PRDip (N.Educ), SRN. who participated also in the inter-rater reliability of qualitative data analysis.
- Ms. Frances Vassallo Dip.Ed.
- Ms. M.Grace Mifsud BSc (Hons), SRN for typing part of the translated transcripts.

Hospital Authorities for giving me ethical approval to conduct the study at St. Luke's General Hospital in Malta:

Dr.Carmel Mallia MD, FRCP(Edin), FRCP(Lond), FCPP. Director of Medicine.

Ms.Nicholina Farrugia M.A. (Management), SRN. Director of Nursing Services.

Dr. Sandra Distefano for her eagerness to update me with HAA information about MI.

Research Secretary for her constant presence, dedication and unconditioned assistance:

Mary Connie Farrugia S.R.N. who participated also in the inter-rater reliability of qualitative data analysis.

Colleagues and nursing students at the Institute of Health Care, University of Malta for their unfailing collaboration and support throughout the four years of this project:

- Professor John Rizzo Naudi MD, BSc, FRCP(Edin). Chairperson of the Institute of Health Care and Chancellor of the University of Malta.
- Dr. Sandra Buttigieg MD, MSc. Executive Director.
- Ms. Joanne Stivala, Administrative Officer and her clerical staff.
- Mr. Andrew Galea, Assistant Executive Director and his two Laboratory and Computing Officers.
- Ms. Isabelle Avallone BSc(Hons), MSc (Liverpool), RGN. Coordinator of Nursing Studies (1998 – 2001).
- Ms. Grace Jaccarini BA, PQDip(N.Educ), S.R.N. Coordinator of Nursing and Midwifery Studies (2001-2002) and her two welcoming secretaries.
- Ms. Caroline Borda, Librarian.
- Ms Anna Vassallo and Ms Eve Lowell, Receptionists.
- Ms.Lilian Bonello RGN Invigilator during test-retests of research instruments
- M.Carmen Spiteri RGN, PDip (Midwifery), MSc (Surrey) Invigilator during test-retests of research instruments.
- Mr. Paul Calleja, B.Sc. (Hons) nursing student for his assistance in technology.
- Cohort groups of nursing students, who are now qualified, for their participation in the reliability test-retesting of research instruments.

Sponsors of the Project for facilitating my studies at the University of Hull:

- Professor Roger Ellul Micallef MD, PhD (Edin), FRCP (Edin), FRCP (Lond), FCCP. Rector of the University of Malta.
- The Foundation of International Studies, University of Malta.

Finally, and by no means less important, I would like to show my gratitude towards those persons behind the scene, who provided me with support throughout this four year journey:

- Ms Theresa Mizzi, Ms Catherine Xuereb, Ms Joyce Minto, Ms Mary Debono and Ms Phyllis Falzon and Executive Council of the Society of Christian Education.
- My brother Nikola and my family in Malta for their caring attitude during my commitment in this research study.
- Captain Lance and Mrs. Marica Shepherd for being my home while I was away from home.
- Miss Margaret Brayton M.B.E., former President of the Commonwealth Federation of Nurses, who inspired me and encouraged me throughout my nursing profession.
- I acknowledge the divine assistance of God along this research process continuum, who helped me to harmonise the above mentioned groups in all the stages of the project:

‘Taste and see that the Lord is good,
He is happy who seeks refuge in him,
The Lord turns his eyes to his people,
And his ears to their appeal,
They call and the Lord hears,
And rescues them in all their distress’. (Psalm 33: 2-5)

PROFILE OF RESEARCHER

Since childhood I wanted to become a teacher. However, I had never dreamt of becoming a nurse teacher. The long process of the entry of teacher's education at the University of Malta triggered me to undertake the nursing course locally, which I completed in 1978. Following an experience of two years as a staff nurse in ITU, in which there was also the CCU, I completed a shortened course at St. Stephen's Hospital in London, where I became registered with the United Kingdom Central Council in 1981. Soon after I completed the Renal Course, Haemodialysis (ENB course No. 136) at Charing Cross Hospital, Hammersmith, London in 1981.

On returning to Malta, I helped in the opening of the Renal Unit in the local general hospital, where I worked for two years. The call to become a teacher was actualized in 1984, following completion of the Certificate in Adult Education at Garnett College, London. Embarking on nurse education, I could see the importance of post-registration education. Since the nursing school could not introduce such sessions at that time, I founded the Malta Nurses' Association in 1986. This gave me the opportunity to organize educational activities for the nursing staff in Malta and Gozo. Being affiliated with the Commonwealth Federation of Nursing and the International Council of Nursing, I had the opportunity to keep myself updated with research.

In 1988, nurse education entered the University of Malta. The first course of the B.Sc (Hons) was opened for a group of registered nurses. Following completion of the course in 1991, I undertook the M.Sc nursing course in King's College, London, after which I graduated in 1993. Throughout all this educational experience, I continued to cope with my role as an active member of the Society for Christian Education. The founder was Rev. George Preca, who was to be beatified, two months after completion of data collection. Up to now, Malta is still treasuring this Society. However, I felt that this was a disadvantage for data collection, a source of bias. I thought that if patients were to know about my membership in this religious society, the results would be biased due to social desirability. Thus I reflected on how to overcome such a problem, which I think I managed well, as discussed in Chapter Three.

GLOSSARY

List of Abbreviations

ANOVA	analysis of variance statistical test
CAGB	coronary artery bypass graft surgery
CCU	coronary care unit
DM	diabetes mellitus
CPK	creatinine phosphokinase (cardiac enzyme)
DNO	deputy nursing officer
ECG	electrocardiogram
EWB	existential well being
EN	enrolled nurse
IHD	ischaemic heart disease
HAA	Hospital Activity Analysis, Department of Health
HAD	Hospital Anxiety and Depression scale (Zigmond and Snaith 1983)
HSCS	Helpfulness of Spiritual Coping Strategies scale (new scale)
JAREL	JAREL spiritual well being scale (Hungelmann et al.1985)
ITU	intensive therapy unit
M	mean / average scores
MI	myocardial infarction
NO	nursing officer
NRCS	non-religious coping strategies
RCS	religious coping strategies
RGN	registered general nurse
RM.ANOVA	repeated measures analysis of variance statistical test
RWB	religious well being
SCS	spiritual coping strategies / use and helpfulness of SCS
SWB	spiritual well being
USCS	Use of Spiritual Coping Strategies interview schedule
T1	Time 1 on CCU
T2	Time 2 on transfer to the medical ward
T3	Time 3 on discharge home
T4	Time 4 on the sixth week after discharge
T5	Time 5 on the thirteenth week / third month after discharge

INDEX OF CONTENTS

Abstract	i
Dedication	iii
Acknowledgements	iv
Profile of researcher	vii
Glossary : Abbreviations	viii
Index of contents	ix
List of Tables	xvii
List of Figures	ix
List of lists	xxi

Introduction to the study 1

1. The variables under investigation	1
2. The research process continuum	2
2.1. Conception of the researcher's interest in the study.	4
2.1.1. Reducing the gaps in the published literature	6
2.2. Conduct of the research study	8
2.2.1. Focusing down the title of the research study	8
2.2.2. Theoretical framework	9
2.2.3. Research instruments and data collection	10
2.2.4. Overcoming the attrition rate of the sample	11
2.2.5. The research question, aim and objectives	12
3. Generation of further research questions	13
4. Presentation of chapters of thesis	15

Chapter 1 : Literature Review Chapter

Introduction	17
1. Literature search strategy	18
2. Myocardial Infarction: Definition, process and impact on individual's life	21
3. Theoretical Framework	25
3.1. Cognitive theory of stress and coping (Lazarus and Folkman 1984)	26
3.2. The Idea of the Holy : The <i>numinous</i> experience (Otto 1950)	32
4. The spiritual dimension of a person	36
4.1. Nursing and psychosocial perspectives of the spiritual dimension of a person	38
4.2. Philosophical perspective of the spiritual dimension of a person	44
4.3. Theological perspective of the spiritual dimension of a person	47
4.4. Summary of the spiritual dimension of a person	51
5. Spiritual well being	53
5.1. Definition of spiritual well being	53
5.2. Research on SWB in illness and relationship with SCS and characteristics	57
5.3. Summary and possible relationships of SWB with SCS and characteristics	72
6. Anxiety and Depression	74
6.1. Definition of anxiety and depressio	75
6.2. Research on anxiety and depression in MI and relationship with SCS and Characteristics	76
6.3. Summary and possible relationships of anxiety and depression with SCS and personal characteristics	87
7. Spiritual coping strategies	90
7.1. Definition of spiritual coping strategies	90
7.2. Research on SCS in illness and possible relationships with anxiety, depression, SWB and personal characteristics	91
7.3. Summary and possible relationships of SCS with anxiety, depression, SWB and personal characteristics	106
Conclusion	108

Chapter 2 : Christian belief system : A coping mechanism	113
1. History of Christianity in Malta	113
2. A summary of Christian belief : A coping mechanism	114
Chapter 3. Research Design	118
1. Research question	118
2. Aim and objectives	118
2.1. Aim	118
2.2. Objectives	119
2.3. Hypotheses	119
3. Time schedule of the research process	120
4. Operational definitions	120
5. Research design	122
5.1. Quantitative data	123
5.1.1. Descriptive correlational design	124
5.1.2. Advantages and disadvantages of a correlational design	125
5.2. Qualitative data	126
5.3. Longitudinal design	128
6. Research setting	131
7. Gaining Access	134
7.1. Institutional access	134
7.2. Copyright access	135
8. Ethical considerations	136
8.1. Informed consent, autonomy in participation	137
8.2. Preservation of health	138
8.3. Privacy, confidentiality and anonymity	139
9. The dual role of a researcher and data collector: Possible impact on the study	140
Chapter 4. Sampling technique and research instruments	144
1. Target population and sampling technique	144
1.1. Target population	144
1.2. Sample	145
1.3. Statistical power analysis	146
1.4. Recruitment of sample	148
1.4.1. Inclusion criteria	148
1.4.2. Exclusion criteria	149
2. Research Instruments	152
2.1. Recruitment questionnaires	153
2.2. Measures of variables by qualitative methods	153
2.3. Measures of variables by quantitative methods	153
2.1.1. Mental Test score	154
2.1.2. Sample recruitment checklist	155
2.2.1. Semi-structured interview schedule for definitions of terms	155
2.2.2. Semi-structured interview schedule (USCS)	155
2.3. Quantitative methods	156
2.3.1. Socio-demographic data questionnaire	156
2.3.2. The HAD scale	156
2.3.3. JAREL SWB scale	158
2.3.4. JAREL SWB scale in VAS format	161
2.3.5. Development of the HSCS scale	163
2.3.5.1. Construction of HSCS scale	163
2.3.5.2. Constituents of HSCS scale	166
3. Correlations between the two scores of Frequency /Helpfulness scales	168

Chapter 5. Reliability and Validity of Research instruments	170
1. Theoretical background of reliability	170
2. Use of samples of students for test-retest reliability of instruments	172
3. Translation process of the original HAD scale, JAREL SWB scale and HSCS scale prior to reliability testing.	174
3.1. The problem of illiteracy in Malta	174
3.2. Constituents of the Maltese language	176
3.3. Translation framework (Chetcuti 1975)	176
3.4. Translation process	178
4. Test-retest reliability testing of research instruments in the English, Maltese and back-translation versions	180
4.1. Reliability testing of the HAD scale	180
4.1.1. Samples participating in the test-retest of the HAD scale	180
4.1.2. Statistical analysis of the HAD scale	182
4.1.3. Internal consistency of the Anxiety and Depression sub scales	182
4.2. Reliability testing of the JAREL SWB scale	183
4.2.1. Samples participating in the test-retest process of JAREL SWB scale	184
4.2.2. Test-retest of the items in the three versions of the JAREL SWB scale	184
4.2.3. Internal consistency of the JAREL SWB scale	185
4.3. Reliability testing of the HSCS scale	186
4.3.1. Samples participating in the test-retest process of the HSCS scale	186
4.3.2. Statistical analysis of the HSCS scale	186
5. Inter-rater reliability of the qualitative data	187
6. Validity of quantitative and qualitative tools	188
6.1. Face validity and content validity	199
6.2. Criterion-related strategy for validity testing of HSCS scale	191
7. Construct validity by factor analysis	194
7.1. Factor analysis of the HAD scale	195
7.2. Construct validity : Factor analysis of the JAREL SWB scale	196
7.3. Construct validity : Factor analysis of the new HSCS scale	198
8. Validity of Qualitative data	201
8.1. Credibility of qualitative data	201
8.1.1. Prolonged engagement	201
8.1.2. Triangulation	201
8.1.3. Peer and sample examination	203
8.2. Transferability	204
8.3. Dependability	205
8.4. Confirmability	205
Chapter 6 : Data Collection and analysis techniques	206
1. Pilot study	206
1.1. Process of pilot study	206
1.2. Feedback from pilot study	208
1.3. Quantitative and qualitative data from pilot study	209
2. Main study	211
3. Data collection process	211
2.1. Data analysis techniques	214
2.2. Quantitative data analysis	214
3.1.1. Data management	214
3.1.2. Statistical analysis of data	216
3.1.3. Statistical analysis tests	219
4. Qualitative data analysis	223
4.1. Data analysis by computer software	223
4.2. Thematic content analysis (Burnard 1991)	224

5.	Data presentation of quantitative and qualitative data	227
Chapter 7	Personal Characteristics and spiritual coping strategies	230
1.	Personal characteristics of the sample	230
2.	Spiritual coping strategies	245
2.1.	Qualitative Data : Themes and categories	245
2.1.1.	Definitions of spirituality and SWB	246
2.1.2.	Patients' reasons for the helpfulness of spiritual coping strategies	247
2.2.	Patterns of SCS across time derived from the HSCS scale	249
2.3.	Fluctuations of SCS and individual differences across time	254
2.4.	Individual differences in scores of SCS across time	255
3.	Rank order of five SCS perceived as most helpful	259
	Summary	265
Chapter 8	Relationship between SCS and anxiety and depression	268
1.	Patterns of anxiety and depression across time	268
2.	Correlation of anxiety and depression across time	279
3.	Fluctuations of anxiety and depression across time	280
4.	Individual differences in anxiety and depression across time	282
5.	Correlation between SCS and anxiety and depression	286
6.	Hypothesis No.1. testing and summary	293
Chapter 9	Relationship between SCS and SWB	297
1.	Patterns of SWB across time	298
2.	Fluctuations of SWB across time	304
3.	Individual differences in SWB across time	305
4.	Correlation between SCS and SWB	306
5.	Hypothesis No.2. testing and summary	314
Chapter 10	Relationship between SCS and personal characteristics	313
1.	Differences in SCS within the subgroup of gender	319
2.	Differences in SCS within the subgroup of IHD	323
3.	Differences in SCS within the subgroup of angina	329
4.	Differences in SCS within the subgroup of social class	333
5.	Differences in SCS within the subgroup of living alone/others	338
6.	Differences in SCS within the subgroup of relationship with God	342
7.	Differences in SCS within the subgroup of location of residence	346
8.	Differences in SCS within the subgroup of marital status	350
9.	Differences in SCS within the subgroup of age	354
10.	Differences in SCS within the subgroup of education	358
11.	Differences in SCS within the subgroup of church attendance	363
12.	Differences in SCS within the subgroup of drug treatment	369
13.	Hypothesis No.3. testing and summary	373
14.	Summary of findings	374
	Conclusion	374
1.	Research findings	378
1.1.	Hypothesis No 1	378
1.2.	Hypothesis No 2	380
1.3.	Hypothesis No 3	381

Strengths and Limitations of the study	383
1. Pre-planning phase	383
2. The research process phase	383
2.1. Triangulation	383
2.2. Sample recruitment	384
2.3. Instruments	384
2.4. Data collection and analysis	385
2.5. Ethical considerations	387
2.6. Researcher bias	387
2.7. Research gaps	387
3. Follow-up phase	389
Recommendations	390
1. Nursing practice	390
2. Nursing education	390
3. Hospital management	392
4. Extension of the research study	393
5. Further research	395
References	398
Bibliography	428
Appendices	435
Appendix A Letters of permissions to use and test research tools	436
A.1. Letter requesting permission to use JAREL SWB scale	436
A. 1.1. Letter of permission granted to use JAREL SWB scale.	438
A.1.2. Response from Dr. J. Hungelmann to use JAREL SWB scale.	439
A.2. Letter requesting permission to use the HAD scale	440
A.2.1. Letter of permission granted to use the HAD scale	441
A.3. Letter of permission by Coordinator of Nursing and Midwifery Studies.	442
A.4. Letter of permission by the Director of Institute of Health Care	443
Appendix B Letters of permissions to conduct the research study	444
B.1. Letter requesting permission from the Chairperson of Medical Services	444
B.1.1. Letter of permission granted by the Chairperson of Medical Services	446
B.2. Letter requesting permission from the Director of Nursing Services	447
B.2.1. Letter of permission granted by the Director of Nursing Services	449
B.3. Letter of information to Medical Consultants of CCU and medical wards	450
B.3.1. Response from one of Medical Consultants.	451
B.4. Letter of information to the Hospital Manager and Departmental Managers	452
B.4.1. Response from one of the Departmental Manager	453
Appendix C Content Validity of HSCS scale	454
C.1. Letter of invitation to be a member of the Expert Panel.	454
C.2. Letter to Expert Panel accompanying HSCS scale package for content validity.	455
C.3. Aims and objectives of HSCS scale.	456

C.4.	Demographic data of Expert Panel.	457
C.5.1.	Feedback from Mr. Wilfred McSherry:overall data collection from patients.	458
C.5.2.	Feedback from Prof. Hilreth Lanig:World view vs World religions.	459
C.5.3.	Feedback from Mr. Thomas Kealey:Christian orientation of HSCS scale.	460
C.6.	Letter of thanks to the panel of experts.	461
C.7.	Declaration of authenticity of translated interview transcripts.	462
Appendix D Test-Retest for reliability of the research instruments		463
D.1.	Letter of information and invitation to students for Test-Retest of research tools	463
D.2.	Letter of information to students with package of research instruments	464
D.3.	Coding List of students for Test-Retest of research instruments	465
D.4.	Back-translation version of HAD scale	466
D.5.	Back-translation version of JAREL SWB scale	470
D.6.	Back-translation version of Helpfulness of spiritual coping strategies (HSCS)	471
Appendix E Information to and from patients across time		476
E.1.	Pilot study – letter of info to patients while on the medical ward (English)	476
E.1.1.	Pilot study - letter of info to patients while on the medical ward (Maltese)	477
E.2.	Pilot study - Evaluation of patients on data collection (English and Maltese)	478
E.3.	Letter of information on Time 2 about the process of data collection (English)	479
E.3.1.	Letter of information on Time 2 about the process of data collection Maltese)	480
E.4.	Letter of information on Time 3 about the process of data collection (English)	481
E.4.1.	Letter of information on Time 3 about the process of data collection Maltese)	482
E.5.	Letter of information on Time 4 about the process of data collection (English)	483
E.5.1.	Letter of information on Time 4 about the process of data collection Maltese)	484
E.6.	Letter of information on Time 5 about the process of data collection (English)	485
E.6.1.	Letter of information on Time 5 about the process of data collection Maltese)	486
E.7.	Letter of information on Time 4 : review of transcribed interviews. (English)	487
E.7.1.	Letter of information on Time 4 : review of transcribed interviews Maltese)	488
E.8.	Feedback from patients about amendments in the interview script (English)	489
E.8.1.	Feedback from patients about amendments in the interview script Maltese)	490
E.9.	Letter of thanks to patients on completion of data collection (English)	491
E.9.1.	Letter of thanks to patients on completion of data collection Maltese)	492
Appendix F Time 1 (CCU) Research Instruments		493
F.1.	List of Admissions of patients with MI in hospital between 1996 – 2000.	493
F.1.1.	Sample recruitment checklist	496
F.2.	Mental Test Score	498
F.3.	Selection of clients' sample using systematic sampling technique	499
F.4.	Exclusion of clients coding system	500
F.5.	Clients' informed consent – English version	501
F.5.1.	Clients' informed consent – Maltese version	503
Appendix G Time 2 and Time 3 Research Instruments		505
G.1.	Socio-demographic data Questionnaire	505
G.2.	Time 2 - Semi structured interview schedule : Definitions of spirituality/SWB	507
G.3.	JAREL spiritual well-being (SWB) scale : English original version	508
G.3.1.	JAREL spiritual well-being (SWB) scale : Maltese version	509
G.4.	JAREL SWB scale (Visual Analogue Scale) : English and Maltese versions	511
G.5.	Hospital Anxiety (HAD) scale : English version	516
G.5.1.	Hospital Anxiety (HAD) scale : Maltese version	517
G.6.	Helpfulness of spiritual coping strategies (HSCS) – English/Maltese versions	520

G.7.	Ranking order of spiritual coping strategies (use of cards)	526
G.8.	Time 3 - interview schedule: Use of spiritual coping strategies (USCS)	528
Appendix H Test-retest reliability results of research instruments		535
H.1.	HAD scale (Zigmond and Snaith 1983)	535
	Table H.1.1 Terminology : pre and post variables of HAD scale	535
	Table H.1.2 Test-retest reliability of HAD scale	535
	Table H.1.3 Test-retest reliability and Factor Analysis of Anxiety :HAD scale	537
	Table H.1.4 Test-retest reliability and Factor Analysis of Depression :HAD scale	538
	Table H.1.5 Test-retest reliability and Factor Analysis of anxiety and Depression	538
H.2.	JAREL SWB scale (Hungelmann et al. 1985)	539
	Table H.2.6 Terminology : pre and post variables of JAREL SWB scale	539
	Table H.2.7 Test-retest reliability of JAREL SWB scale	539
	Table H.2.8 Internal reliability of JAREL SWB scale	541
	Table H.2.9 Factor Analysis of JAREL SWB scale	542
	Table H.2.10 Cluster Analysis of JAREL SWB scale	543
H.3.	HSCS scale (new scale)	544
	Table H.3.11 Terminology : pre and post variables of HSCS scale	544
	Table H.2.12 Correlation and test-retest reliability of HSCS scale	545
	Table H.2.13 Internal reliability of HSCS scale	548
	Table H.2.14 Cluster Analysis of HSCS scale	550
	Table H.2.15 Sorted and shaded correlation matrix depicting factor analysis	551
	Table H.2.16 Two factor solution of HSCS scale	552
Appendix I Data management		553
I.	Coding of quantitative data	553
	Table I 1: Coding system of HSCS scale	553
	Table I.2: Coding system of Anxiety (HAD) scale	554
	Table I.3: Coding system of Depression (HAD) scale	555
	Table I.4: Coding system of EWB –JAREL scale	556
	Table I.5: Coding system of EWB –JAREL scale	557
	Table I.6: Coding system of Personal characteristics with 2 categories	558
	Table I.7: Coding system of Personal characteristics with more than 2 categories	559
	Table I.8. Categories of total scores of anxiety, depression and SWB	560
Appendix J Copyright permissions: Publishers of Books and Nursing Journal		561
J.1.	Aspen Publishers Inc.: Book: Dossey L.K., Guzzetta C.E., Kolkmeier L.G.(1995) <i>Holistic Nursing</i> . 2 nd Edition.	561
J.2.	Mosby Publishers: Book : Stoter D. (1995) <i>Spiritual Aspect of Health Care</i> .	563
J.3.	RCN Publishing Company: Hancock B. (2000) Nursing Standard journal	564
J.4.	W.B. Saunders Company: Carson V.B. (1989) <i>Spiritual Dimensions of Nursing Practice</i> .	564
Appendix K Additional results of pilot and main study		557
K.1.	List of Active Religious Movements in Malta.	566
K.2.	Characteristics of the recruited sample, alternate and excluded groups.	567
K.2.1.	Gender of original , alternate and excluded groups	567
K.2.2.	Age of original , alternate and excluded groups	567
K.2.3.	Location of residence of original , alternate and excluded groups	568
K.2.4.	Mental test score of original , alternate and excluded groups	568
K.2.5.	Reasons for exclusion of sample in CCU	569

K.2.6.	Location of MI of original recruited sample	570
K.2.7.	CPK of original recruited sample	570
K.2.8.	Changes in ECG of original recruited sample	571
K.2.9.	Duration of hospital stay in CCU / medical ward of original recruited sample	571
K.2.10.	Duration of hospital stay of original recruited sample	572
K.2.11.	Gender, attrition rate of sample across time	572
K.2.12.	Gender of lost patients from sample across time	564
K.2.13.	Reasons for attrition of sample	573
K.3.1.	Characteristics of pilot study sample: 2 categories	574
K.3.2.	Characteristics of pilot study sample : more than 2 categories	575
K.3.1.	Figure: Mean scores of RWB, EWB, SWB of pilot study patients (Likert scale)	576
K.3.1.	Figure: Mean scores of RWB, EWB, SWB of pilot study patients (VAS)	576
K.3.3.	Figure: Anxiety and depression on transfer to the medical ward of pilot sample	577
K.3.4.	Figure: Frequency of combined SCS of pilot study patients	577
K.3.5.	Figure: Frequency of religious SCS of pilot study patients	578
K.3.6.	Figure: Frequency of combined SCS of pilot study patients	578
K.4.	Individual differences in scores of SCS across time derived from HSCS scale.	579
K.4.1.	Figure: Individual differences in combined SCS between T4 and T3	579
K.4.2.	Figure: Individual differences in combined SCS between T5 and T3	580
K.4.3.	Figure: Individual differences in RCS between T4 and T3	581
K.4.4.	Figure: Individual differences in RCS between T5 and T3	582
K.4.5.	Figure: Individual differences in NRCS between T4 and T3	583
K.4.6.	Figure: Individual differences in NRCS between T5 and T3	584
Appendix L	Additional results of pilot and main study	585
L.1.	Published paper in the Journal of Advanced Nursing, June 2001.	585
L.2.	Published paper in the International Journal of Nursing Studies, February 2002.	594
Appendix M	Time schedule of the research process	602
M1.	Time frame of the research process	602

LIST OF TABLES

(The first number indicates the chapter number)

1.1.	Literature traced from 1980 to 2002	19
1.2.	The meaning of the term spirituality in different languages	38
4.1.	Statistical power of sample size for statistical analysis of Mean differences and correlations	147
4.2.	Admissions of patients with MI at the local general hospital	150
4.3.	Correlation between JAREL SWB scale and JAREL SWB-(VAS)	162
4.4.	Spearman's correlation between Frequency and Helpfulness of SCS	168
4.5.	Spearman's correlation between Frequency and Use+Helpful. of SCS	168
4.6.	Spearman's correlation between Help. (total) and Use+Help. of SCS	169
5.1.	Summary of Cronbach alpha for Anxiety, Depression and Anxiety and Depression subscales together	183
5.2.	Summary of Cronbach alpha for three versions of JAREL SWB scale	185
5.3.	Internal Consistency of the HSCS scale	187
5.4.	The two factors of the HAD scale	195
5.5.	Factor 1 of JAREL SWB scale	197
5.6.	Factor 2 of JAREL SWB scale	197
5.7.	Factor 1 of HSCS scale	199
5.8.	Factor 2 of HSCS scale	199
5.9.	Reliability alpha values of the two factors of the HSCS scale	200
5.10.	Content validity of transcribed interviews approved by patients	203
5.11.	Content validity of transcribed interviews: Response and Amendments	204
6.1.	Data collection during stipulated time	212
6.2.	Comparison between Spearman's rho and Pearson's r correlations between anxiety and SCS	218
7.1.	Prospective and retrospective data collection and the respective time	230
7.2.	Paired sample t-test identifying where the difference lies across time	254
7.3.	Changes in levels of total SCS, RCS, NRCS	255
7.4.	Rank order of the first five SCS perceived as most helpful	260
8.1.	Pearson's correlation between anxiety and depression	279
8.2.	Paired sample t-test identifying where the difference in anxiety lies	280
8.3.	Paired sample t-test identifying where the difference in anxiety lies	281
8.4.	Changes in levels of anxiety and depression	283
8.5.	Pearson's correlation between anxiety and SCS	286
8.6.	William's t-test; differences in correlation between anxiety and SCS	287
8.7.	Pearson's correlation between depression and SCS	288
8.8.	William's t-test; differences in correlation between depression and SCS	289
9.1.	Paired sample t-test: differences in SWB between pairs of time periods	304
9.2.	Changes in levels of SWB	305
9.3.	Pearson's correlation between SCS and SWB	306
9.4.	William's t-test: differences in correlations between SWB and SCS	309
10.1.	Student t-test: comparison of gender with SCS	321
10.2.	Student t-test: comparison of IHD with SCS	326
10.3.	Student t-test: comparison of angina with SCS	331
10.4.	Student t-test: comparison of social class/occupation with SCS	335

10.5.	Student t-test: comparison of living alone/with others and SCS	340
10.6.	Student t-test: comparison of relationship with God and SCS	344
10.7.	Student t-test: comparison of location of residence with SCS	348
10.8.	Student t-test: comparison of marital status with SCS	352
10.9.	Student t-test: comparison of age with SCS	356
10.10.	Student t-test: comparison of education with SCS	360
10.11.	Student t-test: comparison of church attendance with SCS	365
10.12.	Student t-test: comparison of drug treatment with SCS	371
10.13.	Summary of significant relationship between SCS and variables	374

LIST OF FIGURES

(The first number indicates the chapter number)

1.	The research process continuum	3
1.1.	Composition of the Numen and the nature of the <i>numinous</i> experience (Otto 1950)	33
1.2.	The process of coping with stressful encounters proposed by the theories of Lazarus and Folkman (1984) and Otto (1950)	35
1.3.	A holistic view of a person with the four elements interacting together	39
1.4.	Spirituality as the core of the holistic person	40
3.1.	Time of quantitative and qualitative data collection	128
4.1.	Summary of recruitment and attrition rate of patients with MI	151
5.1.	The three-member expert panel in linguistics	178
5.2.	The six stages of the Maltese translation process	179
5.3.	Spearman's Criterion related correlation between JAREL SWB and Frequency of SCS (Test 1)	191
5.4.	Spearman's Criterion related correlation between JAREL SWB and Frequency of SCS (Test 2)	191
5.5.	Spearman's Criterion related correlation between JAREL SWB and Helpfulness of SCS (Test 1)	193
5.6.	Spearman's Criterion related correlation between JAREL SWB and Helpfulness of SCS (Test 2)	193
6.1.	Data collection process across time	213
6.2.	Analytic Model of relationships between variables	215
6.3.	Summary of statistical tests in the investigation of characteristics	222
6.4.	Summary of statistical tests in the investigation of characteristics	223
7.1.	Frequency of gender of original sample	231
7.2.	Frequency of age by gender of original sample	232
7.3.	Frequency of marital status by gender of original sample	233
7.4.	Frequency of IHD by gender of original sample	234
7.5.	Frequency of angina by gender of original sample	235
7.6.	Frequency of education by gender of original sample	236
7.7.	Frequency of class / occupation by gender of original sample	237
7.8.	Frequency of location of residence by gender of original sample	238
7.9.	Frequency of living alone / with others by gender of original sample	239
7.10.	Frequency of relationship with God by gender of original sample	240
7.11.	Frequency of church attendance before MI by gender of original sample	241
7.12.1.	Frequency of drug treatment before MI by gender of original sample	243
7.12.2.	Frequency of drug treatment on medical ward by gender of sample	244
7.13.	Mean score of combined SCS	249
7.14.	Mean score of RCS	250
7.15.	Mean score of NRCS	251
8.1.	Mean scores of anxiety across time	268
8.2.	Mean scores of depression across time	269
8.3.	Range of anxiety scores of patients across time	276
8.4.	Range of depression scores of patients across time	277
9.1.	Mean level of SWB	299
9.2.	SWB as a precursor to the relief of anxiety and depression	313

10.1.1. RM.ANOVA: differences between gender and SCS	319
10.1.2. RM.ANOVA: differences between gender and RCS	320
10.1.3. RM.ANOVA: differences between gender and NRCS	320
10.2.1. RM.ANOVA: differences between IHD and SCS	323
10.2.2. RM.ANOVA: differences between IHD and RCS	324
10.2.3. RM.ANOVA: differences between IHD and NRCS	324
10.3.1. RM.ANOVA: differences between angina and SCS	329
10.3.2. RM.ANOVA: differences between angina and RCS	330
10.3.3. RM.ANOVA: differences between angina and NRCS	330
10.4.1. RM.ANOVA: differences between class and SCS	333
10.4.2. RM.ANOVA: differences between class and RCS	334
10.4.3. RM.ANOVA: differences between class and NRCS	334
10.5.3. RM.ANOVA: differences between living alone/others and SCS	338
10.5.3. RM.ANOVA: differences between living alone/others and RCS	339
10.5.3. RM.ANOVA: differences between living alone/others and NRCS	339
10.6.1. RM.ANOVA: differences between relation with God and SCS	342
10.6.2. RM.ANOVA: differences between relation with God and RCS	343
10.6.3. RM.ANOVA: differences between relation with God and NRCS	343
10.7.1. RM.ANOVA: differences between residence and SCS	346
10.7.2. RM.ANOVA: differences between residence and RCS	347
10.7.3. RM.ANOVA: differences between residence and NRCS	347
10.8.1.RM.ANOVA: differences between marital status and SCS	350
10.8.2.RM.ANOVA: differences between marital status and RCS	351
10.8.3.RM.ANOVA: differences between marital status and NRCS	351
10.9.1.RM.ANOVA: differences between age and SCS	354
10.9.2.RM.ANOVA: differences between age and RCS	355
10.9.3.RM.ANOVA: differences between age and NRCS	355
10.10.1.RM.ANOVA: differences between education and SCS	358
10.10.2.RM.ANOVA: differences between education and RCS	359
10.10.3.RM.ANOVA: differences between education and NRCS	359
10.11.1.RM.ANOVA: differences between church attendance and SCS	363
10.11.2.RM.ANOVA: differences between church attendance and RCS	364
10.11.3.RM.ANOVA: differences between church attendance and NRCS	364
10.12.1.RM.ANOVA: differences between drug treatment and SCS	369
10.12.2.RM.ANOVA: differences between drug treatment and RCS	370
10.12.3.RM.ANOVA: differences between drug treatment and NRCS	370

LIST OF LISTS

(The first number indicates the chapter number)

6.1.	Patients' quotations describing the four themes of the interview	211
6.2.	Criteria for parametric statistical tests	216
6.3.	Use of Spearman's r correlation coefficient	223
6.4.	Systematic stages of Burnard's Thematic Analysis Framework	223
7.1.	List of themes emerged from the definition of spirituality	246
7.2.	List of themes emerged from the definition of SWB	246
7.3.	List of themes emerged on reasons for helpfulness of SCS	248

INTRODUCTION TO THE STUDY

This chapter introduces the overall aims of the study and describes how it fills the gaps in the published literature and how it contributes to nursing knowledge. Additionally, it outlines the principles underlying the research process continuum and provides rationale for the various decisions taken during the process.

1. The variables under investigation

The recovery time from myocardial infarction (MI) to the return to normal life is one of uncertainty and emotional turmoil for the patient and family (Roebuck et al. 2001, Jaarsma et al. 1995, Thompson et al. 1995, Thompson and Cordle 1988). The patient with MI faces both an acute life-threatening illness and the potential for living with a major chronic illness (Rose et al.1994, Rom 1994). Research provides evidence about the presence of anxiety and depression in myocardial survivors (Thornton et al. 2001, Kim et al. 2000, Thompson et al.1989). Experience of fatigue, chest pain and breathlessness post MI may render the patient to appraise his/her MI as a stressful event, beyond his/her control (Rom 1994, Lazarus and Folkman 1984). This may be worsened by the fear of another attack and of impending death. (Urden et al. 2002, Lidell et al.1997, Rose et al.1994).

Furthermore, the person's whole sense of meaning and purpose in life may be jeopardized. According to Burnard (1987b) and Simsen (1985), the individual may go through a period of reappraisal and reevaluation of his/her own life, in an attempt to make sense of the illness and hope for future life.

Both theories which sustain this research study, that is the Cognitive Theory of Stress and Coping (Lazarus and Folkman 1984) and the Idea of the Holy, known as the *Numinous* experience (Otto 1950), suggest various spiritual coping strategies (SCS) which may be used to manage the life crisis. In the presence of a religious belief system, depending upon the individual, these strategies may incorporate also the religious coping strategies (RCS). The possible outcome of these strategies may be stress relief and spiritual well being (SWB), whereby a harmonious interconnectedness between self, others, nature, and Ultimate Other may be experienced, by which one can find meaning and purpose in life (Hood Morris 1996, Hungelmann et al.1985). Thus, SWB may be considered as an internal resource of coping in times of distress (Thomson 2000, Riley et al.1998, Landis 1996).

Furthermore, research identifies various bio-psycho-social factors which may influence the recovery of patients, such as age, education, religious beliefs, spiritual values and family support (Kim et al. 2000, Camp 1996, Moser and Dracup 1995, Koenig et al 1988, Reed 1987, 1986). Consequently, this longitudinal descriptive correlational study aimed to assess the relationships between the dependent variable of SCS and anxiety, depression, SWB and personal characteristics of Maltese patients with first MI during hospitalisation and the first three months after discharge.

2. The research process continuum

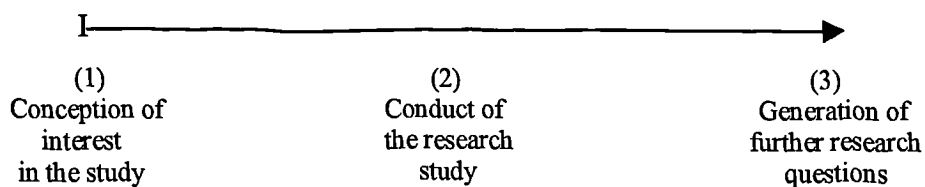
This chapter introduces the overall aims of the study and describes how it fills the gaps in the published literature. Additionally, it outlines the principles underlying this research process continuum. I called it *continuum*, for three reasons. Firstly, I took various decisions along the way of this study, to which I am giving rationale in this chapter and in

the subsequent chapters. The preliminary decisions, regarding the methodology, which were taken during the first two years of the study, were mostly under the supervision of my two supervisors at the University of Hull, U.K., supported by my supervisor and statistician at the University of Malta. However in other instances, especially during the period of data collection and data analysis, I found myself taking various decisions independently, such as the adoption of the theoretical framework of this study, composed of the two theories of Lazarus and Folkman (1984) and Otto (1950).

Secondly, I was highly conscious, that being who I am, that is a lecturer, coordinator of the Diploma nursing studies and an active member of the Society of Christian Education in Malta, I firmly believed that my role as a researcher could be a source of bias during the research process. Consequently, I could say that I reflected consistently along the research process to ensure rigour conduct of the study.

Thirdly, the continuum of the research study extends from the conception of my interest in the study and the open ended continuum of the research process, composed of the following three main stages (Figure 1).

Figure 1. The research process continuum.



2.1. Conception of the researcher's interest in the study.

Between 1978 and 1981 I used to work in intensive therapy unit (ITU) at the local general hospital, which used to include the coronary care unit (CCU). The initiative of the nurses in critical instances to call urgently the patient's family and the hospital chaplain by the bedside of a patient with cardiac problems, especially the patients with MI, used to astonish me. Moreover, the patient's sigh of relief, demonstrating a peaceful outcome on the respective patient, made me aware of the various ways of coping of patients to meet the demands of illness, especially when it was a life threatening illness, such as MI.

Furthermore, in 1992, during the M.Sc. nursing programme at King's College London University, I undertook a month's nursing experience in a neurological unit in a London teaching hospital as part fulfilment of the Reflective Practice module. On one night, I was assigned urgently on constant watch to an Arabic speaking patient Mr. Ahmed (*fictitious*), aged 50 years, during his third day post cranial surgery. Mr. Ahmed, who had several lines and tubes, had been reported as confused on late evenings and early mornings, wanting to get out of bed, to the detriment of his health. Since he was not accompanied by any member of his family, language was the main barrier, especially at night, in the absence of his interpreter.

Consequently, since Maltese is a Semitic language, containing some Arabic words, the night hospital manager thought that I could communicate with Mr. Ahmed. However, it was not so simple.

On my arrival to his single room, I assessed the patient's needs and also his environment. I managed to take care of him using verbal and non verbal techniques. During the night I stayed behind his door, monitoring for early signs of confusion. At 11.00 p.m. he woke up, saying Allah, Allah, Allah, Allah! At first I interpreted this rapid repetition of 'Allah' as *halli, halli* that is, *go away, leave me alone*. Meanwhile, it suddenly clicked to my mind, that being Arabic, he could belong to the Islam religion and so, he might have wanted to pray to Allah (God). Although I could not communicate perfectly well in Arabic, but my knowledge of Islam practices helped me to understand his spiritual need at that time, which was synonymous with the religious practice of prayer. Thus, I positioned his personal carpet, facing the East, and helped him put his feet on the carpet. Soon after, I left him alone in privacy as requested.

After about ten minutes, he called me back. I helped him back to bed and after sorting his lines and tubes, he slept calmly and peacefully till the morning. Then at 5.00 a.m. he showed the same desire to pray to Allah (God). Therefore, I realised that Mr.Ahmed was not at all 'confused' as he had been diagnosed earlier. He had become frustrated as he could not meet his spiritual need. Hence, according to Ross (1994) the level of health and SWB may be related to the extent to which individual's spiritual needs are met.

This case study was the peak of my nursing experience which gave me insight into the outcome of SCS in illness. For Mr. Ahmed, his spiritual coping was associated with a religious practice. However, the non-believers may use other coping strategies which may also help them find meaning and purpose in their illness, such as friendship, family support and talking to other patients with similar health problems. This implies that SCS apply to

both the believers and non-believers, including the presence of diverse religious beliefs (Baldacchino and Draper 2001, Cawley 1997, McSherry 1996, Burnard 1988).

These events and the paucity of research on the spiritual dimension in coping, triggered me to explore the possible relationship between SCS and anxiety, depression and SWB of Maltese patients with first MI. Hopefully, the findings of the study will contribute to nursing knowledge by filling in the following gaps in the literature.

2.1.1. Reducing the gaps in the published literature

Research gap No.1.

The minimal research available on SCS in illness was conducted mainly in the United states of America (USA). Research in Malta is still in its infancy. Thus, no such research was traced on the Maltese patients. Lazarus and Folkman (1984) and Cohen and Lazarus (1980) contend that patients may search for bio-psycho-social and spiritual support to cope with the demands of illness and feel more in control over the situation. According to Gouder (2000), 95% of the Maltese population is Roman Catholic. Therefore, it was expected that the patients may turn to their religion to cope with the stress of MI together with other SCS, such as family support. Therefore, the study addressed spiritual coping as a whole, including the RCS.

Research gap No.2.

The research traced, addressing the four variables under investigation, was mainly cross-sectional in design. Consequently, the study adopted a longitudinal design, which helped in assessing relationships between the variables studied during hospitalisation and the first three months after discharge. Additionally, patterns and fluctuations of results were

identified across time. Planning of the data collection was founded on the research oriented towards anxiety and depression in MI. Literature provides evidence about the high levels of anxiety and depression in CCU (Lane et al. 2002, Thornton 2001, Kim et al. 2000, Thompson and Webster 1989, Thompson et al.1989). At this acute stage of MI, I decided not to collect extensive data to prevent further physical distress. Therefore I only recruited the patients at this time (T1) whereby the Mental Test Score was administered (F.2. p. 498).

Furthermore, on transfer to the medical ward (T2), anxiety and depression may become higher due to the loss of close monitoring in CCU (Crowe et al.1996, Schactman 1987). On discharge home (T3), high levels of anxiety and depression may result due to losing the security from the assistance of the health care team (Terry 1992, Toth 1987). Additionally, the levels of stress tend to peak at about six weeks after discharge (T4) (Crowe et al.1996, Thompson and Webster 1989, Thompson et al.1987) and decrease by the third month (T5) and six months after discharge (Havik and Maeland 1990, Wiklund et al.1984).

Originally, it was planned that the sixth month (T6) would be included. However, due to time constraints, data collection was completed by the third month following discharge. This longitudinal study managed to shed light on the possible impact of the Maltese culture on the levels of anxiety, depression and SWB which may be due to the closely knit family centred support in times of illness.

Research gap No.3.

The scarce studies available are mainly quantitative in nature such as, Koenig et al. (1998) and Saudia et al.(1991) whilst some are qualitative studies, for example, Roebuck et al. (2001) and Stewart et al. (2000). Thus, I decided to provide a richer and fuller perspective

of the relationships between the variables studied by amalgamating the quantitative and qualitative methods (Ingalill 2000, Corner 1991, Duffy 1985). Since the nature of the study required a longitudinal correlational design, I had to adopt the quantitative method. However, the qualitative data enhanced the interpretation of the direction of the relationships between the variables, such as relationship between SCS and anxiety.

Research gap No. 4.

Literature used the term spirituality synonymously with religiosity, rendering the findings applicable only to the believers. The new scale, HSCS scale comprises both the RCS and the NRCS. Hence, the scale addresses spiritual coping of both the believers and non-believers.

Research gap No. 5.

Most of research in MI, recruited samples of older age, mainly up to 70 years, such as Crowe et al. (1996) and Thompson (1990). Therefore, in order to identify possible differences in age groups, the inclusion age was from 40 years and over. The recruited sample's age ranged between 40 and 89 years, mean age 61.9 years.

2.2. Conduct of the research study

2.2.1. Focusing down the title of the research study.

Originally, the title was planned to be 'Spiritual coping strategies, anxiety, depression and spiritual well being of Maltese patients with MI : The nurse's role'. Additional to the present focused study, the original plan aimed to define the term SWB and the nurse's role in the delivery of spiritual care by the use of structured self-administered questionnaires. These two questionnaires were developed and tested for reliability and construct validity.

Although this information was gathered also, I decided to concentrate mainly on the present title of the study. Hopefully, data analysis will be completed in the near future.

2.2.2. Theoretical Framework

Originally, I intended to use only the Cognitive theory of Stress and Coping (Lazarus and Folkman 1984). However, on analysing the theory, I felt persistently its limitation in the provision of rationale for the use and helpfulness of the religious component of coping. Following consultation with my supervisor in Malta, the Dean of the Faculty of Theology, I attended two credits on Psychology of Religion at the University of Malta.

The first credit consisted of various theories, such as Jung's theory of Individuation, James' theory of the Varieties of Religious Experience and Otto's theory of the Idea of the Holy. Jung's theory considered religion and relationship with God as an essential dimension of the process of life to become a whole person. James' theory looked at the individual experience of religion in life. Following analysis of these theories, I decided to select Otto's theory of the *numinous* experience which was directly associated with appraisal of self in stress and self-transcendence to God to empower oneself to cope with stress. Hence Otto's theory complemented that of Lazarus and Folkman (1984) in providing the rationale for coping by religious strategies.

2.2.3. Research Instruments and data collection

To measure the variables under investigation, I decided to use two established tools given authorization by the authors (Appendix A1.1. p.438, A.2.1. p.441). The HAD scale (Zigmond and Snaith 1983) measured anxiety and depression (Appendix G.5. p.516) whilst JAREL SWB scale (Hungelmann et al.1985) assessed spiritual well being (Appendix G.3.

p.508). Additionally, I devised the Demographic data questionnaire (Appendix G.1. p.505) to derive the nominal data of the personal characteristics. The Helpfulness of Spiritual Coping strategies (HSCS) scale (Appendix G.6. p.520) was devised to quantify the use and helpfulness of a set of SCS, composed of nine religious and eleven non-religious coping strategies.

To support the quantitative data, I devised two interview schedules. Part of the first interview explored patients' perceptions of the definitions of spirituality and SWB on the medical ward (T2). The whole interview served as a background information about the patients' perceptions of the spiritual dimension in illness (Appendix G.2. p.507). The second consisted of the Use of Spiritual Coping Strategies (USCS) interview schedule (Appendix G.8. p.528) which discovered the reasons for the perceived helpfulness of SCS during hospitalisation. This information was collected retrospectively on patients' discharge from hospital (T3).

To enhance comprehension of the statements, I presented the instruments in Maltese. The translation process involved a three member expert panel of linguistics, who worked in close collaboration with me. The translation of the tools was based on the guidelines of Maltese translation proposed by Chetcuti (1975). Furthermore, to compare the reliability of the translated tools with that of the original version, I carried out a series of reliability test-retesting tools on cohort groups of nursing students. Statistical analysis revealed satisfactory reliability and internal consistency of the instruments. Additionally, construct validity of the instruments identified two factors in each of the three questionnaires. The HAD scale (Zigmond and Snaith 1983) consisted of anxiety and depression, the JAREL SWB scale (Hungelmann et al. 1985) incorporated the existential and religious well being

factors whilst the HSCS scale encompassed the religious and non-religious coping strategies.

Following data collection, the use and helpfulness scores of spiritual coping strategies were found highly correlated (Tables 4.4 – 4.6). Hence, I added the two scores into one single score, named as ‘use and helpfulness’ of SCS and I worked all the statistical analysis against the new scoring system. Furthermore, the measurements of the Likert and the VAS of the JAREL SWB scale (Hungelmann et al. 1985) were highly correlated (Table 4.3.). These results demonstrated the reliability of the instrument. Consequently, I used only the data of the original Likert form scale during the statistical analysis of the correlations between the SCS and SWB.

2.2.4. Overcoming the attrition rate of the sample

According to the Hospital Activity Assessment (Distefano 2002), between 1996 and 2001 the approximate estimation of the total number of patients admitted with MI at the general hospital in Malta was approximately three hundred (Table 4.2.). The study adopted a descriptive longitudinal design. This helped in the identification of changes of variables across time. A systematic sampling technique was used, whereby every second patient who met the inclusion criteria was selected. However, the high attrition rate is well documented (Polit and Hungler 1999, Burns and Grove 1997, Cormach 1996). Power analysis suggested a sample size of fifty at (power of 0.80, $p=0.05$) (Polit and Hungler 1999). Therefore, to make up for the attrition rate, I planned to recruit sixty patients. However, mid-way, I could notice that the various reasons for the loss of patients (Appendix K2, Table K2.13 p.573) would interfere with the survival of the final stipulated sample size.

Consequently, I decided to increase the sample size to seventy patients. Fortunately, this plan survived the sample to a number of fifty one patients by the end of the last data collection time (T5).

2.2.5. The research question, aim and objectives.

The study sought to answer the following research question:

- What is the relationship between the use and helpfulness of spiritual coping strategies and anxiety, depression, spiritual well being and personal characteristics of Maltese patients during hospitalisation and the first three months after discharge?

To answer the research question, this study aimed to:

- Identify relationships between SCS and anxiety, depression, SWB and personal characteristics of Maltese patients with first MI from transfer to the medical ward to the first three months after discharge.

Furthermore, to achieve the aim of the study, the following objectives were formulated:

- define the terms spirituality and spiritual well being as perceived by patients,
- measure the levels of anxiety, depression, SWB and use and helpfulness of SCS on transfer to the medical ward (T2), on discharge home (T3), on the sixth week (T4) and on the third month after discharge(T5),
- specify individual differences, pattern and fluctuations of results in SCS, anxiety, depression and SWB across time,
- discover statistical relationships between SCS and anxiety, depression, SWB and personal characteristics.
- rank the first five SCS perceived as most helpful to cope with MI.
- explore the rationale for the helpfulness of SCS in coping with MI.

3. Generation of further research questions

The findings revealed increased scores of SCS across time. Both the quantitative and qualitative data demonstrated the increased use of both the religious coping strategies (RCS) and the non-religious coping strategies (NRCS) to cope with the demands of MI. Similarly, SWB scores increased after hospitalisation and remained stable across time, supporting the literature which considers SWB as an internal resource of coping (Thomson 2000, Riley 1998, Landis 1996). In contrast, it was found that the high levels of anxiety and depression in hospital declined constantly and became within normal limits by the third month after discharge.

The constant decline was found incongruent with the research findings in MI, conducted in different cultures, such as Taiwan (Chiou et al. 1997), Sweden (Wiklund et al. 1984), Norway (Havik and Maeland 1990), United Kingdom (Thompson et al. 1987) and Australia (Terry 1992). Research suggests that anxiety and depression may increase on discharge (Havik and Maeland 1990) and may peak again at about six weeks after discharge (Thompson and Webster 1989, Thompson 1989,1982). However, the return of patients' scores of anxiety and depression to normal levels is parallel with research, stating that the increased levels may subside by the third month (Havik and Maeland 1990 and Wiklund et al.1984).

Moreover, the findings indicated a negative significant relationship between SCS and anxiety and depression. In contrast, a positive significant relationship was identified between SCS and SWB. Minimal significant differences were found in SCS between the subgroups of the twelve personal characteristics studied.

The qualitative data identified the possible factors contributing towards the constant decline of anxiety and depression and the stability of SCS and SWB across time. Examples are, the Maltese culture, which offers increased family support in time of distress, the use of SCS, including RCS and the small distances in Malta, where medical assistance may be convened speedily.

However, my visits to patients in hospital and at home may have yielded positive and negative influences on the levels of anxiety, depression, SWB and SCS. My presence may have caused relief of stress as I allowed time for their queries at the end of data collection. Conversely, my presence may have reminded them about their bitter experience of MI, which may have increased their level of anxiety.

Consequently, while considering the limitations of the study, I suggested further research, such as extension of the study to analyse the additional information collected, so as to establish any significant relationships between SWB and anxiety and depression.

Additionally, replication of the study with a larger sample of patients with MI was recommended to allow comparison of fluctuation of results with reference groups, such as healthy groups and / or patients with chronic illness, for example renal failure.

While considering the strengths of the study, such as the use of theory and method triangulation, identification of fluctuation of findings across time, the development of HSCS scale to assess the use and helpfulness of SCS and the Maltese translation of the two original established tools, recommendations were made to the hospital management, clinical practice and nursing education. These recommendations aimed at integrating the art

and science of nursing (Whelton 2000) and amalgamating the pure and applied knowledge (Cash 2000) with the sole aim of promoting holistic care.

4. Presentation of chapters of thesis.

The thesis incorporates three main groups of chapters. The first chapter presents the definitions of the term spirituality and the spiritual dimension of a person, based on the nursing, philosophical, psychological, theological and sociological literature. The research based literature discussed the four variables of SCS, anxiety, depression, SWB and personal characteristics. Since research on the relationships between these four variables is scarce, an outline is given on the possible relationships between SCS and the other variables under investigation. Chapter two describes Christianity as a coping mechanism to enable understanding of the RCS used by the patients who were all affiliated with Roman Catholic religion.

The second group consists of the methodology chapters which discuss the outline of the plan, design, development of the Helpfulness of Spiritual Coping Strategies (HSCS) scale, testing of tools, ethical considerations and conduct of the research study on a systematic sample of seventy patients with first MI.

The third group of chapters present and discuss the findings of the main study in comparison with published research. Finally, the conclusion chapter summarizes the research process and identifies the strengths and limitations of the study. This is followed by recommendations to the hospital management, clinical practice, nursing education and further research. Hopefully, these findings will enrich the nursing body of knowledge and

enhance nurse education to improve holistic care in hospital and the recovery phase in the community.

CHAPTER ONE

Literature Review

Introduction

The aim of this study is to identify relationships between spiritual coping strategies (SCS), anxiety, depression, spiritual well being (SWB) and personal characteristics of patients with first myocardial infarction (MI) during hospitalisation and the first three months after discharge.

This literature review aims to:

- provide a theoretical framework for the research studies based on two conceptual theories namely, Stress and Coping (Lazarus and Folkman 1984) and the Idea of the Holy, known as the *Numinous* Experience (Otto 1950);
- critically analyse the nursing, medical and psychosocial research on SCS, anxiety, depression and SWB of patients with MI;
- summarise the findings of research on SCS and SWB from non-cardiac studies and relate them to MI where possible;
- explore possible relationships between SCS and anxiety, depression, SWB and personal characteristics.

To achieve these aims this chapter incorporates six subsections namely:

- Literature search,
- definition, process and impact of MI on individual's life,
- an outline of the two conceptual psychological theories on stress and coping (Lazarus and Folkman 1984) and the *numinous* experience (Otto 1950),
- a holistic definition of the spiritual dimension of person by the use of the nursing, psychosocial, philosophical and theological literature, and
- analysis of the research studies on the three main variables under investigation.

Each section is supported by rationale from the two cognitive theories of Lazarus and Folkman (1984) and Otto (1950). At the end of each section a summary is presented together with an account of the possible relationships between the respective variable and SCS and personal characteristics. Since minimal studies addressed the variables under investigation in patients with MI, both conceptual theories were used to apply the studies to patients with MI.

1. Literature search strategy

Literature was searched in the following sources:

- CINAHL (Cumulative Index to Nursing and Allied Health Literature),
- Medline (U.S. National Library of Medicine),
- BIDS-ISI (Bath Information and Data Services),
- ASSIA (Applied Social Sciences Indexes and Abstracts),
- Philosopher's Index containing philosophy of medicine and health care,
- UnCover database for periodicals,
- Zetoc database for periodicals in the British Library,
- Electronic directories of health resources,
- Manual search.

Literature search extended from 1980 to 2002. The key words used were a combination of 'MI, illness, anxiety, depression, stress, spirituality, spiritual methods/strategies, religious methods/strategies/practices, coping, adaptation, hope, meaning, purpose in life, self-transcendence, life satisfaction, SWB, religious well being (RWB), and existential well being (EWB)'. Literature derived from this combination of keywords was abundant. However, most of the literature was anecdotal and the existing research studies were mostly oriented towards oncology and medical illness with very few on MI.

The literature traced on the variables under investigation consisted of the following papers (Table 1.1.)

Table 1.1. Literature traced from 1980 to 2002

Variables	Number of papers
Anxiety, depression and coping in MI	206
Coping in MI	216
Stress in MI	354
Spirituality/ spiritual health/ SWB	159
Religious well being	50
Existential well being	55
Quality of life in illness	110
Meaning in life	59
Self-transcendence	74
Life satisfaction and Quality of life	1361
Hope in illness	503

Table 1.1. shows that research on SWB in MI is very scarce so literature was traced through its related characteristics. Out of all this literature, very few studies addressed directly MI and the aim of the study. Additionally, I managed to obtain seven theses:

- three theses from the University of Hull, that is, McSherry (1996), Kearney (1994) and Dunn (1993),
- five theses through the Interloan Library, namely, Rom(1994), Ross (1992), Fulton (1992), Piles (1986) and Simsen (1985).

Furthermore, preliminary analysis of this literature showed that the term spirituality, was frequently used interchangeably with religiosity and religious practices. Therefore, a set of criteria was established for the selection of the appropriate studies for review:

- aims and objectives of the study clearly stated, addressing directly or indirectly the identification of SCS, SWB, anxiety and depression,
- reliability and validity of the study included,
- research design and method described clearly,
- findings presented unambiguously,
- discussion of findings oriented towards specific spiritual coping;
- strategies, SWB in illness and anxiety, depression in MI,
- recommendations outlined according to the aims and objectives of the study.

Following scrutiny of the available research-based studies, a total of 42 studies were selected consisting of 15 on SCS, 13 on SWB and 14 on anxiety and depression. The review also incorporates broader literature defining and discussing the spiritual dimension and the nature of SWB. Additionally, attention was paid to anecdotal nursing literature and the broader literature of psychology, sociology, philosophy and theology where this was useful.

Although an attempt was made to choose the most appropriate studies, the selected ones contained some methodological weaknesses which limit generalisation of results and inhibit a thorough exploration of such subjective concepts of SCS and SWB. Examples are cross sectional small scale studies such as Ferrell (1997) and Belcher et al. (1989). Human behaviour may change over time and so data collection on just one occasion may not capture changes across time. The use of non-random samples such as the convenience samples used by Burkhardt (1994) and Sodestrom and Martinson (1987). Since convenience sampling technique does not give an equal chance to all the population to participate, the results may be skewed due to other confounding variables, such as age and education.

Furthermore, collection of data by new research instruments used for the first time, such as The Helpfulness of Prayer scale used by Saudia et al. (1991) and the Positive Life Orientation scale utilised by Agarwal et al. (1994) may threaten the rigor of the study due to insufficient reliability of the instruments. The use of quantitative research designs without being supported by qualitative data tend to keep the subjects' rationale concealed. This is exhibited by the studies conducted by Koenig et al. (1988) and Acklin et al. (1983) who attempted to study religious orientation without interviewing or observing the patients so as to elicit the actual behaviour of patients.

It is noted that although the literature review was aimed to contain literature from 1980 to 2002, I made use also of various seminal literature, such as Moberg (1979), Nightingale's (1860) and Henderson's (1969) models of care, Allport and Ross (1967), together with some philosophical literature, like Dewey (1934) and Kauffman (1972) and theological literature, such as McCann (1964) and Pope Paul VI (1967). Unfortunately, most of the philosophical literature were derived from secondary sources such as Jaspers' philosophy in Kauffman (1972) and Aristotle's and Plato's philosophy in Solomon (1998). This was due to the difficulties encountered to obtain the original books and articles from the Interloan Library.

2. Myocardial Infarction : Definition, process and impact on individual's life.

It is well documented that MI is a life threatening illness whereby the patient faces a sudden acute illness which may be followed by chronic complications, such as heart failure (Urden et al. 2002, Smeltzer et al.1996, Swanton 1998 and Guyton and Hall (1994).

Urden et al. (2002) define MI as the process by which myocardial tissue is destroyed in regions of the heart which are deprived of sufficient blood supply because of a reduced coronary blood supply. This lack of blood flow to the myocardium is caused by a severe narrowing of a coronary artery due to thrombus formation. Consequently, there is a critical imbalance between oxygen supply and demand for oxygen by the myocardium.

Urden et al. (2002) state that the diagnosis of MI is done mainly on patients' present and past illnesses, including the family history of coronary diseases. Persistent chest pain may give subjective diagnosis of MI. Furthermore, diagnosis may be achieved objectively by:

- Electrocardiogram (ECG) changes where new Q waves indicate transmural infarction,
- ST-segment elevation which appears usually within 24 hours of MI and/ or ST-segment depression indicating additional ischaemia and coronary disease,
- Elevated cardiac enzymes, such as Creatinine Phosphokinase(CPK), the most specific cardiac enzyme, which increases and decreases within the first 72 hours of MI.

Furthermore, the ECG demonstrates the location of MI, which may occur at the anterolateral, anteroseptal, antero-apical, inferior or posterior site. According to Swanton (1998), if MI is untreated, 50% of patients may die within the first two hours whilst 40% may die within the first 4 weeks of symptoms. Hence, urgent treatment in hospital is necessary for thrombolysis treatment and/or percutaneous transluminal coronary angioplasty (PTCA).

Urden et al. (2002) list the following possible complications of acute MI:

- recurrent unstable angina,
- bradycardia and/or heart block,
- atrial or ventricular arrhythmia, tachycardia, pericarditis,
- left ventricular failure and cardiac arrest which may lead to sudden death.

Moreover, Guyton and Hall (1994) outline the stages of recovery from MI, stating that the area around the infarcted part becomes nonfunctional. However, by the healing effect of the collateral circulation and treatment, the infarcted area becomes smaller and within approximately three weeks, the muscle becomes functional again. It is of extreme importance that the patient rests during the acute phase and participates in the rehabilitation programme to return to normal (Urden et al. 2002).

Furthermore, on facing the sudden onset of a life threatening illness, a series of physiological responses occur, in an attempt to adapt to the stressful situation, where the production of increased adreno-corticotrophic hormone (ACTH) is triggered with the resultant stimulation of the sympathetic nervous system. This could be exhibited by the presence of high levels of epinephrine and norepinephrine in plasma and urine. This process leads to a greater demand of oxygen which may lead to complications such as pulmonary oedema, congestive heart failure and possibly another MI (Smeltzer and Bare 1996).

Research provides evidence to suggest that the recovery time from MI to the return to normal life is one of uncertainty and emotional turmoil, both for the patient and the relatives (Lane et al. 2002, Mayou et al. 2000, Jaarsma et al. 1995, Thompson 1982). Additionally, the person's whole sense of meaning may be jeopardised by the acute sudden onset of life threatening illness and the individual may go through a period of reappraisal and reevaluation of his/her life. This is because the patient attempts to make sense of his/her illness, hospitalisation and hope for future life (Burnard 1987b, Simsen 1985).

Therefore, Rose et al. (1994) explain that patients with MI face both an immediate life-threatening illness and the potential for living with a major chronic illness.

Miller (1985) defines the holistic perspective of chronic illness as an altered health state with impaired functioning in more than one of the body-mind and spirit systems. Patients may identify their recent MI and related feelings as a source of stress due to uncertainty about their future health status, fear of the unknown and the threat of impending death (Roebuck et al. 2001, Stewart et al. 2000, Mayou et al. 2000, Miller et al. 1998). Therefore, research affirms that anxiety and depression tend to be common among myocardial survivors (Lane et al. 2002, Rose et al. 1994, Agarwal et al. 1994, Conn et al. 1991, Thompson 1987, 1982).

Furthermore, although MI heals as a result of medical treatment and collateral circulation (Urden et al. 2002, Harkness and Dincher 1999), the fear of recurrence of MI with the possibility of sudden death may threaten safety and security in life (Rose et al. 1994, Lane et al. 2002, Mayou et al. 2000). According to Maslow (1999) safety and security may contribute towards wholeness of self and full functioning of his/her capabilities. Therefore, although the infarct may heal physiologically, the patient may experience chronic illness due to the individual holistic response to MI. This is reinforced by Stoll (1989) stating:

‘in reality, a person responds to an illness holistically. When people are physically ill, their spirit and psychosocial dimensions are inevitably affected. The person’s spirit finds its expression through psychosocial and physiological behaviours’ (p.184).

Therefore, safety and security in life through social support (Taylor and Aspinwall 1996, Morse and Johnson 1991, Stoll 1989) and finding meaning and purpose in life (Walton 2002, Thompson 1990, Frankl 1962) may enhance adaptation during the recovery from MI.

3. Theoretical Framework

During the planning phase, other psychological theories were assessed for their applicability to the aim of the study such as:

- Stress, illness behaviour and the sick role (Mechanic and Volkart 1961),
- Self-regulating processing system of illness and coping with health threats (Leventhal et al. 1984),
- Self efficacy theory (Bandura 1997).

However, the cognitive theory of Stress and Coping of Lazarus and Folkman (1984) appeared more appropriate for the study. This is because it incorporates both stress appraisal and coping system, the concepts of which were tested repeatedly by various researchers such as Folkman et al.(1986), Billings and Moos (1984) and Roth and Cohen (1986). Therefore research confirmed the ongoing process of stress and coping proposed by Lazarus and Folkman (1984) as outlined in the next section. Since the study was conducted in Malta, dominated by Christianity, additional theoretical support was needed. Therefore, other theories on religious experiences were analysed to select the most appropriate theory to meet the aim of the study, such as:

- Theory of Individuation (Jung 1933),
- Theory of the Varieties of Religious Experience (James 1960),
- Theory of Religion, values and peak experiences (Maslow 1974).

As outlined earlier in the introduction chapter, The Idea of the Holy (Otto 1950) was considered the most suitable for this study as it supports the stress coping process proposed by Lazarus and Folkman (1984) as depicted in Figure 1.3. The Idea of the Holy (Otto 1950) which deals with the *numinous* experience which is common in all Semitic religions.



Semitic religions have a common belief of monotheism, that is the understanding that there is one God, a doctrine central to Judaism, Christianity and Islam.

3.1 Cognitive Theory of Stress and Coping (Lazarus and Folkman 1984)

Lazarus and Folkman (1984) define stress as a relationship between the person and the environment which is appraised by the individual as taxing or exceeding his/her resources and which, according to Folkman (1984), may endanger his/her well being.

Coping is defined by Lazarus and Folkman (1984) as:

‘constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person’ (p.141).

Therefore, this theory is oriented towards a relationship between a person and his/her environment, such as illness, which is process oriented, which is constantly changing.

Lazarus and Folkman (1984) contend that any changes in the person-environment relationship will lead to a reevaluation process of the stressful encounter, which in turn, may influence subsequent ways of coping.

Stress and Cognitive appraisal

On being faced by a stressful encounter, such as a life threatening illness, the individual assesses its significance to his/her personal well being, that is by *primary appraisal*. This is followed by *secondary appraisal*, whereby the individual evaluates his/her coping resources and options for managing it. These two types of appraisals occur on an ongoing basis as the individual is continuously consciously or unconsciously receiving feedback

from the process and evaluating the balance between perceived demands and limitations of his/her coping resources.

According to Lazarus and Folkman (1984), *primary appraisal* classifies the encounter as irrelevant, having no significance, benign-positive, lying within the range of the individual's coping resources, or stressful. A perceived stressful encounter is further categorised as harm/loss, threatening or challenging to his/her well being. Thus a threatening situation yields negative emotions such as anxiety and depression. Conversely, a challenging transaction stimulates positive emotions, such as enjoyment and eagerness. However, Folkman (1984) argues that although appraisals of threat and challenge are independent, they are likely to occur simultaneously during the anticipatory stage of a stressful event. For example, a patient with MI, who is awaiting an ECG result, after the onset of chest pain, may experience both threatening and challenging emotions simultaneously.

Furthermore, the individual undergoes *secondary appraisal* whereby the individual evaluates the possible coping strategies to be implemented to meet the demands of the situation. Folkman (1984) outlines four types of coping resources:

- physical resources which are the person's health and energy,
- social resources consisting of the social support systems,
- psychological resources referring to the person's beliefs that can sustain hope and skills for problem solving,
- material resources which incorporate financial resources and equipment needed to meet his/her needs.

It is noted that although spiritual resources are not specifically mentioned, but Lazarus and Folkman (1984) acknowledge the paucity of research on the shared cultural ways of responding to the stressful encounters. Therefore, Folkman (1984) reinforces the importance of the general beliefs such as religious beliefs and specific personal beliefs of a particular person which are relevant to primary and secondary appraisals.

Consequently, Folkman (1984) identifies two main factors, that is, person and situational factors which may influence appraisals of the situation. Person factors are generalised beliefs, such as beliefs about control of the stressful encounter. Thus, a belief in an *internal locus* of control renders a person to consider events and coping as depending upon his/her behaviour. However, believing in an *external locus of control*, the person considers events and coping based on luck, destiny or powerful others. Additionally, individual's commitments in life, such as roles and goals in life determine the personal meaning of the event and the available resources for coping. Moreover, situational factors may play an important part, like the nature of the event, whether life-threatening or an ambiguous outcome, such as possible recurrence of illness. Lazarus and Launier (1978) propose that in the presence of uncertainty, appraisal of an event and of the available coping resources becomes difficult or impossible.

Coping

Folkman (1984) defines coping as the cognitive and behavioural efforts to master, reduce or tolerate the internal and external demands created by the stressful event. Lazarus and Folkman (1984) assert that coping is independent of outcome/end result and whether or not it is successful. This means that no one strategy is considered inherently better than any

other. Lazarus and Folkman (1984) argue that the efficacy of a strategy is determined only by its effects in a given encounter and in the long term (Lazarus and Folkman 1984).

The function of coping is twofold. Firstly, the regulation of emotions or distress by the *emotion-focused strategies*, such as seeing the positive side of the situation to maintain hope and optimism. Secondly, the management of the problem that is causing the distress by *problem-focused coping strategies*, that is doing something about the problem, such as smoking cessation.

Consequently, Lazarus and Folkman (1984) contend that the central function of coping is oriented towards reducing tension and restoring equilibrium. Therefore, the individual is to base his/her coping on reality and not on denial or avoidance. Otherwise, the person fails to engage in appropriate problem-focused coping, such as seeking medical assistance in illness.

Research shows that subjects used both problem-focused and emotion-focused strategies to cope with stressful circumstances (Folkman et al. 1986, Folkman 1980). Additionally, an increase in problem-focused ways of coping was found in situations which were appraised as having the potential of undergoing change. Thus, considering the situation as falling within their control. However, the emotion-focused coping increased in stressful conditions which were not liable to change (Folkman et al. 1986, Lazarus 1981).

According to Folkman (1984) and Averill (1973), the process of coping may consist of alteration of the meaning of a stressful situation by a series of cognitive and /or behavioural efforts in an attempt to have control over the situation. This can be done during illness, by

performing positive comparisons with other patients who have the same or different illness, realising that their stressful situation may have been worse (Levy 1981). Hence, this type of coping is known as *cognitive reappraisal* whereby the meaning of a stressful situation is altered by an emotion-focused strategy, without changing the situation objectively (Lazarus and Folkman 1984). Alternatively, the meaning of a stressful situation can remain the same but the individual may implement a coping strategy, such as distraction or meditation to ease his/her mind off the stressful situation temporarily. Following repetitive exploration of the role of religious coping in difficult times, Koenig (1988) proposes that:

‘intrapsychic religious behaviours may alter stress appraisal.....and result in the perception of events as less threatening’ (p.309).

Consequently, Folkman (1984) recognises this form of cognitive reappraisal as *secondary control* as the individual attempts to:

‘accommodate oneself to uncontrollable eventsthat enhances perceptions of control in ostensibly uncontrollable circumstances’
(p. 844)

Furthermore, according to the analysis of Folkman (1984), secondary control may be achieved by illusory, vicarious and interpretive control:

- Illusion control helps the individuals to side with the force of chance so that they may share in the perceived control exerted by that powerful force.
- Vicarious control allows individuals to obtain control by their association with powerful others (Bandura 1997), such as professional medical team and/or maintaining relationship with God.
- Interpretive control is acquired by fetching more information to enable him/herself to search for meaning and understand the situation.

Furthermore, several coping strategies may be used in an attempt to shape the meaning or significance of a stressful event. Folkman et al.(1986) and Folkman and Lazarus (1980) found that in most stressful encounters, both problem and emotion-focused coping were used. Thus, when realistic goals are set, a coping strategy may bring emotional equilibrium by changing the person-environment relationship for the better (p.138).

Furthermore, Lazarus and Folkman (1984) point out that coping may be influenced by person and situational factors. This is supported by research whereby increased information was negatively related to post-op recovery (Cohen and Lazarus 1973).

Perceived control over the stressful event may lead to different types of coping strategies, that is use of emotion-focused strategies, when the situation is perceived as uncontrollable, as opposed to problem-focused coping when there is potential control. (Keckeisen and Nyamathi 1990, Roth and Cohen 1986, Lazarus and Folkman 1986, Lazarus 1981).

Additionally, socio-demographic characteristics, such as gender, work and health may influence the type of coping strategies used (Billings and Moos 1984, Lazarus and Folkman 1980).

Finally, Lazarus (1981) proposes that an individual has a repertoire of cognitions and behaviours. These were accumulated through learning and development which are used automatically to cope with demands in life. Thus, culture may play an important role in the personal beliefs, such as religiosity, which may be deeply ingrained into the social fabric of society (Koenig et al.1998). Consequently, Lazarus and Folkman (1984) recommend further research to explore:

‘whether some coping patterns are more serviceable than others in given types of people, for given types of psychological stress, at certain times, and under given known conditions’ (p.147).

Therefore the aim of this study is to explore spiritual coping, including religious coping which may be used by patients with first MI in Malta, which is highly dominated by Roman Catholic religion. To support the cognitive theory of stress and coping (Lazarus and Folkman 1984), the theory of the Idea of the Holy is outlined (Otto 1950) in order to understand why an individual turn to religiosity in times of distress.

3.2 The Idea of the Holy : The *numinous* Experience (Otto 1950)

Rudolph Otto was a German Christian theologian (1868-1937) who conducted phenomenological research studies on religions, including non-Christian religions. The book, *The Idea of the Holy, DAS Heilige*, published in 1917, and translated into English in 1923 and 1950, discusses the essence of religious feeling/experience, by identifying the common element within the various religions, referred to as the non rational factor.

Holy is related to the behavioural domain and the rational factor of the belief system of the individual. The behavioural / ethical domain is manifested by righteousness, abiding by moral values, such as obeying the commandments and leading a good life. Additionally, the rational factor refers to the beliefs of the specific religion.

According to Otto (1950), the experience of the holy is considered as “ the innermost core.....the living force in the Semitic religions” (p.6). This common element is known as the *numen* in Latin, composed of ‘the holy’ *minus* its moral factor and its rational factor’ (p.6).

Figure 1.1. The Numen and the nature of the *numinous* experience (Otto 1950)

Numen = Holy - (moral/ethical issues + rational /beliefs)

Numinous Experience = the creature feeling of nothingness in contrast to the supreme above all creatures

The sense of personal nothingness and insufficiency triggers the individual to long to reach a higher power, according to his/her respective religion, that is, God / Ultimate Other. This is exhibited by Saint Augustine in his confessions, stating, 'My soul longs to find refuge in you oh Lord. I shall find peace in you alone' Portelli (1989). Hence, the *numinous* experience is a complex feeling, unique to every individual, which drives him/her to find existential meaning.

According to Otto (1950), the *numinous* experience exists as an inborn capacity, so it can be induced or awakened. However, since this is a complex feeling, Otto (1950) proposes a method of explaining such a complex experience, that is by means of 'ideograms' or symbols, derived from events in the natural sphere which convey meaning to the individual. For instance, a sudden onset of disease, such as MI, may give meaning to the individual, which may lead to behavioural change, such as reevaluation of his/her life and resetting of personal life priorities.

Furthermore, the *numinous* experience is composed of:

- the *numinous* object, the individual and
- the *mysterium*, that is the wholly other, higher power, transcendent, supernatural, lying beyond the individual.

According to Otto (1950), the *mysterium* consists of a dual structure:

- the *mysterium tremendum*, which is an object that is awesome and daunting yielding negative emotions,
- the *mysterium fascinans*, which is an attractive and fascinating object.

Otto (1950) claims that these opposing qualities of the *mysterium*, form a 'strange harmony of contrasts' (p.31). The *mysterium tremendum* refers to an emotion of tremor, fear and is composed of the three elements of awfulness, majesty and energy/urgency. The *awfulness* element is the awe and fear, experienced by the individual, oriented towards the 'feeling of personal nothingness and submergence before the awe-inspiring object directly experienced' (p.17). This leads to the element of *majesty*, empowerment, in an attempt to overcome the feeling of insufficiency. This is followed by the element of *energy* which is a characteristic of the *numen*, symbolised by will, force and activity. The *mysterium tremendum* may trigger the individual to direct him/herself away from or towards the *mysterium* (wholly other/higher power).

A practical example explains this complexity. The sudden onset of illness, such as MI, the person is confronted by symptoms of death, such as severe compressive chest pain, sweat, dizziness and dyspnoea. MI threatens the life of the individual, who fears death on realising the personal lack of control over his/her life (*awfulness*). However, on finding meaning and purpose to live (*majesty*), it may lead the person to develop a strong will to live (*energy*). If not, the fear and personal nothingness may overcome the individual, who may lose any hope to live. Therefore, the individual seeks the *mysterium*, 'wholly other' for self-empowerment, enabling him/herself to meet the demands of the crisis situation. Thus the feeling of the *mysterium tremendum* :

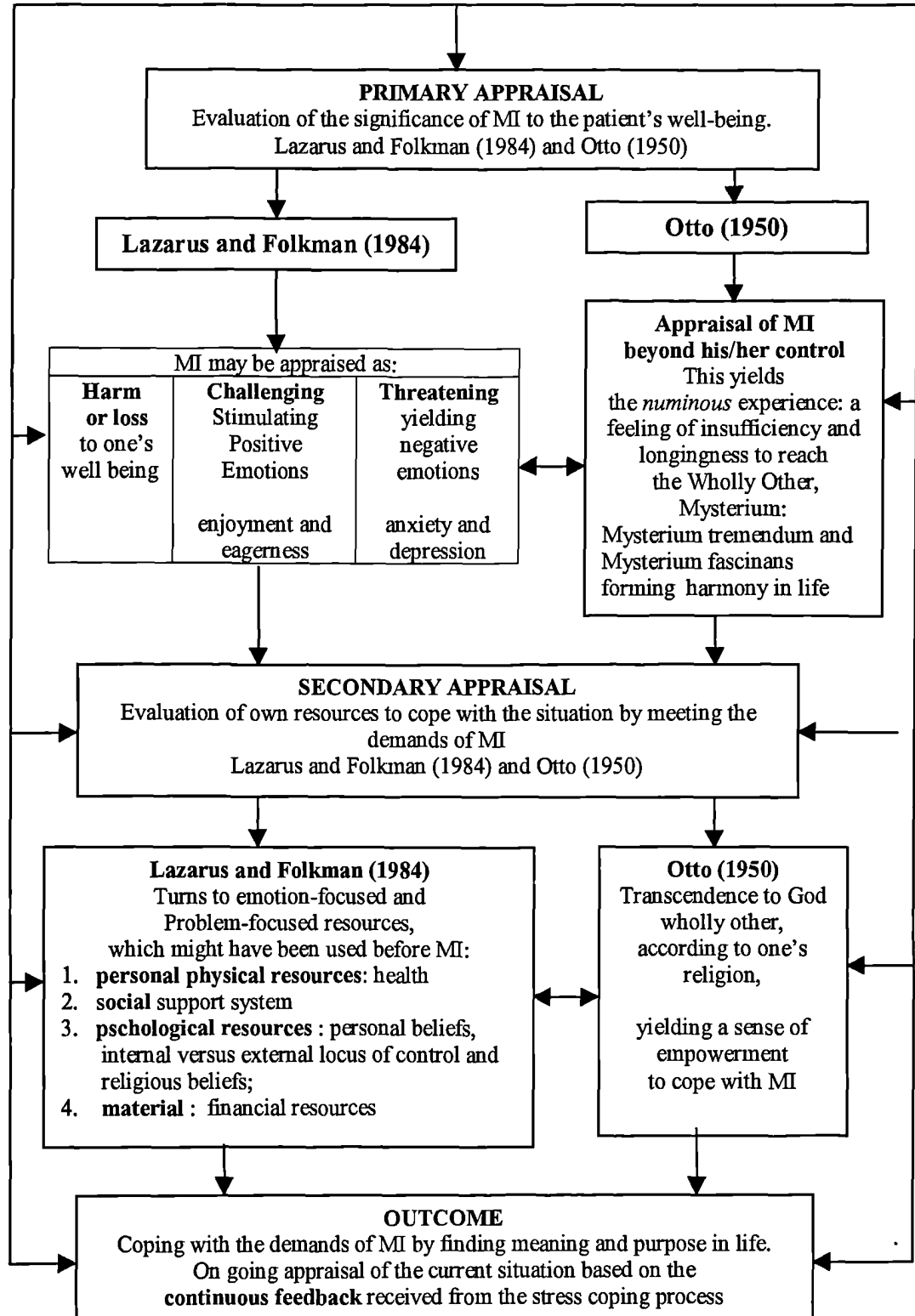
‘may at times come sweeping like a gentle tide, pervading the mind with a tranquil mood of deepest worship’ (p.12).

Moreover, the *mysterium fascinans* incorporates an element of fascination, wonderfulness, characterised by the ideas of perfect love, mercy, pity, comfort, tranquillity and salvation. The person considers the mystery, ‘wholly other’ as the object of ‘desire and yearning, inspiring a search’ (p.35). Consequently, the *mysterium* is experienced in a positive way. For example, in a crisis situation, such as MI, the individual may go beyond his/her illness in an attempt to reach a higher power. Thus, self-transcendence directs the individual towards the ‘wholly other’, God/Ultimate Other, resulting in a feeling of personal completeness, hope and optimism in life.

Figure 1.2. draws the two cognitive theories together. Lazarus and Folkman (1984) states that in primary appraisal, the individual evaluates the significance of the distress. Thus the event may be considered as threatening, which yields negative emotions, like anxiety and depression or challenging to his/her well being, stimulating positive emotions. Although these two are independent, according to Lazarus and Folkman (1984) they may occur simultaneously.

Otto (1950) refers to the two opposing sectors of *mysterium/wholly*. The *mysterium tremendum* yields an experience of awe, fear and nothingness whilst the *mysterium fascinans*, may stimulate inspirations, tranquillity and salvation. Otto (1950) claims that this ‘strange harmony of contrasts’ of the *numinous* experience will result in a positive change of perception and behaviour with a positive outlook to life. Thus, the notion of wholeness may refer to the spiritual dimension of the individual.

Figure 1.2. An outline of the concordance between the process of coping with a stressful encounter (MI) as proposed by the Cognitive Theory of Stress and Coping (Lazarus and Folkman 1984) and the *Numinous* Experience (Otto 1950)



The outside loop and arrows mean the Feedback process and system of reappraisal of the current situation

4. The Spiritual dimension of a person

In preparation for the analysis of the research based studies on SWB and SCS in patients with MI, the spiritual dimension of a person is presented from the nursing, psychosocial, philosophical and theological perspectives. This will enable a broader definition of the concept, because as the sociologist Moberg (1979) states:

‘no discipline can be completely holistic, covering every aspect of the complex realities of human life. We need others, and they need us’
(p.306).

Therefore, the various perspectives will provide a holistic view of the individual’s spiritual dimension. Literature proposes various definitions of spirituality. The term spirituality was frequently used synonymously with religiosity, creating confusion and ambiguity. For example Piles (1986) defines spirituality as the ‘part of man which seeks to worship someone or something (God) outside his/her own powers’ (p.53). Hence, spirituality is associated with worshipping God. However, *spirituality* is defined as the dynamic creative force that keeps a person growing and changing. It integrates the bio-psychosocial dimensions (Goldberg 1997, Dyson et al. 1997, Piles 1990, Carson 1989, Frankl 1966).

In contrast, O’Neill and Kenny (1998) define *religion* as the spiritual experience which is part of an organised system of beliefs, practices and knowledge. Therefore, the reason for ambiguity between these two terms is that spirituality is a complex phenomenon, and so it is difficult to simplify (Ross 1994, Moya and Brykczynska 1992, Narayansamy 1991). Moreover, Renetzky (1979) argues that the word spiritual ‘has different meanings for different people’ (p.215) as it is based on individual’s background, upbringing, social and culture contexts (Cawley 1997, Miller 1995, Mansen 1993). Therefore, the definition of

spirituality is backed up by the philosophical, theological, psychosocial and nursing perspectives.

4.1. Nursing and Psychosocial perspectives of the spiritual dimension of a person.

The Concise Oxford English Dictionary (1990) describes its origin from the Latin noun *spiritus* meaning breath, air and its verb *spirare*, to breathe. *Spirit* is defined as intelligent, soul, the immaterial part of a person, courage, vivacity, energy. Hence, spirituality consists of the spirit (soul), the physical (breath, air) and the psychological (mind). Similarly, the Oxford dictionary of World Religions (1997) defines the Greek *pneuma* as spirit whilst *pneumatum* means air, breath and spirit. This is supported by the Semitic languages of Hebrew and Maltese (Table 1.2.)

Table 1.2. The meaning of the term spirituality in different languages

The term <i>spirituality</i> originating from the Latin word <i>spiritus</i>			
Language	Versions of <i>spirit</i>	Related words	Meaning
Greek	pneuma	peumatum	Air, breath, spirit
Hebrew	ruah	nefesh	Spirit, soul
Maltese	ruh	nifs	breath

Table 1.2. shows that since both Hebrew and Maltese are Semitic languages both describe the word *spirit* as a soul and spirit.

Moreover, Golberg (1998), deriving the meaning of spirit from the Greek culture, states that:

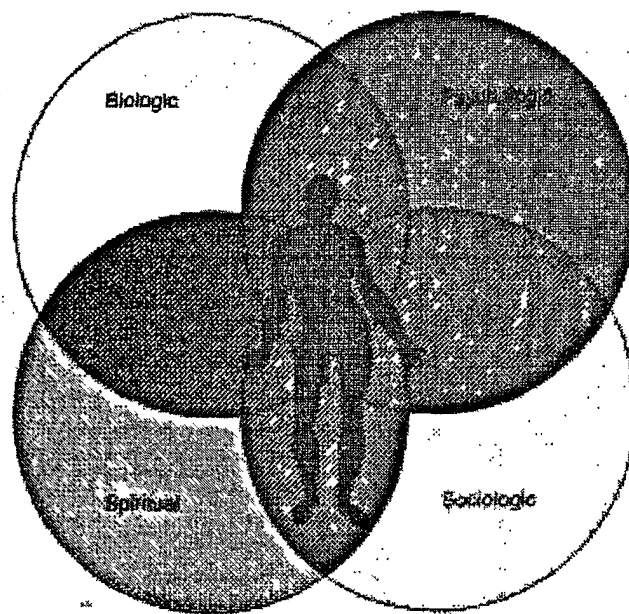
‘the spirit is understood to be within the body, providing the life force, acting through it and motivating action’(p.837).

Additionally, Renetzky (1979) contends that the power within a person motivates the individual to find meaning, purpose and fulfilment in life, suffering and death and fosters

hope to his/her will to live. Thus the spirit is seen as the life force which motivates (Golberg 1998, Boyd 1998a, Renetzky 1979) and empowers the individual (Rich 1996, Dreyer 1996, Orley 1994).

Dossey et al. (1995) propose a holistic view of a person consisting of the biological, psychological, social and spiritual elements which interact together to form an inseparable whole (Figure 1.3)

Figure 1.3. A Holistic view of a person with the four elements interacting together.

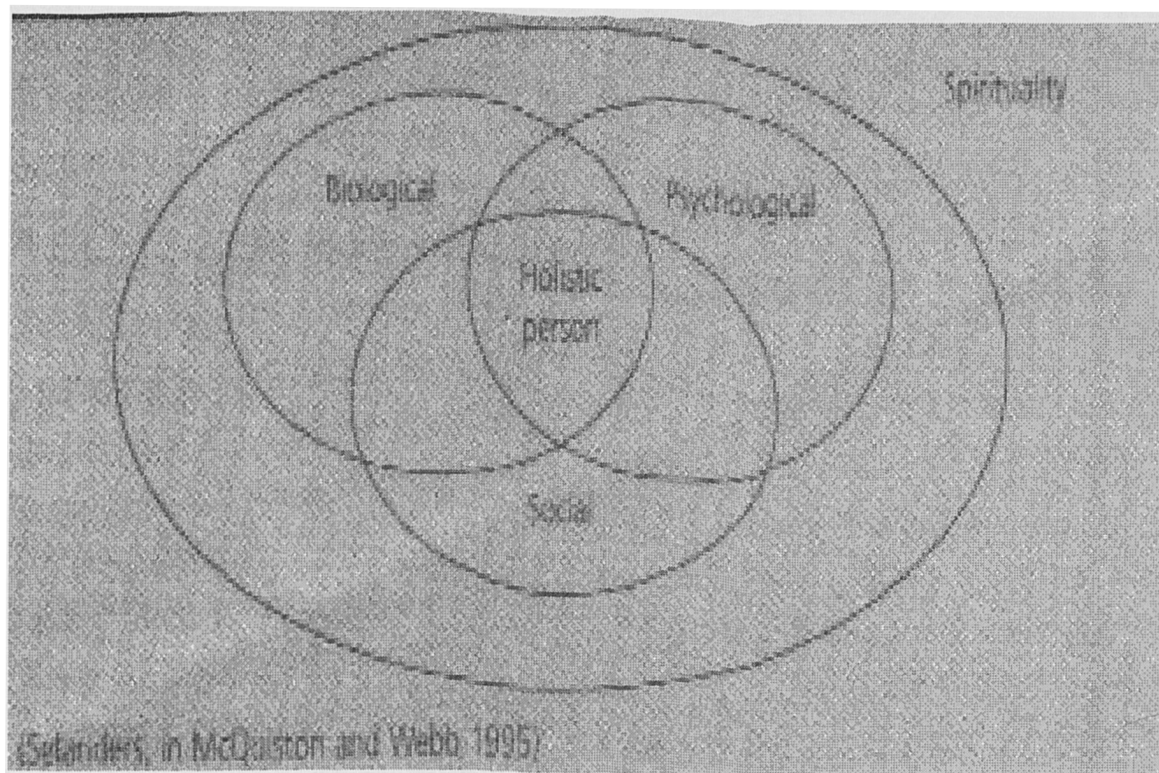


Source: Reprinted from Holistic Nursing. 2nd Edition. by L.K. Dossey, C.E. Guzzetta, L.G. Kolkmeier L.G. (1995 p.19) The Bio-Psycho-Social-Spiritual Model (fig 1-1) with permission from Aspen Publishers, Inc., Maryland. U.S.A., 17th December 2001 (Appendix J.1. p.561)

However, it is argued that, since air and breath are the essence of life, spirituality is the vital life principle of a person that unifies all aspects of the human being, making him/her an indivisible whole (Reed 1992, Burkhardt 1989, Stuart et al. 1989). Some theorists reviewed their nursing theories and included the spiritual dimension in an attempt to present a holistic view of the spiritual person. For example, Nightingale (1860) emphasises the

interaction of the individual between the bio-psychosocial elements and the environment as seen in Figure 1.4.

Figure 1.4. Nightingale's holistic view of the spiritual person who is in constant interaction with the environment.



Source: Reprinted from Are Nursing Theories Holistic? By Hancock B. (2000 p.40) Figure 2. Nightingale's conception of holism. Nursing Standard, January 12, 14 (17) 37-41 (Appendix J.3. p.564)

Figure 1.4. demonstrates the person-environment interaction which is considered by Nightingale (1860) as the spiritual dimension of a person. This dimension is oriented towards the religious element (Widerquist 1992), which may influence the whole person (Hancock 2000).

Additionally, the religious aspect is also integrated within the nursing theory of Henderson (1969) identifying the need of the person to worship according to his/her faith and to

practise his/her religion.. Henderson (1969) considers the mind and body, influencing each other and integrated within the person. Furthermore, Roper et al. (2000) view the individual as composed of the bio-psychosocial and cultural elements, incorporating religiosity, as part of culture and as an influencing factor on the activities of daily living. On reviewing the theory, where the spiritual self was introduced, Roper et al. (2000) explain that:

‘the characteristics of the spiritual self.... in combination with those of the emotional and physical self, respond to situations as a totality’ (p.65).

Furthermore, Neuman (1995) reviewed her nursing system’s theory and incorporated the spiritual variable, stating that:

‘it is integrated among the physiological, psychological, sociocultural and developmental variables of the client’ (p.79).

Neuman (1995) views the individual’s spirit as the source of energy to the person, on a developmental continuum which may influence his/her recovery from illness.

Newman (1986) model of health considers the person as:

‘consciousness, defined as the capacity of the system to interact with the environment’ (p.33).

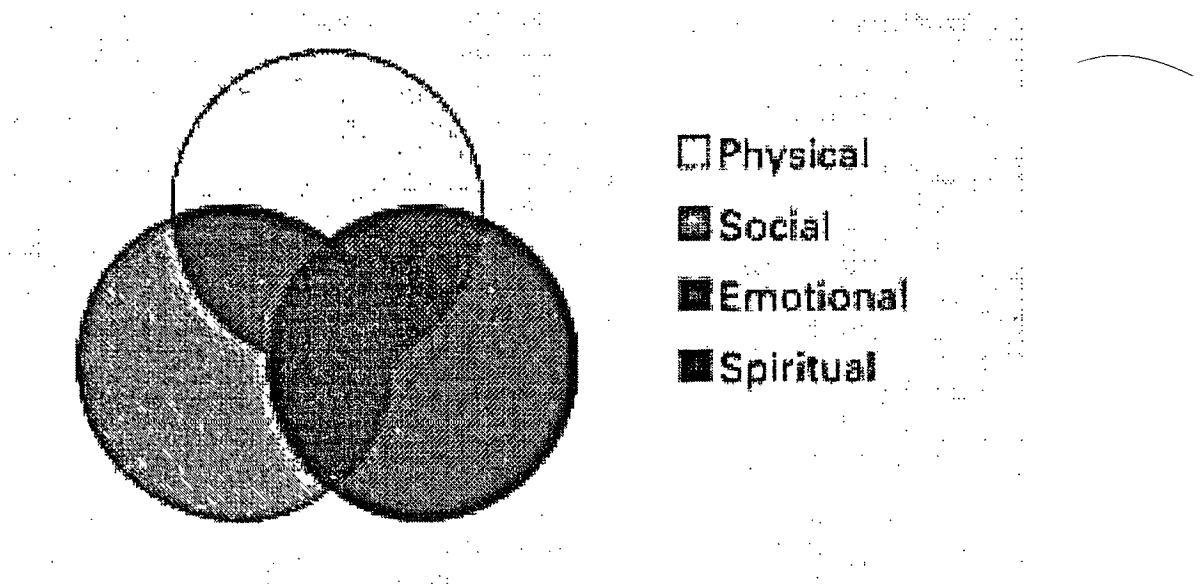
The wholeness of a person is addressed by stating that ‘the parts cannot stand alone as separate’ (Newman 1986 p.15), but they are continually in a harmonious relationship with the environment, transforming it into a changing whole. Therefore, the spiritual component is addressed in terms of self-growth and development by means of self-transcendence and harmonious relationships.

Rogers (1970) theory of nursing pictures an individual as a unified whole, possessing his/her own integrity and manifesting characteristics that are ‘more than and different from the sum of his/her parts’ (p.47). Furthermore, the person is continuously engaged in mutual process with the environmental field of energy. The person and the environment are both

energy fields interacting creatively with each other. Hence, the spiritual dimension is considered to be the dynamic human field of energy and the person's wholeness. Therefore, wholeness refers to the spiritual dimension of an individual.

Finally, Watson (1999) views the human spirit/soul as energy force in human existence which drives the person for self-transcendence to achieve healing, wholeness and inner harmony throughout the spiritual journey of life. Additionally, self transcendence is promoted by his/her transpersonal relationships with self, others, nature and the world. Watson (1999) claims that when a person's energy and influence 'radiate outward, soul to soul' (p.150) towards the positive aspects in life, the person may become an instrument of constructive change. Consequently, these nursing theories suggest that the human spirit is the core or essential part of the person as illustrated by Stoter 1995 (Figure 1.5.)

Figure 1.5. Spirituality as the core of the holistic person.



Source: Reprinted from *Spiritual Aspect of Health Care*. By D. Stoter (1995 p. 3) 'The nature of the Spiritual Dimension' with permission from Harcourt Health Sciences, Edinburgh, Scotland, 14th January 2002. (Appendix J.2. p.563)

Stoter (1995) and Orley (1994) contend that when a person is in tune with this vital, unifying force of the spiritual dimension, a more balanced state of physical, mental and social well being may result as it helps the person to strive for meaning and purpose in life (Brooke 1987, O'Brien 1982, Dickinson 1975). This is reinforced by psychologists such as Elkins et al. (1988), Maslow (1999) and Rogers (1998) stating that individuals are continuously developing and searching for meaning in life. Additionally, the psychotherapist Frankl (1966, 1973), following his bitter experience in a Nazi concentration camp as a prisoner during the World War II, proposes that the essence of existence consists of relationships with others and finding meaning in life through self-transcendence.

Furthermore, Reed (1992), Stoll (1989), and Hungelmann et al. (1985) identify the component of relationships between the person and self, others, nature and Ultimate Other/God. Murray and Zentner (1989) argue that spirituality goes beyond religious affiliation as it strives for inspirations, meaning and purpose, even in those who do not believe in any god. This is supported by Ellis (1980), a psychotherapist who emphasises the 'humanistic-atheistic values' proposing that meaning and purpose in life are derived from reason and intellect, and thus excluding faith in and relationship with God.

In contrast, the humanist psychologists, Bergin (1980) and Maslow (1974)) contend that similar to the bio-psychosocial needs, an individual needs a framework of values, which may include his/her religious values to guide his/her life. According to Maslow (1974), a religious experience 'may be embedded either in a theistic, supernatural context or in a non theistic context' (p.28). Therefore, spirituality applies to both the believers and non-

believers, including the presence of diverse religious beliefs (Baldacchino and Draper 2001, Cawley 1997, McSherry 1996, Burnard 1988b).

Moreover, in an attempt to develop a theory of spirituality by phenomenological research, Elkins et al. (1988), from the humanistic school of psychology, followed by Woods Smith (1994) in nursing, identified nine major components of spirituality, namely meaningful life including a mission, transcendence, meaning and purpose in life, sacredness of life, life satisfaction in spiritual rather than in material things, altruism abiding by a sense of social justice, idealism having high ideals with a commitment to fulfil his/her positive potential in life, awareness of suffering and valuing life and benefits of spirituality accomplished in relationships with self, others, nature and Ultimate other. Hence, in an attempt to understand further the spiritual dimension of a person, the philosophical and theological perspectives follow.

4.2. Philosophical perspective of the spiritual dimension of a person.

Maritain (1994) uses Pythagoras 'love of wisdom' to define the term philosophy as 'human wisdom' (xiii). Solomon (1998) defines philosophy as a search for and reflection on truth, principles and beliefs, with the ultimate aim of analysis and synthesis in order to form a single, unified vision. Pope John Paul II (1999) in his encyclical *Fides et Ratio* (Faith and Reason), states that universally, through history, people always asked the same fundamental questions, Who am I? Where have I come from? Where am I going? These questions imply the quest for meaning which the person tries to find by reason and/or faith.

Therefore, Maritain (1994) argues that although reason distinguishes a person from animals, reason demonstrates man's superiority only when the person uses reason critically

and not just be a passive recipient. The importance of a critical mind is demonstrated by Jasper's philosophy, stating:

‘there is no objective certainty and no confirmation.....as people become companions-in thought through the millennia’ (Kauffman 1972:136).

Therefore, in an attempt to understand the complex spiritual dimension of a person, an outline from various philosophers is included. Aristotle (384-322 B.C.) considered the human being as composed of an integrated body and soul which:

‘enlivened and mediated human functions, and connected human health and community life to the heavens’ (p.136).

Aristotle viewed a person to be of one mind with him/herself, desiring the same things in his/her whole soul (Solomon 1998). Also, Aristotle proposed that the forms of things are in the things themselves and have no separate existence. Therefore, Aristotle's notion of unity between body and soul is expressed by happiness which is ‘the virtuous activity of the soul’ (Thomson et al. 1976 p.75).

In the pre-modern time, Aristotle's view of the reality of existence was different from that of Plato's (428-347 B.C.). According to Solomon (1998), Plato viewed reality as ‘something other than our everyday world’ (p.121). Thus, Plato perceived another nonmaterial and eternal world, different from the material world of every day life. Therefore, a person was merely a shadow of the unearthly. Conversely, Aristotle considered the ultimate reality as being the ‘substances of our daily life’ (p.121), presenting a living, growing, self-conscious universe. This concept was undertaken further by the philosopher Saint Thomas Aquinas (1225-1274) who considered man's knowledge of God through reason and understanding.

Furthermore, Hollis (1992) and Cottingham (1996) point out that a turning point occurred in the Medieval time, by the philosopher Descartes (1596-1650). This is because Descartes (1980) viewed the person as consisting of a dual structure separate from the soul. It was argued that the integration of body, mind and soul was actualised when the material was considered separate from the spiritual, stating that there is a sharp distinction between the inner self and physical body (Descartes 1980). Therefore, Descartes(1980) considered the person as containing more than one substance, a dual composite of the mind and body and three types of substances, that is physical body, mind and God. Thus, Descartes (1980) split the capacity of interaction of the person with God stating that an individual has no need of God.

Therefore, the notion of a whole self is threatened as it is argued, that if the mind, body and soul are separate, then interaction between them is impossible. This is because 'no self exists apart from the whole' (Noda 2000 p.287). In compensation, Reed (1998) points out that the New Age movement emerged during the 1970's in an attempt to unite the body and spirit by highlighting the internal energy within the human being. Furthermore, Watson (1999) orientates wholeness towards the postmodern transpersonal view, whereby:

'we are moving closer to the spiritual, non-physical, inner, extrasensory realm to learn of the dynamic and creative energy currents of the soul's existence; to learn of the inner healing journey toward wholeness'(p.150).

Consequently, the notion of wholeness plays an important role in coping with illness as the person may transcend his/her suffering to find meaning and purpose in life. Dewey (1934) refers to this wholeness as:

'a closure of a circuit of energy..... an aesthetic experience..... an integral experience which moves towards a close, an ending, since it ceases only when the energies active in it have done their proper work' (p.41).

This experience of wholeness gives a sense of well being and order in the person's internal and external environment (Boyd 1998b, Steeves and Kahn 1987). Additionally, drawing on Heidegger's hermeneutical philosophy, Gadamer (1976) states that a person is constantly interacting with the environment, past and present. Therefore, to understand the individual's experience holistically, one is to consider his/her past experiences which give meaning to the respective experience, stating that the horizons of the present are not formed at all without the past' (p. xxviii). Hence, the spiritual being is to be considered as a whole rather than seeing the body, mind, soul and interactions separate from each other, as suggested by the Judeo-Christian Theology.

4.3. Theological perspective of the spiritual dimension of a person

This study was conducted in Malta whereby 95% of the Maltese population were recorded as Roman Catholics (Gouder 2000). Therefore, to be in tune with the Maltese patients' belief system, this subsection utilises the Judeo-Christian /Catholic theology to give light on the spiritual dimension of a person.

Theology is defined as the science or knowledge of God which is obtained by the powers of reason enlightened by faith (Maritain 1994). This view was taken up by the philosopher Saint Augustine (354-430 B.C.), saying that knowledge is unearthly and so knowledge of God is not discernible by man but given to man. Thus, Saint Augustine believed that man's knowledge of God is built on faith, seeking understanding (Portelli 1989). This is supported by Harris (1993) arguing that 'proof would rest upon belief, not belief on proof' (p.1).

On analysing the spiritual dimension of a person from the orthodox Christian point of view, Bradshaw (1994) contends that a person is a unique individual and his/her:

‘nature is a unity and not a dualistic composition of physical body and spiritual soul, but an entity in which both find expression in the whole’
(p.3).

This is supported by Watson et al. (1995) and Pope Paul VI (1967) in *Gaudium et Spes* (The Church in the modern world), stating that although man is being created in God’s Image as a body and soul, the physical body and the spiritual soul find expression in the whole.

According to Eichrodt (1967), the Old Testament provides a sequence of revelations to expose the person in the image of God and to display God in the mission of Christ among humanity. Thus, the Judeo-Christian theology claims that God, the omnipotent creator of the universe, created the individual:

‘in the image of himself.....male and female he created them’
(Genesis 1:27).
‘The Lord God formed man from the dust of the ground, and breathed into his nostrils the breath of life, and man became a living being’
(Genesis 2:7).

Therefore, the description of the *spirit* as the breath of life denotes the life force within a person as a unifying whole and not as two separate entities.

Moreover, the Jewish theologian Buber (1960) proposes that humans are made in the image of God with a personal I-Thou relationship. I-Thou expresses the essence of relationship which is characterised by reciprocity, presence, intensity beyond words of expression. For Buber (1947), spirituality does not exist within a person but in the relationship between individuals. Additionally, in order to keep this personal intimate relationship, Pope John

Paul II (1993) in *Veritatis Splendor* (The Splendour of Truth), teaches about the importance of abiding by moral values, that is perform good deeds and avoid evil. However, Pope Paul VI (1967) in *Gaudium et Spes* (The Church in the modern world) had pointed out that the individual's way of life is grounded on personal freedom. Therefore, Bradshaw (1994) asserts that:

‘man’s turning away from God involves the violation and rejection of God’s law, the value-system which reflects the character of God himself’ (p.6).

Consequently, following the human failure by the fall of Adam and Eve, whereby the image of God was disfigured (Bradshaw 1994), God presented his plan of forgiveness through Jesus Christ. Consequently, God’s relationship with humanity was reestablished and the image of God was restored. The Catholic Church Catechism (1995) points out that the person is assisted by the sacrament of reconciliation, whereby the priest forgives the sinner in the name of God, in order to maintain the Imago Dei (8:1466). Therefore, Pope John Paul II (1989) in *Christifidelis Laicis* (The mission of lay people in church and the world), points out that God alone can give happiness of divine life to humanity through the person of Christ. However, the Jewish Theologian Buber (1960) bypasses the person of Christ, proposing that a mutual personal intimate I-Thou relationship between God and the individual, based on God’s love, fosters salvation and preservation of the image of God. Therefore, the Judeo Christian theology views the wholeness of a person with the personal relationship with God.

This is substantiated by Saint Augustine’s confessions, professing that this intimate relationship with God fulfils the individual, which may lead to finding meaning and purpose in life, declaring that the person is restless, until he/she finds rest in God, the

eternal truth and infinite love (Portelli 1989). This communion with God is referred to by St.

John of the Cross as the *Cloud of the Unknowing*, claiming that:

‘God is to be attained in this life, (in the highest way that he may be attained) not by knowledge but by the grace of the soul’ (McCann 1964 p. x).

Therefore, James (1960) contends that the spiritual dimension in the individual, no matter what religion one professes, may lead the person to a religious experience, based on knowledge, attitude and behaviour, according to the respective belief system of the respective religion. This implies that the personal relationship with God may fulfil the individual and not merely the knowledge of God. This is substantiated by the psychiatrist/psychoanalyst Jung (1933), stating that through his personal experience of God, he succeeded in experiencing individuation, that is achieving wholeness by the conscious realisation and expression of the self.

Moreover, while referring to the proposal of Jung (1933), Belford Ulanov (1999) proposes that:

‘we find our sense of self in the mutual recognition of soul and creator God’ (p.234).

Unlike Freud, who viewed religion as a source of pathology (Wulff 1997), Jung (1963) considers religion and relationship with God as an essential dimension of the process of life to become a whole person. This is supported by Sheldrake (1998) and Hudson (1988) who contend that the total parts of an individual are to be amalgamated into a whole integrative person. Additionally, Storr (1983) refers to Jung’s Oriental mandala, a wheel which converges towards the centre which means:

‘the totality of the individual in his/her inner or outer experience of the world, or its essential point of reference (p.237).

Consequently, Pope Paul VI (1966) in *Lumen Gentium* (The Light of the World) contends that a personal intimate relationship with God is necessary in order to fulfil his/her goal in life, that of wholeness, of integrated humans. Lack of integration of God in his/her life may lead to emptiness in his/her life as described by Saint John of the Cross as 'a dark night of the soul' (Kavanaugh and Rodriguez 1979, Zimmerman1973).

Furthermore, Yalom (1980) points out that the essence of the spiritual person is a search for existential meaning within an individual's life experience by transcending to a higher power/Ultimate other. This is supported by (Frankl 1973,1966,1962), who through his ordeal in the concentration camp, managed to find meaning and purpose in such a miserable and stressful situation. For the believers, this external power to endure suffering is equated with God, defined according to the respective religion (Koenig 1997).

Conversely, the atheists exclude the notion of an external power, as they consider this power lying within their own internal energy (Harris 1993). Thus, Speck (1998) argues that for the non-believers, meaning in life is searched through a philosophical pathway, interpreting life events such as illness, as a product of their own personality and influence.

4.4. Summary of the spiritual dimension of a person

Literature identified the following characteristics which are displayed in alphabetical order.

- ***Becoming***: beliefs and values, connectedness, life force, positiveness, meaning, purpose and fulfilment, transcendence and wholeness. Spirituality enables the person *to become* by experiencing self growth through life events, mission in life (Burkhardt 1994, Bradshaw 1994, Elkins et al. 1988, Woods Smith 1994, Yalom 1980).

- ***Beliefs and values:*** which include the religious and non-religious components. Literature suggests that when life is directed towards the values of love, truth, trust, forgiveness, creativity, one may guide the individual to attain and maintain peace in life (Long 1997, Widerquist and Davidhizar 1994, Hussein 1994, Clark et al.1991, Belcher et al.1989, Stoll 1989). Additionally, in times of illness, the value of suffering and life may help in enduring the consequences of illness (Woods Smith 1994, Elkins et al. 1988, Frankl 1966, Koenig 1997).
- ***Connectedness:*** through a relationship with self, others, higher power/God and the environment may lead to a harmonious life even in times of distress (Martsolf and Mickley 1998, Stevens Barnum 1994, Reed 1992, Haase et al.1992, Nagai-Jacobson and Burkhardt 1989, Belcher et al.1989, Hungelmann et al.1985).
- ***Life force:*** the spiritual dimension is the dynamic, unifying, integrative and creative life force instilling hope, inspirations and motivation towards change (Walton 1999, Golberg 1998, McSherry 1997, Dreyer 1996, Rich 1996, Goddard 1995, Orley 1994, Stuart et al.1989).
- ***Positiveness in life :*** viewing life situations more openly and with optimism (Bradshaw 1996, Woods Smith 1994, Belcher et al. 1989, Thomas 1989, Elkins et al. 1988).
- ***Meaning, purpose and fulfilment*** in existence (Walton 1999, Ross 1995, Woods Smith 1994, Reed 1992, Clark et al.1991, Nagai-Jacobson and Burkhardt 1989, Burnard 1988a, Elkins et al. 1988, Frankl 1962).
- ***Self transcendence:*** the person goes beyond the self in search of some higher power/God (Woods Smith 1994, Reed 1992, Thomas 1989, Elkins et al. 1988, Jung 1963).
- ***Wholeness:*** the spiritual dimension unifies all aspects of the human being, namely the bio-psychosocial components, making a holistic person (Noda 2000, Neuman 1995, Stoter 1995, Woods Smith 1994, Burkhardt 1989, Elkins et al.1988, John Paul VI 1967, Henderson 1967, Dewey 1934, Jung 1933).

In the light of this literature, the spiritual dimension constructs the person as a whole, integrating the bio-psychosocial components. However, spirituality may or may not contain religiosity. This implies that whilst both the believers and non-believers encompass the bio-psychosocial elements, the believers incorporate the religious component according to their respective religion, as an additional mechanism by which one can achieve spiritual well being.

5. Spiritual well being

This section attempts to define the complex term of SWB and discusses the findings of various research studies. Research on SWB in MI is very scarce. Since, MI is a chronic disease and a life threatening illness (Urden et al. 2002, Swanton 1998, Rose et al.1994), the following studies on terminal illness and chronic diseases were applied to patients with MI. The term SWB was frequently used synonymously with spirituality. Thus a definition of SWB may clarify the concept of SWB.

5.1 Definition of spiritual well being

Research suggests that SWB is the behavioural expression of the state of spiritual health demonstrated by his/her ability to search and find meaning and purpose in present life's situations and in the future (Walton 1999, Landis1996, Stoll 1989, Ellison 1983). The sociologist Moberg (1979) defines SWB as:

‘the affirmation of life in a relationship with God, self, community and environment that nurtures and celebrates wholeness’(p.5).

This theistic definition reveals three types of relationships to achieve wholeness in life, that is self-transcendence to God, inward relationship with self and interrelationship with others

and nature. Moberg (1979) explains that affirmation of life refers to a process of accepting both the positive and negative situations in life through love of his/her own life, the life of others and the community.

Following a study on a sample of 761 Americans and 320 Swedish respondents, Moberg (1979) attempted to operationalise the term SWB. Moberg (1979) proposes that since wholeness in life is difficult to be achieved, the process of self growth needs to be nurtured through a relationship with God. This relationship may result in strengthening the self growth process towards self fulfilment by finding meaning and purpose in life. It is noted that, being the first definition of SWB, the notion of a relationship with God makes this SWB definition based solely on religion.

According to Wulff (1997) the word *religion* is derived from the Latin word *religio*, return to law. Grosvenor (1999) defines religion as:

‘a collection of beliefs, practices and buildings, through and in which people try to make sense of their lives, suffering and death’ (p.36).

Furthermore, Piles (1980) defines religion as:

‘a group of people with established and organised practices related to the spiritual dimension of man’ (p.53).

Both definitions are oriented towards organised religious practices with the ultimate aim of finding meaning and purpose in life. Hence, Moberg’s definition of SWB is applicable exclusively to the believers. However, according to Burnard (1988b), the atheists and agnostics also have the potential for affirmation of life through relationships with self, others and nature.

Furthermore, Reed (1992) argues that the individual's wholeness was artificially partitioned by separating the holistic view of the physical, psychosocial characteristics of the human being. Thus, Reed (1992) proposes a definition of spirituality which is used interchangeably with SWB as:

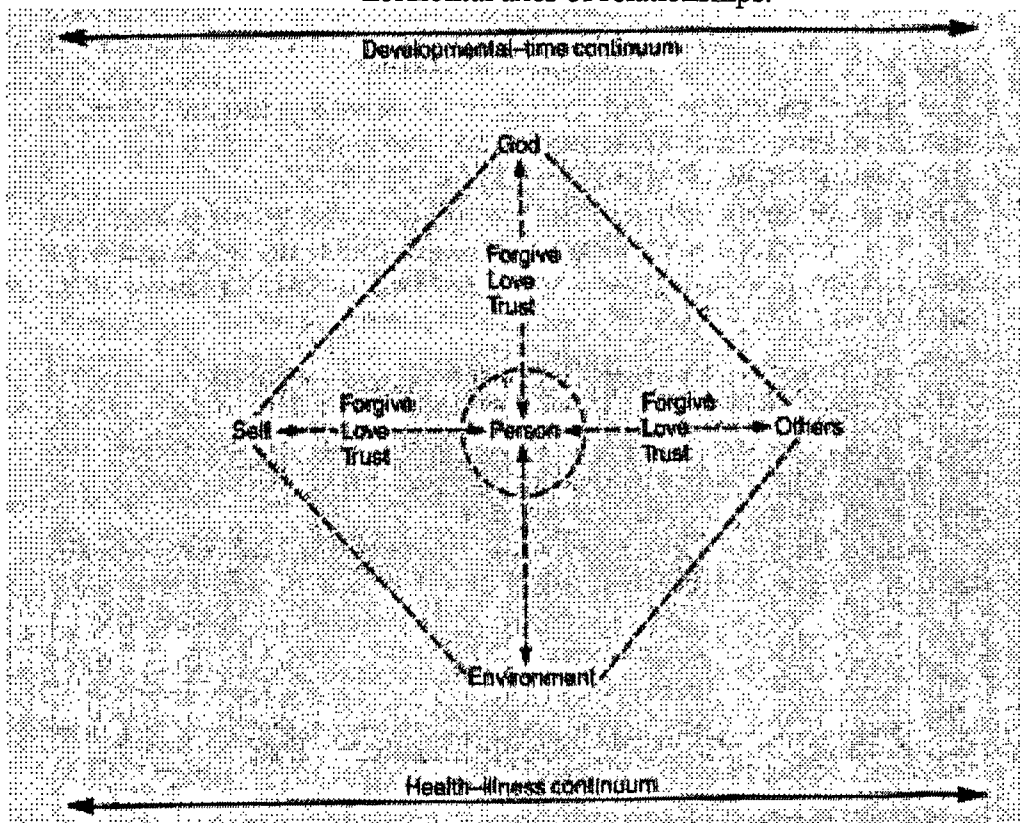
‘a connectedness intrapersonally, interpersonally and transpersonally which transcend these divisions’(p.352).

This relationship may be experienced intrapersonally, as a connectedness within oneself, interpersonally in the content of others and the natural environment, and transpersonally, referring to a sense of relatedness to the unseen, God, or power greater than the self and ordinary resources. This is supported by Haase et al.(1992) proposing that connectedness is viewed as:

‘richer than social support.....as it is a significant, shared and meaningful personal relationship with another person, a spiritual being, nature or perhaps an aspect of his/her inner self’ (p.146).

Furthermore, this inter-relatedness is supported by Stoll (1989) and Ellison and Paloutzian (1982) whereby spirituality, a sense of well being, refers to a set of a vertical and a horizontal axes as depicted in Figure 1.6.

Figure 1.6. Stoll (1989) definition of spirituality: a set of a vertical and a horizontal axes of relationships.



Source: Reprinted from *Spiritual Dimensions of Nursing Practice* by V.B. Carson (1989) Figure 1-1 p.8 with permission from W.B. Saunders Company, Philadelphia, U.S.A. (Appendix J.4. p.565)

The horizontal dimension refers to the bio-psychosocial relatedness with self and others through personal beliefs and values, such as love, trust and forgiveness. Additionally, the vertical dimension indicates the person's connectedness through transcendence with God and environment. Thus, Ellison and Paloutzian (1983) affirm, following retesting of the new SWB tool that:

'those with a more internalised and intimate relationship with God would not only have higher religious well being but higher over-all SWB as well' (p.336).

However Goddard (1995), Haase et al. (1992) and Reed (1991) argue that if these two axes function distinctly from each other, the wholeness of the individual will be threatened.

Consequently, McSherry (2000) proposes that:

‘spiritual well being will be determined by both vertical and horizontal dimensions functioning harmoniously and dynamically together, fostering a positive and meaningful attitude and disposition towards life’ (p.42).

Furthermore, this harmonious connectedness is echoed by Hungelmann et al. (1985) who, following a grounded theory approach, defined SWB as a:

‘sense of harmonious interconnectedness between self, others / nature, and Ultimate Other which exists throughout and beyond time and space. It is achieved through a dynamic and integrative growth process which leads to a realisation of the ultimate purpose and meaning of life’ (p.152).

Hungelmann et al. (1985) explain that while the atheists did not believe in a Supreme Being, the believers’ connection consisted of a relationship with God by their love and trust in Him, achieved through prayer and worship. In addition, it was found that inner harmony was achieved by their sense of satisfaction with self and acceptance of their limited life situations together with a positive attitude and self-determination to maintain inner peace even during their terminal illness. Furthermore, the outcome of achieving SWB is finding meaning and purpose in life, self-transcendence and guiding values for problem solving, even in times of illness. Hood Morris (1996) postulates that pivotal events such as illness, may encourage and enable the individual to increase his/her SWB. Therefore, SWB may be a resource of coping as suggested by the following research studies.

5.2 Research on spiritual well being in illness and relationship with SCS and personal characteristics.

Research on SWB in MI is very scarce. Thus, this section analyses research on SWB in patients with cancer, terminal illness and chronic medical illness. Since MI is a life threatening and a chronic disease (Urden et al. 2002, Rose et al.1994), these studies may be applied to patients with MI. According to Lazarus and Folkman (1984), the sudden onset

of MI faces the individual with a sudden onset of a stressful event. Through cognitive appraisal, the patient evaluates the significance of MI to his/her well being and may consider it as stressful, life threatening, which is beyond his/her coping resources. However, the patient may use several coping mechanisms to manage stress (Lazarus and Folkman 1984). SWB is considered as an internal resource of coping (Thomson 2000, Riley 1998) which may help the patients to cope with the stress of illness. To illustrate the possible relationship between SWB and SCS, both cognitive theories of Lazarus and Folkman (1984) and Otto (1950) are included.

Walton (1999) investigated spirituality in the recovery of MI in the USA by grounded theory approach. A sample of 13 patients with MI, aged between 41-76 years, were interviewed. It was found that patients considered spirituality as their life-giving force which was nurtured by the presence of the divine by their relationship with God, family, friends, health care providers and creation, such as plants and animals. MI helped the patients in developing their faith and discovering meaning and purpose in life. The patients considered spirituality helpful in their recovery as it provided them with inner strength, comfort, peace, wellness, wholeness and enhanced coping. This supports the theory of Otto (1950) who refers to the process of the *numinous* experience which forms a 'strange harmony of contrasts'. When faced by MI, the patient experiences a feeling of awe and fear in the 'mysterium tremendum' oriented towards nothingness and insufficiency to cope. This may be accompanied by the 'mysterium fascinans', a feeling of inner strength following self transcendence to God, which may yield spiritual well being.

Rutledge and Rayman (2001) explored the long term effect of a rehabilitation retreat on a sample of 41 women, mean age of 48 years, diagnosed with breast cancer two years

earlier. Ferrell's Quality of Life-Breast Cancer scale measured the bio-psychosocial and SWB domains. Data collection was done four times, pre-retreat, immediately afterwards, and after 7 weeks and 14 weeks post retreat. At pre-retreat, although women were troubled by their uncertainty of the future, they were positive about the importance of their spiritual activities and change in health, life purpose and hopefulness. It was found that post retreat, a significant improvement in SWB was found during the three time periods.

This improvement in SWB is supported by Ferrell et al. (1996, 1997) who investigated the impact of breast cancer on SWB on a sample of 21 women with an experience of a year past their initial diagnosis or three months after their completion of treatment.

Seven items of Ferrell's Quality of Life Breast Cancer Version addressed SWB, supported by a semi structured interview guide. The impact consisted of uncertainty, signs of hope, altered priorities, altered life meaning and transcendence/life after death. Additionally, women were found trying to balance reality with hope and transcendence. It was found that fear of death was high. This may be due to high coverage of breast cancer awareness by the media. Moreover, the interview session was considered as an opportunity to express their fears and emotions in an attempt to search for meaning in their life-threatening illness. Finally, the survivors expressed the importance of spiritual support in confronting their illness.

Both studies of Rutledge and Rayman 2001, and Ferrell et al.(1997,1996) demonstrate the positive effects of both problem-focused coping strategies founded on reality. Attendance to the rehabilitation retreat gave the opportunity for direct action (Cohen and Lazarus 1980) adopting vicarious coping, which according to Bandura (1997) and Lazarus and Folkman

(1984) may increase perceived control by their relationship with professional facilitators. It is noted that the longitudinal study of Rutledge and Rayman (2001) managed to monitor the improvement across time. However, Ferrell et al. (1997, 1996) in their cross-sectional design could not monitor such a fluctuation. Also, the sample consisted of 21 patients with either a year past their diagnosis or three months after completion of treatment. Therefore the use of the quantitative and qualitative approaches could identify differences in coping between the two groups. However, since the interview was found helpful to allay their anxieties, it may have contributed to high levels of spiritual well being.

Mickley et al. (1992) investigated the relationships between hope, and the variables of SWB and intrinsic versus extrinsic religiousness in a sample of 175 women with breast cancer, mean age of 58.7 years. 56.65% were Protestants, 32% Catholics and 5.1% declaring no religious affiliation. Allport and Ross (1967) refer to intrinsic religiosity as living according to their religious beliefs whilst extrinsic religious persons are those who use his/her religion as a means of social utility and identification with a social group. SWB was measured by Paloutzian and Ellison's SWB scale.

The findings revealed that women with intrinsic religiousness tended to have higher SWB as well as religious well being (RWB) and existential (EWB) scores than the extrinsically religious group. Relationship with God for the group with intrinsic religiousness was found more important to their SWB. Additionally, hope was positively significantly correlated with intrinsic religiousness and SWB. Women with higher levels of hope also tended to have higher levels of SWB. Thus, this relationship between SWB and hope suggests that SWB may be an internal resource of coping.

Furthermore, EWB was found consistently as a predictor of hope. Therefore, the non-believers who may experience such a level of EWB may help in fostering hope in critical situations. Moreover, medical variables such as severity of illness and prognosis, were not found to be significantly related to SWB, religiousness or hope. This is congruent with research which suggests that patients with ill health does not necessarily mean that they would have low SWB scores (Smith 1995, Carson et al.1990, Koenig et al. 1988, Reed 1986).

Following this study, Mickley and Soeken (1993) conducted a comparative study investigating the relationship between religiousness, hope and SWB in a sample of 50 women with breast cancer, aged 21 years and over, consisting of 25 Hispanic-Americans and 25 Anglo-Americans. Hispanics have a Spanish origin whilst Anglos were not. The three tools used were Feagin's Intrinsic/Extrinsic Scale, Paloutzian and Ellison's SWB Scale and Nowotny Hope Scale.

Findings revealed that Hispanics had a significantly higher intrinsic religiousness than the Anglos. Hispanics considered intrinsic religiousness of importance to their well being, whilst the Anglos' intrinsic religiousness was found to be a stronger predictor of hope and SWB than the extrinsic religiousness. This indicates that intrinsic religiousness fosters hope and enhances SWB, possibly due to their trustful relationship with God, their higher power.

Furthermore, for the Anglos, hope was positively significantly correlated with SWB, RWB and EWB. Thus the higher the hope, the higher the SWB. This suggests that EWB by means of interconnectedness with self, others and nature may contribute towards coping

with illness. Additionally, the positive significant relationship of hope with RWB and EWB, reinforces the statement of Carson (1989) stating:

“Hope can have its orientation towards earthly goals, actions, and relationships or towards eternal goals, actions and a relationship with a divine being”(p.33).

Moreover, both Hispanics and Anglos had different religious affiliation, Hispanics being all Catholics, whilst the Anglos consisted of Protestants (56%), Catholics (24%), other faith (12%) and no religious affiliation (8%). This suggests that SWB seems to be enhanced by living the faith, intrinsic religiousness (Allport and Ross 1967) and not by the type of religion practised. Thus, Brinkerhoff and MacKie (1984) point out that although denomination of patients is important, patients' actual belief systems may contribute towards health. Although, both studies adopted cross-sectional design, both studies allowed comparisons between different religious groups who were Catholics and Christians, with a minority having no religious affiliation. According to Otto (1950), patients in illness may transcend to the Wholly Other/God which may empower them to cope with their current situation and hope for the future. This is supported by Fernsler et al.(1999) who found that Christians reported higher scores of SWB which was negatively related to coping with cancer.

Fernsler et al. (1999) explored the relationship between SWB as an internal resource of coping and the demands of illness on a sample of 121 patients with colorectal cancer, mean age of 51.9 years. The tools used were Paloutzian and Ellison's SWB scale and Haberman's Demands of Illness Inventory.

It was found that the youngest age group and the males scored higher in the demands in illness with lower levels of SWB. Overall the patients had low level of SWB, with the

females scoring higher than the males and the older than the younger. Additionally, Christians reported significantly higher SWB than the non-Christians which may be due to higher scores in RWB. Similarly, high scores of SWB were found in patients who had received treatment two months before their recruitment in the study. Overall, a negative significant correlation was found between SWB and demands in illness, indicating that higher levels of SWB may help in coping with the demands of illness. The findings of Fernsler et al. (1999), using Paloutzian and Ellison's SWB scale, supported the findings of Rultedge and Rayman (2001), Mickley et al. (1992) and Mickley and Soeken (1993) whose samples were females with breast cancer. The three studies consisted of samples with malignancy. However, the large sample of Fernsler et al. (1999) consisted of males and females with malignancy and amputation which is not life threatening. Thus, these findings suggest that SWB may be an internal resource of coping in illness in both females and males.

Riley (1998) conducted a comparative study by classifying SWB into three types, namely, existential, religious and non-spiritual well being. The existential group believed that life was meaningful or had a purpose. The religious group had a meaningful relationship with God, whilst the non spiritual group had no belief system. A sample of 216 patients with various ages and mean education of 13.79 years, were experiencing amputation, post polio, spinal cord injury, breast or prostate cancer. The Paloutzian and Ellison's SWB scale and the Cella's FACT-SWB scale were used.

No significant relationship was found between SWB and personal characteristics of age, marital status, living alone or with others, and employment, except for education. The EWB group had significantly more years of education, mean of 15 years. A positive

significant relationship was found, indicating that the higher the education, the higher the EWB.

Furthermore, the EWB group had the highest level of meaning and purpose in life. The RWB group felt more at peace in life, attributed to having strength from their relationship with God from private prayer. Additionally, the non-SWB group were found to have more conflicts and less certain about their future, resulting in having less meaning, purpose, and fulfilment in life. Moreover, the non-SWB group had maladaptive coping styles such as alcohol drinking. This comparative study with a large sample of patients with various disorders, adopted two scales to measure SWB, which had undergone psychometric testing. Therefore, this within-method triangulation (Cowman 1993) may contribute to convergent validity of results which may support the differences in SWB identified in the three groups.

According to Lazarus and Folkman (1984), when one segregates him/herself from reality, the person does not attempt problem solving, resulting in failing to find meaning and purpose in life, as found in the non-SWB group. Conversely, the other two groups managed to adopt positive coping strategies, such as seeking help from others and/or God which may result in a peaceful state. This positive outcome is substantiated by Kaczorowski (1989) and Fehring et al. (1997), who found that patients' hope and SWB were associated with less anxiety and depression.

Fehring et al. (1997) explored the relationships between SWB, hope and anxiety and depression in a sample of 100 elderly patients with cancer, mean age of 73 years. A sample of 100 elderly patients with a diagnosis of cancer, mean age of 73 years, was recruited. The variables were measured by Paloutzian and Ellison's SWB scale, Miller Hope scale,

McNair's Profile of Mood States and Gorsuch and McPherson's Intrinsic/Extrinsic religiosity scale.

It was found that SWB was significantly, positively related to hope and positive mood states. However, SWB was negatively related to anxiety and depression. Similarly, a consistent negative correlation was found between intrinsic religiosity and depression. Thus, Fehring et al. (1997) contend that SWB may be a resource of coping with chronic illness. According to Allport and Ross (1967) and Otto (1950), transcending to God/Wholly Other, may provide spiritual and emotional security which may contribute to a greater sense of SWB.

Highfield (1992) investigated spiritual health of 40 oncology patients. Spiritually healthy persons were those who met satisfactorily their spiritual needs for self-acceptance, relationships and hope. This was measured by the Patients' Spiritual Health Inventory. A significant difference was found between age and spiritual health, having the older scoring higher than the younger. Furthermore, the patients reported moderately high scores of spiritual health. This may be due to their use of spiritual resources to cope effectively with their malignancy, such as interconnectedness with God, nature, family, friends, clergy, scripture reading and communication with health carers. It was reported that 70% of male patients considered spirituality as a private and personal experience. Therefore, the males might have scored lower in SWB because they might have hesitated to disclose such information. However, since this personal sensitive data were collected by a self-rating questionnaire, disclosure of reality was more likely to occur than a face to face interview.

Moreover, according to Reed (1983), terminal illness may have meant a shorter life span, triggering spiritual development, which may result in increased concentration on religiosity, in an attempt to reach out for a source of strength and energy (Forbes 1994, Boutell and Bozett 1990, Reed 1986, Peterson 1985). This is supported by Otto (1950) who states that an individual may experience contrasting feelings of awe and fear together with 'majestic' feelings of empowerment in an attempt to find meaning and purpose in life, which may yield spiritual growth and less stress as found by Kaczorowski (1989).

Kaczorowski (1989) explored the relationship between anxiety and SWB on a sample of 114 adult patients with cancer, mean age of 60 years. Data collection was by Paloutzian and Ellison's SWB scale and Spielberger's State-Trait Anxiety Inventory. The state-anxiety scale, assessed the current feelings of anxiety whilst the trait-anxiety scale measured how one generally reacts and responds in times of crisis.

The findings revealed a persistent negative significant relationship between SWB and anxiety. When SWB was high, state-trait anxiety was lower. EWB was correlated more negatively with anxiety, that is, the higher the EWB the lesser the anxiety. This suggests that relationship with family, friends and life-satisfaction may contribute towards lowering levels of anxiety. This is supported by Lazarus and Folkman (1984) stating that social support may contribute towards secondary control, by helping the patient to adapt him/herself to the uncontrollable situation, lessening the stress levels. This is parallel with the findings of Carson et al. (1990) who found that relationships with friends and significant others were a source of hope in AIDS.

Furthermore, Kackzorowski (1989) identified differences in age, marital status and gender. A positive relationship was found between age and RWB that is, the older the person, the more religious. Women had slightly higher RWB which may have been skewed by the presence of nuns who scored higher in EWB and RWB. Additionally, the negative relationship between SWB and anxiety was stronger in men than in women and in the unmarried group than their counterpart. It is noted that the sample consisted of more females (n=84) than males (n=30). Additionally, the females had higher scores of anxiety with lower SWB which may have skewed the results.

Carson et al. (1990) examined the impact of AIDS on hope and SWB in a sample of 65 male patients with HIV antibodies, mean age 35.3 years. It was reported that overall, patients had a low score in the Beck Hopelessness Scale indicating a high level of hope/optimism. Only a minority of patients (n=4) demonstrated scores of severe pessimism / hopelessness. It was reported that this may be due to their recent diagnosis of AIDS or previous hospitalisation due to complications of the disease. Furthermore, high levels of SWB was found which may be due to increased relationship with families and friends. Since 51 patients with a religious affiliation scored significantly higher on RWB, it suggests that their personal relationship with God, their source of energy, may have helped them to cope with AIDS.

Additionally, a positive relationship between hope and SWB was revealed, indicating that the higher the scores of SWB, the higher the scores of hope. Carson et al. (1990) point out that high levels of hope of this specific sample may have been due to hopefulness in the medical personnel and treatment in such a prestigious research clinic. This is explained by Lazarus and Folkman (1984) and Cohen and Lazarus (1980) stating that interpretive control

may be achieved by information seeking to understand more their illness and the advances in the treatment of AIDS, yielding increased hope levels. Lazarus and Folkman (1984) state that 'hope can exist only when such beliefs make a positive outcome seem possible, if not probable' (p.159).

Belcher et al. (1989) explored spirituality and well being of 35 male and female patients with AIDS by qualitative method. Findings revealed increased spirituality since the onset of AIDS which may be due to a positive outlook to life. For example, some patients considered AIDS as a challenge, a way to reorder priorities and to appreciate life better. Additionally, other factors were identified contributing to their perceived well being, such as interpersonal connectedness with supportive people, such as family, friends, clergy, spouses and support group, finding peace with self, a relationship with God and faith in the medical team.

Moreover, well being was reported to depend on the patients' level of illness or wellness, as they felt more optimistic in the absence of physical symptoms. On the contrary, a negative meaning to their illness, like considering AIDS as a punishment "a daily smack in the face"(p.23), may yield negative mood states. According to Lazarus and Folkman (1984), appraisal of a stressful event may yield either positive emotions, such as feeling at peace when seeing it as a challenge or negative emotions, such as anxiety and depression when viewing it as a life threat. Thus a positive meaning to a stressful situation may yield higher levels of SWB.

It is noted that both Carson et al. (1990) and Belcher et al. (1989) investigated patients with AIDS with the difference that the first studied only males whilst the second investigated

both males and females. Additionally, Carson et al. (1990) used a quantitative method by the use of self-rating questionnaire, whilst Belcher et al. (1989) interviewed the patients. Although the qualitative method may complement the quantitative, in this highly sensitive and stigmatised disease, it is more likely that a self-rating questionnaire reveals reality better than a face to face interview. Despite these limitations, both studies provide insight into the SWB of patients with life-threatening illness, since they were conducted twelve years ago, when the current advanced treatment was not yet administered.

Landis (1996) investigated SWB as an internal resource of coping against the effects of uncertainty on psychosocial adjustment of patients with Diabetes Mellitus (DM). A sample of 94 community male and female clients with DM, aged 21-65 years, was investigated by Mischel's Uncertainty in Illness Scale (MUIS) and Paloutzian and Ellison's SWB scale. Findings revealed that uncertainty was significantly, inversely related to adaptation. As uncertainty increased, EWB and adjustment decreased.

This is supported by Lazarus and Folkman (1984) who explain that an ambiguous, uncertain outcome may influence negatively coping with illness. Thus, Landis (1996) suggests that strengthening SWB, especially EWB by interconnectedness with family, friends and support groups may enhance adjustment to DM. Additionally, the qualitative data revealed that spiritual support in 18% of clients, such as belief in God, prayer, hope for a cure and purpose in life, was considered beneficial for their adjustment to DM. The adoption of both quantitative and qualitative methods in this study shed light on the factors which may contribute towards coping with DM.

Woods Smith (1995) conducted a comparative study investigating power and spirituality in the USA on a sample of 172 polio survivors and 80 healthy non-polio persons. Both samples consisted of 68% females. Elkins' Spirituality Orientation Inventory measured spirituality. It was found that polio survivors manifested greater spirituality than their counterparts. It was reported that this experience of polio may have helped the survivors to grow spiritually and religiously by working harder, increasing their awareness and insights in life and by appreciating more the love and support of others. In addition, women reported higher spirituality than men. Furthermore, Christians scored higher in spirituality than the non Christians, whilst those who identified themselves as Jewish scored higher than persons with no religion.

The possible relationship between religious affiliation and SWB supports the findings of Mickley et al. (1992) and Mickley and Soeken (1993) who found a positive relationship between intrinsic religiosity and SWB whereby those who were affiliated to Christianity and Judaism scored higher in SWB than the non-believers. According to Otto (1950), this increase in spirituality may be due to their self-transcendence to God "with whom contact was viewed as beneficial (Woods Smith 1995:138) which may render increased levels of SWB. Additionally, this comparative study gave insight into the possible impact of non-life threatening illness on levels of spirituality which supports the findings of Reed (1986, 1987).

Hungelmann et al. (1985) examined SWB by means of a grounded theory approach in a sample of 31 persons, aged between 65-85 years, selected from community and hospital settings. Their health status ranged from good physical health to terminal illness. Data were collected by in-depth interviews and participant observation of clients who were

Christians, non Christians and atheists. Two major themes emerged namely, harmony and connection.

Connection was found by the believers to consist of relationship with God or Ultimate other in terms of love and trust in God, achieved through prayer and worship. This relationship was expressed by both the physically healthy and terminally ill believers, most of whom were found to have religious objects such as the Bible, prayer books and icons, used in their private prayer. Conversely, the atheists denied the presence of a supreme being. Furthermore, inner harmony was demonstrated by their sense of satisfaction with self / life and acceptance of their limited life situations together with their positive attitude and self-determination to maintain inner peace even during their terminal illness.

According to Glaser and Strauss (1967), grounded theory approach is the most rigorous method of providing preliminary or exploratory research in complex concepts, such as SWB. Therefore, the use of in depth interviews, backed up by participant observation, tended to give a broader definition of SWB and spiritual coping. In addition, the inter-rater analysis of data by the four investigators, contributed towards the truthfulness of the themes which emerged. However, the non-random sample limits generalisation of results.

Additionally, the sample consisted of both healthy and terminally older adults, selected from different environments, yielded a broader picture of SWB and coping. Moreover, the religious practices of prayer and worship and the use of religious objects suggest the possible impact of religious coping strategies (RCS) on SWB. Conversely, religious affiliation did not appear to be associated with SWB. Although the believers expressed the need of relationship with God/Ultimate other, only some clients were formally affiliated with a religious group.

5.3. Summary and possible relationships of spiritual well being with SCS and personal characteristics.

Research suggests that SWB is demonstrated by the person's ability to find meaning and purpose in the present and future life situations (Landis 1996, Stoll 1989, Ellison 1983). Stoll (1989) and Ellison and Paloutzian (1982) identified two dimensions. The vertical dimension is composed of relationship with God/Higher Power and environment whilst the horizontal refers to the relationship with self and others. Thus, SWB is composed of existential and religious components (Ellison 1983, Hungelmann et al. 1985) rendering SWB applicable to both the believers and the non-believers. Research suggests that SWB may be considered as an internal resource of coping with resultant self-growth in times of distress (Riley 1998, Landis 1996, Thomas 2000).

Research studies on SWB in illness revealed a positive correlation between SWB and hope (Fehring et al.1997, Landis 1996) in which EWB seems to be the predictor of hope and high levels of SWB (Landis 1996). Additionally, SWB was positively related to intrinsic religiousness, that is relationship with God (Mickley and Soeken 1993 and Mickley 1992), suggesting that SWB may be higher when one lives his/her faith (Allport and Ross 1967). Also, intrinsic religiousness was found positively significantly correlated with SWB and hope (Mickley and Soeken 1993, Mickley 1992).

Moreover, a negative significant correlation was found between SWB and anxiety and depression, hinting that the higher the SWB, the lower the anxiety (Kaczorowski 1989) and depression (Kaczorowski 1989, Fehring et al.1997). In addition, anxiety and depression were found to be significantly, negatively related to intrinsic religiousness (Fehring et

al.1997), demonstrating that a relationship with God may yield less anxiety and depression. Furthermore, SWB was negatively significantly correlated with levels of uncertainty of the future suggesting that the higher the uncertainty, the lower the SWB scores (Rutledge and Rayman 2001).

According to Lazarus and Folkman (1984), the generalised and personal beliefs, such as intrinsic religiousness, may be regarded as an important psychological resource of coping. This is because a belief system, such as believing in a paternal, protective God may 'serve as a basis for hope and sustain coping efforts in the face of the most adverse conditions' (p.159). Moreover, Otto (1950) explains that during times of distress, the person may be overwhelmed by his/her own insufficiency to cope with illness. This *numinous* experience may trigger the individual to transcend to a God which may result in empowerment to cope with illness and find existential meaning.

Furthermore, some significant differences were identified in SWB between subgroups of personal characteristics. Fernsler et al. (1999) found that females tended to have higher levels of SWB than the males whilst the older patients had higher levels of SWB than the younger groups (Fernsler 1999, Highfield 1992, Kackzowroski 1989). Also, a positive significant relationship was found between education and EWB (Riley 1998) indicating that the higher the education, the higher the EWB scores. However, no relationship was found between SWB and age, marital status, living alone or with others and employment (Riley 1998).

Furthermore, increased spirituality was found in illness, following illness of AIDS (Belcher et al. 1989) and polio(Woods Smith 1995). According to Hungelmann et al. (1985), SWB

in illness may lead to self-growth and source of finding meaning and purpose in life. However, Fernsler et al. (1999) found in oncology patients that SWB was negatively correlated with increased demands of illness. This may be found in the acute phase of the disease whereby, according to Lazarus and Folkman (1984), the patient may appraise illness as stressful and threatening, beyond his/her coping resources, yielding anxiety and depression.

Furthermore, cognitive appraisal of the stressful situation is ongoing, whereby the patient evaluates the balance between the perceived current demands of illness and his/her coping resources. Therefore, since most of these studies adopted a cross-sectional design, fluctuation of results were not captured as succeeded by Rutledge and Rayman (2001) who monitored SWB across time, that is pre-retreat and the first fourteen weeks after discharge. However, the qualitative method approached by Ferrell et al. (1996, 1997), Belcher et al. (1989) and Hungelmann et al. (1985) gave insight into SWB as an internal resource of coping.

6. Anxiety and Depression in patients with MI and relationship with SCS and personal characteristics.

This section defines anxiety and depression and identifies the levels of patients' anxiety and depression during the recovery period of MI. The relationship between the personal characteristics and anxiety and depression are elicited. The cognitive theories of Stress and Coping (Lazarus and Folkman 1984) and the *Numinous* experience (Otto 1950) are used to illustrate the possible relationship between SCS and anxiety and depression.

6.1. Definitions of anxiety and depression

Smeltzer and Barr (1996) define anxiety as:

‘a normal reaction to stress and fear. It is an emotional reaction to the perception of danger, real or imagined, that is experienced physiologically, psychologically and behaviourally’ (p.134).

This is substantiated by Philip et al. (1979) who define anxiety as a state of emotional upsets which jeopardises the person’s sense of judgment of the threat itself and of his/her capability to surmount the stressful condition. Thus, Crowe et al.(1996) explain that anxiety is exhibited by a feeling of fear, tension, panic or an expectancy that something unpleasant could occur with accompanying physical clinical features.

Furthermore, Crowe et al. (1996) define depression as a syndrome incorporating the cognitive, affective and behavioural symptoms, as well as neurobiologic changes.

According to Thornton (2001), depression may be exhibited by feelings of sadness, inner tensions, loss of interest, impaired concentration, loss of energy and changes in appetite and sleep, guilt and recurrent suicidal thoughts or acts.

Furthermore, Havik and Maeland (1990) differentiate between the emotional reactions of anxiety and depression by saying that:

‘anxiety has usually been linked with the experience of threat, whereas depression is thought to be caused by the experience of loss’(p.280).

According to Lazarus (1991) both anxiety and depression are associated with emotions and thought. Consequently, Bowman (2001) argues that emotions are ‘an integral and essential part of human existence’ (p.256) and thus they may be considered as healthy reactions to overcome threat.

6.2. Research studies on anxiety and depression and relationship with SCS and personal characteristics.

Kim et al. (2000) investigated state-anxiety and gender in a sample of 424 males (66%) and females (34%) with MI, mean age 62 years. The sample was recruited from six hospitals in Australia. Anxiety was measured during the first 72 hours of admission by the State Anxiety Inventory and the Brief Symptom Inventory. Findings revealed a significant relationship between anxiety and marital status in gender. The single men scored significantly higher than the married and widowed men. Conversely, the married women scored significantly higher than the single and widowed females.

Additionally, no significant difference was found between anxiety and income in men. In contrast, women with lower incomes scored significantly higher in anxiety than the women with higher income. No significant differences were found between anxiety and other clinical and personal characteristics, such as age, education, ethnicity, previous ischaemic heart disease, angina or MI.

The lack of significant differences between anxiety and age, education and clinical characteristics are consistent with the findings of Christman et al. (1988), Webb and Riggins (1994) and Crowe et al. (1996) who collected data following admission to hospital. However, the significant difference in marital status was inconsistent with Webb and Riggins (1994) who did not find any difference between anxiety and marital status. Additionally, the significant difference in income is inconsistent with the findings of Crowe et al. (1996) who found no significant difference in occupation. It is noted that Kim et al. (2002) measured state anxiety with two scales with high internal consistency, which may enhance convergent reliable and valid results. Although non-random, the large sample

(n=424) had statistical power to identify these significant differences as opposed to the other studies which recruited smaller samples.

Chiou et al. (1997) investigated the degree of anxiety and depression in Taiwan on 40 male and female patients post MI, mean age of 63 years. Data were collected on the third to the fifth day after transfer from Coronary Care Unit (CCU) by the use of a translated version of the Hospital Anxiety and Depression (HAD) scale (Zigmond and Snaith 1983).

Findings revealed a positive significant relationship between anxiety and depression. The levels of anxiety and depression were in the low range (0-7). This is comparable with the findings of Havik and Maeland (1990) and Thompson et al. (1987) who found relatively low levels of anxiety and depression of patients with MI in hospital. However, Chiou et al. (1997) argues that the Chinese culture is oriented towards an indirect and minimal expression of emotions. Therefore, patients might suppress their distress, resulting in a low score of anxiety and depression. This is supported by Lazarus (1981), stating that a person has a repertoire of behaviours accumulated through the individual's development. This implies that culture may contribute towards the control of negative emotions in dealing with the demands in illness.

Crowe et al. (1996) conducted a longitudinal comparative study in Canada, during a Rehabilitation programme to identify relationships between patients' characteristics and their anxiety and depression. A sample of 201, male and female patients, mean age of 61 years. The patients were randomly assigned to the experimental and control group. Data were collected six times, on the third day after MI in hospital and on the 14th, 24th, 41st

and 56th week after MI. Anxiety was measured by the Spielberger's State-Trait Anxiety Inventory and Beck Depression Inventory.

No significant relationship was found between the state-trait anxiety levels and gender, education and occupational status. However it is worth noting that on the 3rd day post MI, scores of state-anxiety were moderate with 10% having higher levels, whilst the trait-anxiety was also moderate with 14% reporting higher levels. Additionally, both state- and trait-anxiety scores decreased by the 14th week and remained low up to the 56th week. Similarly, patients had low and moderate levels of depression which decreased by the 14th week and remained the same by first year.

It appears that as time went by, the patients may have found specific SCS helpful, such as support from a relationship with family, friends, church peer groups or talked to other patients with MI, with whom they could compare their improvement in recovery. Hence, the patients may have experienced equilibrium between the perceived demands of MI and coping resources, with less amount of anxiety and uncertainty about their prognosis (Lazarus and Folkman 1984).

Furthermore, it was estimated that younger patients were liable to develop more psychological distress at the time of an acute MI. This was consistent with the findings of Rose et al. (1994) who found that older patients experienced lower state-anxiety scores than the younger age group. This is congruent with Rose et al. (1994) and Conn et al. (1991) who found low levels of anxiety following MI.

Research suggests that spirituality is positively related to increasing age (Koenig et al.1999, 1988). The reason may be due to their faith in God and health professionals (Camp 1996). Empowerment may have been derived from their religiousness and relationship with God through self-transcendence which may lower anxiety (Otto1950). Additionally, illness may be a spiritual encounter which may increase the level of SWB (Woods Smith 1995, Carson et al.1990, Belcher et al.1989, Hall 1986, Granstrom 1985).

Rose et al. (1994) investigated the relationship between stress and personal characteristics of a sample of 62 patients with first MI during the first 24 hours after their transfer from CCU to a general ward and 3 months after discharge. Anxiety was measured by the use of Spielberger State-Trait anxiety Inventory. No differences in state- or trait-anxiety scores were reported between male and female patients which is consistent with the findings of Webb and Riggan (1994) and Toth (1993). Similar anxiety levels were found in patients on Beta blockers medication and those not receiving them. Also, older patients exhibited lower state-anxiety scores than the younger ones . This high level of anxiety in younger age group may be due to their commitments of parenthood and the unexpected sudden cardiac disease in their forties. Additionally, Roebuck et al. (2001), Stewart et al. (2000) and Bennett (1992) discovered several stressors which may increase anxiety levels, such as financial problems, resumption to work, lifestyle modification, lack of education about rehabilitation and severity of illness. Thus, such an imbalance between perceived demands of their illness, commitments and coping resources may generate increased stress (Lazarus and Folkman 1984).

Webb and Riggan (1994) explored the relationship between gender and anxiety and depression on a sample of 38 hospitalised patients with MI. Spielberger's State-Trait

Anxiety Inventory measured anxiety during the first or second days prior to hospital discharge. No significant differences were found between anxiety and gender. This suggests that both females and males reacted similarly to the life-threatening illness of MI. This is consistent with Rose et al. (1994) who found no gender differences in state- and trait-anxiety levels.

Furthermore, no significant difference was found between anxiety and marital status. Thus, although married men appeared to have greater family support seemed not to influence levels of anxiety. However, it is argued that other factors may have contributed to these results such as retirement, as the majority of patients were unemployed and denial. Webb and Riggin (1994) argue that during the interview, several men and women “expressed a desire to be discharged and denied feeling ill” (p.122). According to Lazarus and Folkman (1984), such a denial state leads the person to consider his /her MI as ‘benign-positive’ which may yield lesser anxiety levels as found by Havik and Maeland (1990).

Furthermore, Toth (1993) substantiates Webb and Riggin (1994) who investigated stress on discharge from hospital by the use of Toth Stress of Discharge Assessment Tool (SDAT) in the USA. A sample of 236 patients with MI, 54 females (mean age 62.8 years) and 182 male patients (mean age 58.3 years) were recruited. Although severity of illness was similar for men and women it was reported that women had more persistent cardiac symptoms than men during hospitalisation. However, similar range of anxiety between males and females was found. Additionally, no significant differences were identified between levels of anxiety and gender, age and severity of illness. Toth (1993) proposes that “the stress response to acute MI is related to the event of acute MI rather than to demographic or situational variables” (p.38).

Although these findings are congruent with the findings of Rose et al.(1994) and Webb and Riggan (1994), the cross-sectional design does not capture fluctuation of results.

Additionally, the use of convenience samples limit generalisation of results as the population of patients with MI did not have an equal chance of participating. Such a limitation may skew the findings. Furthermore, Toth's sample was selected from four hospitals, of whom 35.2% of patients came from two Christian private hospitals. Thus, the group may have used additional RCS which may have rendered lower anxiety levels more than their counterparts.

Terry (1992) investigated stress and coping in relationship to adaptation, on a sample of 40 patients with MI in Australia, mean age of 54.23 years. Data collection was done two to three weeks (T1) and three months (T2) after the onset of MI by the use of Spielberger's state and trait anxiety scale. Findings revealed low levels of state anxiety across time suggesting that patients were 'not suffering particularly high levels of anxiety in the early post-discharge period' (p.219). Additionally, it was reported that the low levels of trait-anxiety were associated with low levels of disruption of social and recreational activities together with a supportive coping spouse.

According to Lazarus and Folkman (1984) and Cohen and Lazarus (1980), patients may turn to others for bio-psychosocial and spiritual support in order to meet the demands of illness and feel more in control over the situation. The finding of a supportive spouse contradicts the finding of Toth (1987) who found the partner as a source of stress due to their concern about the life threatening illness of MI on their discharge.

Conn et al. (1991) investigated relationships between anxiety/depression and age and gender differences in USA on a sample of 197 adults, aged 40-88 years. Anxiety and depression were measured by McNair's Profile of Mood States after one to two years after MI. It was found that depression scores were significantly correlated with older age, hinting that the older patients were at greater risk for depression one to two years after MI. Research suggests that stress levels will become to normal levels by the first year after MI (Thompson et al.1987, Wiklund et al.1984). However, this finding suggests that increased depression may be caused by other superimposed physical problems due to the degenerative phase of the elderly. This finding is inconsistent with the findings of Rose et al. (1994) and Toth (1993), who found no difference between anxiety and age. This may be due to the different data time collection whereby Toth (1993) measured anxiety on discharge whilst Rose et al. (1994) collected data on the patients' transfer to the medical ward and on the third month after discharge.

Furthermore, Conn et al. (1991) found no significant gender differences in anxiety and depression. However, it is worth noting that older women were found to experience poorer health than men together with higher levels of anxiety and depression. It was reported that this difference may be due to lower social support, poorer health, less participation in the rehabilitation process and lower quality of life. Since the sample was a large sample between the age of 40-88 years, it gives insight on the oldest age group as the existing literature studied patients aged up to 70 years, for example Thompson (1990) and Wiklund et al. (1984) and Havik and Maeland (1990).

Havik and Maeland (1990) conducted a longitudinal study in Norway on a sample of 252 patients with MI, aged below 67 years. Anxiety depression after MI were investigated six

times between admission to hospital and three to five years following MI. Anxiety and depression were measured by Havik and Maeland's State-Dependent Feelings of Anxiety, Depression and Irritability scale.

The findings revealed that the scores of anxiety remained stable during the first nine days post admission (T1) and two weeks after admission(T2). However, it increased considerably during the first one to two weeks after discharge (T3) and then remained stable. Additionally, the levels of anxiety and depression from six weeks onwards were significantly higher than the scores during hospitalisation.

Furthermore, the scores of depression decreased prior to discharge (T2) but increased again on the first one-two weeks after discharge (T3), followed by decreased level on the sixth month after discharge. Additionally, Havik and Maeland (1990) found that patients with a high or intermediate score of denial, reported less anxiety and depression. This is consistent with Webb and Riggan (1994), Taylor and Ferszt (1994), O'Malley and Menke (1988), who found that patients who denied their MI could not perceive themselves as ill.

Furthermore, the overall scores of anxiety across time were higher than the depression scores. Additionally, the study revealed that the patients resolved their depression more quickly than their anxiety. Havik and Maeland (1990) link anxiety with the experience of threat and depression with the experience of loss. Thus, anxiety associated with threat of another heart attack or impending death, may be more persistent than depression which may be associated with loss of security following discharge.

Schleifer et al. (1989) investigated depression on a sample of 283 patients with MI in the USA. Data were collected first on the eighth to the tenth day after MI on the whole group (n=283). The second data collection was collected from part of the sample (n=171), three to four months later. Depression was measured by the Endicor and Spitzer's Schedule for Affective Disorders and Schizophrenia and Research Diagnostic Criteria.

Findings revealed that on the first data collection, 55% had no depression whilst 45% had minor or major depression. Additionally, 33% had minor or major depression three to four months later. These findings imply that in the early stage of recovery, 55% had no depression. This may be due to the use of SCS, such as relationship with family, friends, clergy and/or religious practices, such as prayer, by which an individual feels closer to God. According to Otto (1950), self-transcendence to God / wholly other may empower the patients to cope with MI by perceiving MI as falling within his/her control. This is supported by Koenig et al. (1988) who found a negative correlation between depression and religious and non-religious coping, such as family support and prayer.

No significant relationship was found between depression and severity of illness.

Depression was associated with the presence of non-cardiac medical illnesses and stressful life events before MI. It was found that the majority of patients who initially had major depression showed evidence of depression on the third month after MI. Also, most patients with major depression had not returned to work by the third month. These findings suggest that stressors previous to MI, if they persist afterwards, such as family or work problems, may contribute towards the high scores of depression after MI. This is supported by Thornton (2001) who discovered from a review of research that 8% to 45% of patients who

had suffered MI exhibited symptoms of major depression, which was partly due to depression before MI.

Thompson et al. (1987) investigated anxiety in a sample of 76 male patients, mean age of 53 years with first MI in the UK. Data were collected on four occasions over a year, that is on admission, on the fifth day in hospital, six weeks after discharge and on the first year. Spielberger's State-Trait Anxiety Inventory and Thompson's Self-Rating Anxiety were utilised.

This longitudinal study demonstrated a high level of anxiety after admission, decreasing on the fifth day pre-discharge, increasing at six weeks post-discharge and falling to their lowest level after a year. Higher levels of anxiety at six weeks after discharge supports an earlier finding by Thompson (1982) who found a significant increase in anxiety between the ward and six weeks after discharge in a sample of 20 patients with MI. The longitudinal study captured the fluctuation of anxiety levels across time. Additionally, the convergent data derived from the two scales tend to contribute towards the credibility of the findings. This within-method triangulation was also adopted by Toth (1987).

Toth (1987) assessed the relationship between anxiety/depression and age on discharge home on a sample of 104 patients with MI by the use of Toth's Stress of Discharge Assessment Tool (SDAT) and Sgroi's Anxiety-Depression (A-D) Scale for Medically Ill Patients.

The findings revealed no significant difference in anxiety between the subgroups of gender, education, literacy, previous history of MI, severity of illness, length of stay in CCU and

hospitalisation. Additionally, both younger and older groups found that their partner was a source of stress to them as he/she was concerned about their illness and discharge home away from the medical assistance. Additionally, the younger group considered their responsibility to take care of others very stressful. According to Lazarus and Folkman (1984), the patients' concern about their current commitments and roles in life may generate further anxiety and depression.

Christman et al. (1988) examined the relationship between uncertainty and the use of coping methods, emotional distress and recovery following MI on a sample of 70 patients with MI in the USA. The instruments used were Mishel Uncertainty in Illness scale, Jalowiec Coping Scale and McNair Profile of Mood States. Data were collected three times, that is prior to hospital discharge (T1), after a week (T2) and another four weeks post discharge (T3). It was reported that emotional distress increased across time. Overall, a positive significant relationship was found between uncertainty and emotional distress.

Furthermore, age was significantly related to stress. It was reported that this may be due to the severity of illness in older patients who were found to experience more severe infarcts with the potential of a poorer prognosis. Thus MI in older age may have triggered further stressors, namely problems of physical activity, medical treatment, lack of social support, dependence, finance problems and fear of death (Roebuck et al. 2001, Bennett 1992). According to Lazarus and Folkman (1984) these stressors may render the patient to perceive MI beyond his/her coping resources which may result in higher stress levels.

Wiklund et al. (1984) conducted a comparative study in Sweden investigating the psychosocial outcome after two months and a year following first MI. A sample of 201

male patients, aged between 32 - 60 years, was compared to a randomised reference healthy group of 175 men, aged between 40 and 50 years. The self-rating Eysenck Personality Inventory measured the emotional adjustment post MI.

The study revealed a significant difference between depression at two months and at one year, which was decreased in both groups after a year. However, no significant difference was found in anxiety at two months and after a year in patients with MI. Conversely, a significant difference in anxiety was identified after a year between MI group and the reference group, whereby the reference group had lower scores.

These findings are consistent with Crowe et al.(1996), Wiklund et al.(1984) and Thompson et al. (1987) who found that levels of anxiety and depression tended to return to normal limits by the end of the first year after MI. Being a comparative longitudinal study, the findings illustrated a pattern of fluctuation of findings by differentiating the levels of anxiety and depression which may be attributed to MI.

6.2. Summary and possible relationship of anxiety and depression with SCS and personal characteristics.

Research provides evidence about the fluctuation pattern of anxiety and depression from admission to hospital up to the first year post discharge (Christman et al.1988, Toth 1987). While in CCU, anxiety and depression tend to be high (Thompson and Webster 1989, Thompson et al.1989). However, anxiety and depression might become higher on transfer to a medical ward. This may be due to the loss of security offered by the close monitoring of the heart and the availability of the health care team (Schactman 1987, Crowe et

al.1996). Additionally, the defence mechanism of denial may render lower levels of anxiety and depression (Webb and Riggan 1994, Havik and Maeland 1990).

Furthermore, during the 24 hours prior to discharge, anxiety may be found low due to the possible eagerness of returning to their family, which may distract them for a while from their worries and fears precipitated by MI (Thompson et al.1987). Then, just after discharge home, high levels of anxiety and depression may result due to losing the security from the assistance of the health care team (Terry 1992, Toth 1987). However, these high levels might decrease two to three weeks after discharge (Terry 1992).

Furthermore, following discharge, the levels of stress tend to peak at about 6 weeks post-discharge (Crowe et al.1996, Thompson and Webster 1989, Thompson et al.1987). Later, the levels of anxiety and depression tend to decrease by the third month and six months post discharge (Havik and Maeland1990 and Wiklund et al.1984). Then these levels tend to become stable by falling to their lowest level at one year (Crowe et al.1996, Wiklund et al.1984) and Thompson et al. 1987).

Furthermore, differences may exist between subgroups of personal characteristics. However these findings are conflicting due to various reasons, such as culture, time of data collection and research designs, especially the use of non-randomised small samples. For example a significant relationship was found between anxiety/depression and age whereby higher levels of anxiety and depression were found in older patients with MI (Bennett 1992, Conn et al.1991) as opposed to Rose et al.(1994) who found the younger patients with higher scores.

Moreover, no significant difference was found between gender and anxiety/depression. (Rose et al.1994, Webb and Riggin 1994 and Toth 1987). In contrast, Kim et al (2000) found females with significant higher levels of anxiety. Also, no significant relationship was revealed between anxiety / depression and education and occupational status (Crowe et al.1996, Toth 1987). Conversely, Kim et al (2000) found a significant difference between income and anxiety.

Finally, the rationale derived from both theories in an attempt to identify possible relationship between SCS and anxiety and depression denotes that both religious and non-religious coping strategies may help in meeting the demands of the stressful situation, which may lead to lower levels of anxiety and depression. For example, turning to others for spiritual or social support, such as clergy, counsellors, family, friends or other patients with MI may enhance patients' perception of personal control of MI, which may generate lower levels of anxiety and depression (Lazarus and Folkman 1984, Cohen and Lazarus 1980).

Additionally, Otto (1950) proposes that the *numinous* experience may induce self-transcendence to God yielding empowerment to cope with the current stressful situation, which may lead to lower levels of anxiety and depression. This supported by Lazarus and Folkman (1984) stating that:

‘a belief in a paternal God may permeate a person’s appraisal in practically all stressful encounters and influence coping activity’
(p.160).

This implies that when an individual perceives God as a punitive supreme being, the levels of anxiety and depression may increase (Koenig et al. 1998, Lazarus and Folkman 1984).

7. Spiritual coping strategies in MI and relationship with anxiety, depression, SWB and personal characteristics.

This section analyses research studies on the use of various SCS in MI and other illness. The scarce research available was conducted mainly in the U.S.A. on older adults in the community and in illness. Only five studies were traced which recruited samples of patients with MI, namely Stewart et al.(2000), Agarwal et al.(1994), Bennett (1993), Keckeisen and Nyamathi (1990) and Webster and Christman (1988). The other studies were mainly conducted on patients with oncology disorders, medical and surgical illness. Since MI is considered as a life threatening illness and a chronic disease (Urden et al. 2002, Swanton 1998, Smeltzer and Bare 1996), these studies may be applied to patients with MI. The rationale for the use of SCS is derived from the two cognitive theories of Stress and Coping (Lazarus and Folkman 1984) and the Idea of the Holy (Otto 1950). This section discusses both the non-religious coping strategies (NRCS) and the religious copings strategies (RCS).

7.1. Definition of spiritual coping strategies.

Lazarus and Folkman (1984) define coping as:

‘constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person’ (p.141).

Thornbury (1982) explains that an individual may decrease levels of stress by behaving and thinking in a specific way leading to successful adaptation to stressful situations. Frankl (1962) in his autobiography of his imprisonment in a Nazi concentration camp in World

War II, describes how he and the group survived by nurturing themselves with a sense of meaning, purpose and hope in that overwhelming and stressful life.

This is reinforced by Cohen and Lazarus (1980) who propose five coping methods namely, information seeking, direct action, inhibition of action, cognitive processes and turning to others for help. *Information seeking* is helpful when knowledge is limited or in an ambiguous situation. *Direct action* is oriented towards 'doing something about the problem'. Alternatively, according to Cohen and Lazarus, *inhibition of action* 'can legitimately be thought of as a mode of coping' (p.221). For example, a person who prefers not to receive information about the nature of his impending surgery, may result in less anxiety levels. *Cognitive processes*, such as denial, avoidance, seeing the positive side of the situation may generate less anxiety levels. Lastly, *turning to others* may result in effective social relationships and support in times of distress.

Consequently it is argued that *direct action* mode of coping may be through spiritual activities (Sodestrom and Martinson 1987), such as self-reflection where 'inward turning' may help the individual to get to know the complexity of his/her inner life as a spiritual phenomenon (Lane 1987). This may help the individual to acknowledge his/her potential to cope with the situation. Additionally, praying to God, his/her source of strength and hope, appreciating nature and relationship with others, may yield peace, hope and meaning and purpose in life (Reed 1992, Stoll 1989, Hungelmann et al. 1985). Hence, Hafen et al. (1996) explain that spiritual strategies may:

'help people interpret crisis in a growth-producing way, and as a result they are able to use illness as a means of spiritual growth' (p.385).

7.2. Research studies on spiritual coping strategies and relationship with anxiety, depression, SWB and personal characteristics.

Stewart et al. (2000) examined stress, coping strategies and social support in Canada of 14 couples, spouses and clients with first MI, mean age 57 years. The sample participated in a 12-week support group intervention. Only one client was female. The patients' diaries and the group facilitators' field notes underwent thematic analysis.

Three types of coping strategies were reported to be used to cope with MI, namely emotion-focused strategies such as diversional methods and adjustment of expectations; problem-focused, for example seeking further information; and relationship-focused which consisted of mutual problem solving and communication with their spouse. Similarly, clients found emotional support very helpful through empathy and understanding from family, friends and colleagues. Additionally, socialising with other MI peers and faith in God were a source of comfort.

Lazarus and Folkman (1984) propose that several coping strategies may be used, such as various forms of relationships, so as to shape the meaning and significance of a stressful event. Thus, the use of diversional methods as an emotion-focused strategy, helped the patients to keep the same meaning of MI but eased their mind off the stress of MI. Additionally, altering their goals in life to make them achievable is considered as a problem-solving strategy which is based on reality.

Rom (1994) examined the relationship between stressors, coping strategies, depression and demographic characteristics in Israel on a sample of 155 patients, aged 30-65 years, who

were between three to fifteen months after their first MI. The instruments used were Lubin's Depression Adjective Checklist and Vitilano's Ways of Coping Checklist.

Findings revealed that clients who had the least years of education, the unemployed, those with unskilled jobs, used the coping strategies of avoidance, wishful thinking and religiosity significantly more often than their counterparts. The strategy of seeking social support was used less by low educated person whilst problem focused coping strategies were used less by the unskilled workers. Additionally, self-blame strategy was used most by the skilled workers. Furthermore, a significant difference was found between groups of various religious affiliation in the coping strategy of religiosity, whereby religiosity was used mostly by orthodox subjects.

Moreover, patients with high levels of depression were the women, unmarried individuals, those with low education, the unemployed and unskilled workers. These subjects used mainly avoidance, wishful thinking and religious strategies. Overall, patients were found only moderately depressed. The strategy used mostly was a positive-thinking-way of coping, that is 'count your blessings'. Additionally, the clients preferred to face and solve their problems as opposed to denial which was the least preferred strategy. Lazarus and Folkman (1984) postulate that when the client perceives MI as falling within his/her control, more problem-focused strategies are used. Conversely, when perceived beyond his/her control, emotion-focused strategies tend to be used. However, Rom (1994) found in Izrael that although patients used the problem-solving approach, positive-thinking was mostly used. Similar findings were found in India by Agarwal et al. (1994).

Agarwal et al. (1994) investigated the relationship between positive life orientation (PLO) and recovery from a recent MI in India. A sample of 70 male Hindu patients with first MI, mean age 51 years were recruited. Data were collected twice, on the fourth or fifth day (T1) and a month after MI (T2). The interview schedule consisted of PLO, perceived recovery, expected recovery, helplessness, personal control and mood state scales.

Findings revealed positive relationship of PLO scores with their perceived recovery. It was reported that patients with high PLO had high hopes of future recovery, which may lead to optimism in life. Moreover, a positive significant relationship was found between PLO and personal control whereby the patient may adopt healthy habits. Conversely, a negative relationship was found between PLO and anxiety and depression, hinting that the more a person has a positive outlook to life, the lesser the anxiety and depression. Similarly, a negative correlation was found between PLO and helplessness, indicating that patients with high PLO considered themselves less helpless in changing the situation, such as changing of lifestyle.

Thus, this study support the findings of Rom (1994) who found that positive outlook to life was found beneficial to cope with MI. However, since the patients were all male, the findings may not be automatically applied to females. However, the results give insight on the positive relationship between PLO and relief of stress.

Bennett (1993) investigated relationships between uncertainty, negative emotions and social support in a sample of 81 patients with MI, 65 men and 16 women, mean age 58 years. Data were collected by McNett Coping Effectiveness Questionnaire, Mischel Uncertainty in Illness Scale and Interpersonal Support Evaluation List, Lazarus and

Folkman's Ways of Coping Questionnaire and Lorr and McNair's Bipolar Profile of Mood States. Threat was measured by an open ended question regarding a specific threatening situation. Data collection was done after thirteen weeks of MI with a response rate of 43%. A negative significant relationship was found between perceived availability of social support and uncertainty. Thus, patients who perceived that they had less support reported higher levels of uncertainty.

Additionally, a positive significant relationship was found between perceived availability of social support and problem-focused and emotion-focused coping strategies. This implies that patients used social support resources within both types of coping strategies. Also, positive emotions were associated with higher perceived coping effectiveness. Finally, Agarwal et al. (1994) suggest that the use of coping strategies may alter the emotions experienced, such as uncertainty of the future. It is noted that the poor response rate may have biased the findings. Therefore, had the majority of patients responded, a different picture may have been illustrated.

However, the SCS identified are considered helpful to cope with MI by Lazarus and Folkman (1994) stating that secondary control may be accomplished by the use of vicarious and interpretive control. Vicarious control is by seeking social assistance from powerful others, such as professionals. Interpretive control may be achieved by seeking more information to understand MI and its rehabilitation process. Similarly, talking with other patients with MI, may help by sharing experiences, supporting and learning from each other, as demonstrated by Keckeisen and Nyamathi (1990).

Keckeisen and Nyamathi (1990) examined coping and adjustment to illness on a sample of 30 patients with acute MI, mean age of 58 years, 83 % male. Jalowiec Coping Scale (JCS) was used a month after discharge. The psychological distress and social environmental subscales of PAIS were used to assess degree of adjustment.

It was found that the use of more problem-focused coping, such as seeking information and talking about their problems with others with MI, was significantly related with better psychosocial adjustment. This may enhance coping with the demands of illness. Thus patients using problem-focused coping strategies and those perceiving control over a situation may have less difficulty in psychosocial adjustment after MI. Conversely, severity of illness demonstrated by physiological symptoms, such as chest pain, was positively significantly related with psychological distress and poorer psychological adjustment.

Webster and Christman (1988) examined the relationship between uncertainty, coping strategies and anxiety and depression on a sample of 20 male and female patients with MI, mean age of 61.7 years. Mishel Uncertainty in Illness self-rating scale, Jalowiec coping scale and McNair's Profile of Mood States were used to collect data six to ten days after discharge. It was found that increased uncertainty was related with more use of affective-focused methods, whilst low levels of uncertainty was associated with problem-focused methods. Additionally, those patients who used affective-focused methods also reported high levels of anxiety and depression. Conversely, those reporting low levels of emotional distress tended to use more problem-focused coping.

Increased levels of uncertainty were significantly, positively related to both anxiety and depression. Thus it was reported that ambiguity, complexity and perception of lack of

information had the strongest relationships to emotional distress. This is supported by Lazarus and Folkman (1984), stating that situational factors such as uncertainty about the outcome of MI, may influence negatively both primary and secondary appraisals, which may result in higher anxiety and depression.

Furthermore, age was not related to uncertainty and emotional distress. Lower social class patients tended to use problem-focused strategies less frequently. Additionally, patients with past history of MI or angina reported significantly higher levels of uncertainty. Thus the reoccurrence of illness appears to increase uncertainty, anxiety and depression. It is argued that the small sample tends to limit the findings to the group studied. However, it sheds light on the possible relationship between coping strategies and history of angina and MI which was scarcely researched.

Saudia et al. (1991) examined the relationship between health locus of control and helpfulness of prayer on a sample of 100 patients prior to Coronary Artery Bypass Graft (CABG) surgery. Wallston's Multidimensional Health Locus of Control Scale and Saudia's Helpfulness of Prayer Scale were used on the eve of their surgery.

It was found that 96% of respondents indicated that prayer was used to cope with the stress of cardiac surgery. 2 % of patients expressed that they had others who prayed for them before surgery instead of praying themselves, and 2% of patients did not use prayer as a coping mechanism prior to surgery. No significant relationship was identified between health locus of control and helpfulness of prayer. Prayer was perceived as 'extremely' helpful by 70% of respondents and 96% used prayer as a coping mechanism. Thus, prayer

was perceived to be helpful, irrespective of the belief of internal or external locus of control.

Since data were collected only once on the eve of surgery when they were dependent on powerful others, like cardiologist and multidisciplinary team, does not allow comparison of findings following surgery. Had a longitudinal study been conducted, differences in the use and helpfulness of prayer may have been captured during the process of recovery and independence from professionals.

Koenig et al. (1998) explored the relationship between religious (RC) /non-religious (NRC) coping and medical illness, anxiety and depression in older clients. A sample of 577 clients recruited over a period of 10 years. The RC and NRC were measured by Pargament's scales. Physical health was measured by observer-rated and self-rated measurements whilst depression was assessed by Koenig's self-rated depressive scale and Quality of life was assessed by Spitzer's QOL Index. Data collection was done in the follow-up outpatient visits.

A significant positive relationship was found between positive RC strategies and poor health, indicating that the poorer the health, the more the patient used RC strategies, such as seeking support from clergy and religious forgiveness. A similar relationship was found in positive NRC methods, such as receiving social support. However, the NRC method of acceptance, such as learning to live with it, was associated with better physical health. In contrast, negative RC strategies, such as considering illness as a punishment from God, were related to increased depression and lower quality of life.

Furthermore, positive NRC methods, such as seeking and/or giving spiritual support and trying to make sense of the situation with God were significantly related to lower scores of depression and higher quality of life. Conversely, negative NRC methods, such as alcohol drinking were significantly associated with higher depression and lower quality of life. On considering that the sample came from North Carolina as the “Bible Belt”, where religion is deeply rooted in society, generalisation of results is limited. Thus, these findings apply to the target population studied.

Koenig et al. (1992) examined the relationship between frequency of religious coping and depression in a sample of 850 older male patients, aged 65 years and over, with various religious affiliation and medical illness. A three-item religious index measured the frequency and helpfulness of religious coping whilst depression was assessed by the self-rating Geriatric Depression Scale and the Hamilton observer Rating Scale.

It was found that 20% of patients reported that religious thought and/or activity, such as trust in God, prayer, Bible reading and strong church relationships gave them support and peace. Thus, Koenig et al. (1992) reported that church relationships facilitate contacts with age-matched peers which may enhance social support. This is supported by Allport and Ross (1967) in his Religious Orientation Theory, stating that a religious practice may be the result of intrinsic or extrinsic religiousness. A person with intrinsic religious orientation *lives* his/her religion whilst a person with extrinsic religiousness *uses* his religion for self interest. In addition, persons who live their religion intrinsically may be more psychologically healthy regardless of his/her religious affiliation. This is supported by Acklin et al.(1983) who found in a sample of patients with malignancy that the relationship

between transcendent meaning and intrinsic religiousness was found significantly greater than with extrinsic religiosity.

Furthermore, Koenig et al. (1992) found that depression was inversely related to religious coping. Therefore, it was reported that as depression decreased, faith in God increased. The reason given were that in difficult situations, older patients with few physical or emotional resources, tend to find religious strategies helpful to cope with helplessness, find meaning in life and feel more in control of the situation.

Furthermore, religious affiliation was significantly related to religious coping whereby men from conservative, black, and fundamentalist Protestant denominations were more likely to use RCS. Similarly, older patients, the black and those who had a history of psychiatric problems, reported greater social support as they tended to use religious coping more frequently than the rest. National statistics showed that in that catchment area, the members of these specific religious affiliations came from lower socio-economic classes, had lower educational levels, and more chronic health problems. Thus these factors may have influenced the results more than their respective religious affiliation.

It is noted that both studies of Koenig et al. (1998, 1992) had large samples which may overcome bias in results. Additionally, data were collected objectively by various instruments which produced convergent validity in the data. However, National statistics demonstrated other possible factors which may have influenced the findings. This demonstrates the complexity of human behaviour which suggests that research studies may never be conclusive.

Acklin et al. (1983) investigated the relationship between transcendent meaning, religious orientation, coping and psychological well being using Acklin's Life Meaning Scale, The Allport-Ross Religious Orientation Scale and Sanders' Grief Experience Inventory. A sample of 44 adult patients, 26 with cancer, mean age of 48 years, and 18 with non-life threatening illness, mean age of 42 years was recruited.

The relationship between meaning and intrinsic religiousness was found significantly greater than meaning and extrinsic religiosity. Thus search for meaning through religiosity such as prayers, relationship with God/Ultimate Other as the source of strength and hope seems to enhance coping with the uncertainties of malignancy. However the non-cancer patients demonstrated a positive significant relationship between transcendent meaning and extrinsic religiousness. This may be due to the increased frequency of church attendance as a means of social support which was found to decrease feelings of withdrawal and isolation.

Therefore, this study gives insight into the possible dual impact of religious and non-religious coping strategies. For example, group prayer may serve as a support group and worship. Also, talking to other patients with MI may serve as a problem-focused and affective coping strategy or may include a religious coping. This suggests that coping is a complex process and a specific strategy may yield different effects on individuals differently. Consequently, qualitative method of data collection by interviews and observation may disclose a holistic view of coping more than a self-rating questionnaire.

Reed (1986) conducted a comparative study to identify coping mechanisms of private prayer and participation in religious activities. Two groups of 114 adults, a group with cancer and a healthy group with no chronic or life-threatening illness were selected. Data were collected by The Religious Perspective Scale and the Index of Well Being scale. It was found that the group with cancer indicated significantly greater religiousness than the healthy group. This may be due to the coping mechanisms of a stronger relationship with God, as their source of energy, through private prayer and participation in religious activities. In addition higher education tended to be associated with low religiousness as the mean years of education for the healthy group was slightly higher. Moreover, there was a significant relationship between gender and terminal illness, whereby the terminally ill females showed higher religiousness than the males and the healthy group.

No significant differences were found between the two groups in well being. However, there was a significant positive relationship between religiousness and well being in the healthy group. Additionally, there was a significant relationship between age and well being, whereby elderly patients showed a significantly higher sense of well being than the younger patients. This may be due to awareness of shorter life span in old age and not merely by the effect of illness. Reed (1991) argues that spirituality may be particularly salient among those confronted with the end of life as it facilitates self transcendence beyond aging, terminal illness, and anticipated death. This is supported by Otto (1950) who proposes self-transcendence following the *numinous* experience and by Koenig (1988) and Reed (1987) who found that in illness, a person may turn to his religious coping which may yield a stronger faith as found in the following study.

Reed (1987) expanded her research on a broader concept of spirituality by conducting a comparative study on three groups of 100 adults each. The Spiritual Perspective Scale and the Index of Well Being scale were used. It was found that terminally ill hospitalised adults (Group 1) scored significantly higher in spirituality than the other two groups. Thus terminal illness and prior death involvement seem to enhance patients' attitude towards spirituality. The change in spirituality, represented movement towards greater spirituality, such as stronger faith or more meaningful prayer.

Similarly, Group 2 showed a change in the direction of stronger faith or more frequent prayer. Additional to illness, death of a relative, old age, and other crises were reported to have possibly caused this change. Finally, Group 1 exhibited a positive significant relationship between their spiritual perspective and well being, whilst no relationship between spirituality and well being was detected in the other two groups. Meanwhile, similar findings were found in well being scores across the three groups. Therefore, terminal illness seems to enhance well being, making them in a similar position with the other healthy and non-seriously ill counterparts.

Although this study attempted to incorporate a broader perspective of spirituality, the sample's religious affiliation, 81% Christians and 4% Jews, tended to yield enhanced well being associated with religious coping. This is consistent with Koenig et al (1992) who found a significant relationship between religious affiliation and religious coping. However, although religious affiliation is important but it is the intrinsic religiosity, living his/her faith which may contribute towards well being (Mickley and Soeken 1993, Acklin et al. 1992, Allport and Ross 1967).

Sodestrom and Martinson (1987) investigated patients' spiritual coping strategies during illness on a sample of 25 patients, aged 18 years and over in the USA. The sample had been diagnosed with cancer for at least six weeks and were aware of their diagnosis. Patients were interviewed by the use of a semi-structured interview based on McCorkle and Benoliel's Spiritual Coping Interview schedule. It was found that 88% of patients found their meaning and purpose in life through their belief in and relationship with God. The patients used prayer (84%); religious objects, music, TV/radio (64%); reading Bible (56%); attending church (52%) and requesting Communion (32%). Additionally, people sought spiritual help from a combination of persons, such as family (92%), clergy (76%), friend (68%), nurses (48%) and physicians (24%).

It is noted that the nature of the sample, consisting of 32% Catholics, 64% Christians, 4% humanists, the patients appeared to cope with illness through I-Thou personal relationship with God (Buber 1960). These findings are consistent with research, whereby patients may turn to their religiosity to cope with illness (Reed 1987, 1986, Koenig et al 1988). Since the sample was aware of their cancer, patients may transcend to God to endure suffering and/or adapt to the stressful situation (Otto 1950).

Smith Baldree et al. (1982) investigated the stressors and coping mechanisms of 35 patients, mean age of 42.2 years, with a minimum of six months on haemodialysis. A Stressor scale identified the stressors encountered whilst Jalowiec Coping scale assessed coping mechanisms. The most frequently identified coping methods were hoping that things would get better, maintaining control over the situation, praying and trusting in God, looking at the problem objectively, worrying, accepting the situation, and thinking through different ways to solve the problem. It is noted that patients found hope, prayer and trust

in God and acceptance of the situation the most helpful to cope with their renal failure. No significant relationship was found between the overall stressors and coping scores.

These findings are inconsistent with research whereby a negative significant relationship was found between SCS and negative emotions (Agarwal et al 1994, Rom 1994, Bennett 1993). This inconsistency may be because individuals may differ in the primary and secondary appraisals of the same stressful event. Similarly, the effectiveness of the same coping strategies may differ from one person to another (Lazarus and Folkman 1984). Additionally, the patients may have already adapted themselves to renal failure since they had been on haemodialysis at least for six months. Thus, there might have been differences between those with six months against those with years on haemodialysis.

Koenig et al. (1988) explored the use of coping strategies used in stressful life events in a stratified random sample of 100 older adults, mean age of 66.8 years, well-educated, mean of 12.6 years, 73% married and 90% Protestant religious affiliation. It was revealed that 45% of the sample mentioned a religious behaviour to cope with stressful events, oriented mainly towards placing trust and faith in God, praying and obtaining help and strength from God to cope with the situation. Categorisation of the religious behaviours were threefold, social or group-related, such as church attendance; private/personal, like reading the Bible, acknowledging God's will and combined coping strategies, such as personal private prayer during attendance to church.

No significant difference was found in gender and level of education of sample. The scarce research on spiritual coping presents conflicting findings about personal characteristics. This result contradicts the findings of Reed (1986) who revealed that females and the low

educated tended to be more religious. It is argued that although Koenig et al. (1988) used a stratified random sample to control skewing of results, data were collected retrospectively about their experiences of coping in stressful situations. In contrast the findings of the comparative study of Reed (1986) collected data prospectively, in the actual time of illness, which may generate more reliable findings.

7.3. Summary and possible relationships of spiritual coping strategies with anxiety, depression, SWB and personal characteristics.

SCS are composed of both religious and existential activities (Ellison and Paloutzian 1982) rendering them applicable to both the believers and non-believers:

- hopefulness that things would get better (Smith Baldree et al.1982),
- vicarious relationships (Argawal et al. 1994, Bennett 1993),
- seeking information (Bennett 1993, Keckeisen and Nyamathi 1990),
- social support (Stewart et al.2000, Rom 1994, Bennett 1993).

These findings categorise SCS into emotion-focused and problem-focused coping. Emotion-focused strategies consisted mainly of:

- positive thinking (Rom 1994, Argawal et al.1994),
- using diversional methods or resetting achievable goals (Stewart et al.2000).

Problem-focused strategies consisted of direct problem solving methods:

- seeking further information (Stewart et al.2000, Webster and Christman 1988),
- talking to other patients with MI (Keckeisen and Nyamathi 1990).

Moreover, research identified the following RCS classified as emotion focused coping:

- personal/group prayer (Saudia et al.1991, Reed 1987, Reed 1986, Acklin et al.1983, Smith Baldree et al.1982),
- relationship with God, the source of strength and hope (Koenig et al. 1998,1992,1988),

- Smith 1995, Reed 1987, Sodestrom and Martinson 1987),
- church attendance for religious practices and possibly for social intervention (Rom 1994, Sodestrom and Martinson 1987, Acklin et al.1983),
- use of religious objects/icons, music, TV/radio programmes (Sodestrom and Martinson 1987, Hungelmann et al 1985),
- reading the Bible (Koenig et al.1992, 1988, Sodestrom and Martinson 1987),
- seeking support from clergy (Koenig et al.1998, Sodestrom and Martinson 1987) and receiving Communion (Sodestrom and Martinson 1987).

According to Lazarus and Folkman (1984), several coping strategies may be applied to cope with a perceived stressful situation. No strategy should be considered inherently better than the other, as both primary and secondary appraisals depend upon each individual's perceptions. This is supported by Webster and Christman (1988) who found that patients reporting high levels of anxiety and depression were more likely to use emotion-focused coping and vice versa.

Additionally, research supports Lazarus and Folkman's theory that personal characteristics may influence coping as follows. Webster and Christman (1988) found that lower social class patients used problem-focused strategies less frequently, with resultant greater uncertainty of the future. Koenig et al.(1992) found older patients using religious coping more frequently whilst Reed (1986) found older patients with higher sense of well being than the younger group. Additionally, Reed (1986) found terminally ill female patients having higher religiousness than the males and the healthy group whilst Koenig et al.(1988) found no significant relationship between gender, education and religiousness. Additionally, religious affiliation was found by Koenig (1988) related significantly to religious coping, whereby the blacks and fundamentalists of Protestant denominations were found to use more religious coping.

Furthermore, several other factors may contribute towards differences in coping such as terminal illness and intrinsic religiosity. Reed (1987) found terminal illness to be positively related to spirituality and well being. Additionally, intrinsic religiousness in the group with malignancy was found related to transcendent meaning by Acklin et al. (1983). This is supported by Koenig et al.(1998) who found that making sense of the situation with self-transcendence to God was negatively significantly related to depression and higher quality of life.

Conclusively, these inconsistent findings between spiritual coping and personal characteristics support the theory of Lazarus and Folkman (1984) who identify a multitude of factors, that is personal and situational factors which may influence primary and secondary appraisals. Personal factors may consist of individual's religious beliefs and beliefs about locus of control, personal commitments, roles and goals in life. Additionally, situational factors, such as life-threatening events or ambiguous outcomes may cause differences in coping outcomes.

Conclusion

This literature review critically analysed the available scarce literature on SCS and their relationship with anxiety, depression, SWB and personal characteristics of patients with MI. Literature on the levels of anxiety and depression and relationship to personal characteristics in MI is abundant. However, since research on SCS and SWB in MI is still in its infancy, the possible relationships between SCS in MI and the other two variables were suggested by the application of the two cognitive theories namely, the Stress and

Coping (Lazarus and Folkman 1984) and the Idea of the Holy (Otto 1950) which form the theoretical framework of the study.

The literature review outlined a holistic view of the spiritual dimension of a person, as a precursor to the complex concepts of SWB and spiritual coping. This is based on the nursing, psychological, social, philosophical and theological literature. The concept of wholeness and integral relationships between the mind, body and soul were revealed as the essence of a spiritual person which enables the person to find existential meaning in life experiences. Literature suggests that the spiritual dimension may yield harmony in life even in a crisis situation such as MI.

This review suggests that the level of stress may peak during the patients' stay in CCU (Thompson and Webster 1989, Thompson 1989), and on transfer from CCU (Schactman 1987, Crowe et al.1996). On discharge, the patient may experience increased stress due to insecurity on being away from the medical assistance and fear of death (Terry 1992, Toth 1987). Additionally, stress tends to be high again at six weeks after discharge (Thompson and Webster 1989, Thompson 1982), becoming lower at three months and six months (Havik and Maeland 1990, Wiklund et al.1984) and persistently low by the first year (Crowe et al.1996, Thompson et al.1987).

Furthermore, this literature review identified possible relationships between SCS and personal characteristics, anxiety, depression and SWB. Relationships with personal characteristics provide conflicting findings such as age and gender. Older age in MI was associated with higher levels of anxiety (Bennett 1992, Conn et al.1991) which may be due to poorer health status. In contrast, Rose et al.(1994) found lower scores of anxiety and

depression which may be due to the use of religious coping (Reed 1986). However, no relationship was found between gender and religiousness (Koenig et al. 1988) and SWB (Riley 1998). Gender in MI provides differences in results. Females had higher levels of SWB than the males (Fernsler 1999, Highfield 1992). This may be due to the higher levels of religiousness in females as revealed by Reed (1986). However, no relationship was found between gender and anxiety/depression levels (Rose et al. 1994 and Toth 1987).

Increased religiosity and SWB were associated with terminal illness (Mickley and Soeken 1993 and Reed 1987) with the outcome of higher scores of faith in God and use of prayer. Additionally, Acklin et al. (1983) found a positive relationship between intrinsic religiousness and transcendent meaning whilst Koenig et al. (1998) found self-transcendence to God associated with lower depression and higher quality of life.

Furthermore, a negative relationship was found between SWB and anxiety and depression (Fehring et al. 1997 and Kaczorowski 1989). Conversely, a positive relationship was identified between hope and SWB (Fehring et al. 1997, Landis 1996) in which existential well being was found as a predictor of hope and high levels of SWB (Landis 1996). Additionally, existential well being was even more negatively associated with anxiety (Kaczorowski 1989). This implies that existential coping strategies, such as relationships with family, friends and appreciating nature by both the believers and non-believers may enable finding meaning and purpose in life. Therefore, the non-believers, such as the humanists, atheists and hedonists, may find SCS helpful to maintain a harmonious relationship with self, others and nature and find meaning in life (Baldacchino and Draper 2001, Burnard 1988a, 1988b).

Conclusively, it is noted that the inconsistent findings may be due to the complexity of the new concepts of SWB and SCS together with limitations in research methodology. The term spirituality was very often used interchangeably with religiosity, SWB and spirituality health such as (Reed 1986, 1987). Additionally, limitations in methodology may hinder generalisation of results due to different cultures and convenience sampling used such as (Chiou et al. 1997, Crowe et al. 1996).

Furthermore, most of the studies used quantitative methods which may hinder exploration of the rationale derived from qualitative data such as (Rutledge and Rayman 2001, Koenig et al. 1998, 1992, 1988). Finally small scale studies and cross-sectional designs hinder identification of fluctuation of results in the recovery period of MI (Saudia et al (1991, Toth 1993, 1987). Consequently, Chapter Three will explain the methodology used in the conduction of this longitudinal study which adopts both quantitative and qualitative methods.

CHAPTER TWO

Christian belief as a coping mechanism

Malta is highly dominated by Roman Catholic religion. In 1991, 99% of the population identified themselves as Catholics (Abela 1991) whilst in the year 2000, 95% were recorded as Catholics (Gouder 2000). Thus, 5% of the population belongs to religious groups or sects (Appendix K.1. Table K1.1. p.566). This chapter presents the history of Christianity in Malta and an outline of the teaching of the church on the Christian belief system. Therefore, this chapter describes Christian teaching and not facts. Although not proven, Lazarus and Folkman (1984) contend that positive religious beliefs may yield positive coping and outcome in the management of stressful situations.

Since data collection was conducted on a sample of Maltese patients with MI, this chapter is oriented towards Christianity, which is the dominant religion in Malta. Dorff (1998) claims that the word religion is derived from the Latin root, 'ligament':

'religions link us to the broader context of things; they relate us to other human beings, to the rest of the animate and inanimate world, and at least in the Western world, to God' (p.5).

Therefore, religion may help the believer to cope with the stressful encounters, such as life threatening illness, through relationships with self, others, nature and God. Therefore, religion may help to achieve spiritual well being, which may lead towards finding meaning and purpose in life (Hungelmann et al. 1996).

1. History of Christianity in Malta.

As a prisoner, Saint Paul was on his way from Greece to the court of Justice in Rome in the year 60 (AD). On his way, the 'two hundred and seventy-six souls on board the ship' on which there was Saint Luke, experienced storm and shipwreck (Acts 27: 37). Thus Vella (1984) explains that Saint Paul had to stay in Malta for three whole months, as during winter months, navigation was hazardous.

During his stay in Malta, Saint Luke explains that Publius, the chief man of the island of Malta, gave them lodging and treated them with hospitality (Acts 28 :7). It happened that the father of Publius was healed by Saint Paul as he was suffering from fever and dysentery. Thus, people saw in Saint Paul, a person like god (Acts 28:6). Consequently, 'the other sick people on the island also came and were cured' (Acts 28:9).

Vella (1984) explains that Saint Paul preached the Gospel of Christ in Malta and introduced Christianity. It is stated that Publius was the first citizen in Malta to be baptized and before leaving Malta, Saint Paul consecrated Publius as the first bishop of Malta. Moreover, having witnessed the miracles of Saint Paul, people must have followed his example and became Christians.

Since then, Malta remained professing Christianity. Pope John Paul II visited Malta twice and he was given the warmest welcome, seeing in him the figure of Christ, as Head of the Roman Catholic Church. The first time was in May 1990 and the second time in May 2001, where he beatified three Maltese persons, that is Reverend Monsignor George Preca, Brother Ignatius Falzon and Sister Adeodata Pisani.

2. A summary of Christian belief : A coping mechanism

Lazarus and Folkman (1984) propose that during secondary appraisal, the individual evaluates his/her resources, such as personal religious beliefs to cope with the demands of a stressful situation. Otto (1950) explains that the essence of religion is the *numinous* experience whereby the individual, in times of distress, realizes his/her own nothingness and transcends to God, according to the respective religion for strength, hope and wholeness.

The Christian religion teaches that about two thousand years ago, God became man on earth in the person of Jesus Christ. Hence, the divinity of Jesus Christ. Additionally, God's superabundant love for humanity is demonstrated in sharing human experience to renew the relationship of the human beings with God (Preca 1988). This relationship had been destroyed by the disobedience of Adam and Eve (Genesis 3 : 7). The three years public mission of the 33 year old Jesus Christ in Israel, was spent in teaching, healing the sick, the blind, the oppressed, and extending his rule and grace in the world (Luke 4:18). Due to his controversial issues, which could not be understood at the time, Jesus was crucified, rose from death and ascended to heaven. However, his divine presence still reigns through the Christian churches. According to Green (1992), although Christian churches differ in structure, beliefs and rituals:

‘the concept of one God who reveals Himself as a Father, a Son and a Holy Spirit, that is the Holy Trinity, is central to all Christian teaching’(p.26).

Hence, the belief of an omnipotent, divine healer, to whom one may transcend for protection and help which may empower the individual to cope with a stressful encounter (Otto 1950).

Moreover, the image of God is one of a powerful ruler and a tender and loving carer, who like a shepherd, gathers 'lambs in his arms, holding them against his breast and leading them to their nest' (Isaiah 40: 11). This reflects the nature of God as a loving father (Miller 1995). Hence, these images encourage Christians to build a trustful and loving relationship with God (Ryan 1996), in order to achieve wholeness (Sallady 1985). However, Sneek (1991) in his analysis of the impact of Jung's theory on Christian spirituality contends, that wholeness, that is, integration of the bio-psycho-social aspects, is to be amalgamated with holiness, that is union with God. This union enables the individual to be encouraged in times of suffering, which may be too abstract to understand (Lindholm 1993).

Furthermore, Christianity offers a personal relationship with God through Jesus Christ, by means of prayer, religious forgiveness, Communion and ointment of the sick (Catholic Church Catechism 1995).

Grosvenor (1999) points out that Judeo-Christian teaching is grounded on the practical actions of care for others. This is seen in Jesus Christ who spent a great amount of time and energy dealing with the physical as well as the spiritual needs of persons (Preca 1986).

Furthermore, the practice of Christian religion is witnessed by living the commandment, "Love one another as I have loved you" (John 13, 34) and "love your neighbour as yourself" (Matt. 22, 39). Consequently, loving others yields reciprocal relationship with Jesus Christ, 'when I was a stranger, you made me welcome,..... when I was ill you visited me' (Matt. 25 : 35,36). Therefore, the presence of Christ in life, who is 'the way, truth and life' (John 14: 6) provides the Christian with individual understanding, guidance and peace in times of illness, as Christ was 'despised, the lowest of men, a man of sorrows, familiar with suffering' (Isaiah 53: 3).

Consequently, God through Christ, may be a source of strength and energy, giving personal security (Griffin 1984). However, the individual's cooperation is expected, as according to St. Augustine's confessions, although God the creator, created the individual without his/her own help, God will not save him/her without one's cooperation (Portelli 1989). This is emphasised by a Maltese proverb saying, 'do your best and let God do the rest'. Hence, Christians are urged to remain in unity with God, in an attempt to maintain wholeness, 'remain in me, as I in you. As a branch cannot bear fruit all by itself, neither can you unless you remain in me.' (John 15: 4). Christianity teaches the preciousness of the individual, even when the person sins and is in need of forgiveness (Rich 1990, Schnorr 1984). Additionally, Christians believe in the life after death and the immortality of the soul/spirit, whereby the individual finds his/her life after death and sees God face to face (1, Cor. 13,12).

Christians believe that their relationship with God is to be based on a fatherhood relationship. However, it appears that the misconception of viewing illness as a punishment from God seems to be concealed within the human being since childhood Ebmeier et al. (1991).

Finally, Levin and Schiller (1987) in their analysis of about 200 research studies on religion, identified the common category of the findings which suggests that religion appears to have a therapeutic significance in one's health. They propose that the structure of religion as a social institution may influence health positively by the belief that one is among 'God's people'. Therefore, 'no weapon that is forged against you will succeed' (Isaiah 54:17) Hence, whatever the denomination of Christian religion, the common belief

is that God is present and available to all, to help and assist in times of distress, such as myocardial infarction (Steinbaun 1996).

CHAPTER THREE

Research Design

This chapter outlines the plan and design of the study on a sample of patients with first myocardial infarction (MI). The published research is mainly cross sectional and quantitative in nature. Hence a descriptive correlational longitudinal design is adopted in order to identify fluctuations in the relationships between use and helpfulness of spiritual coping strategies (SCS) and anxiety, depression and spiritual well being (SWB). Additionally, this descriptive study is supported by qualitative data to enhance interpretation of the quantitative results. This chapter presents the research question, research aim and objectives, time schedule, operational definitions of the terminology used and research design.

1. Research Question

What is the relationship between use and helpfulness of SCS and anxiety, depression, SWB and personal characteristics of Maltese patients with first MI, from transfer to the medical ward to the first three months after discharge?

2. Aim, Objectives and Hypotheses

2.1. Aim

To answer the research question, this study aimed to:

identify relationships between SCS and anxiety, depression, SWB and personal characteristics of Maltese patients with first MI from transfer to the medical ward to the first three months after discharge.

2.2. Objectives

To achieve the aim of the study, the following objectives were set :

- a) define the terms spirituality and SWB as perceived by patients,
- b) measure the levels of anxiety, depression, SWB and use and helpfulness of SCS on transfer to the medical ward (T2), on discharge home (T3), on the sixth week (T4) and on the third month after discharge (T5),
- c) specify individual differences, pattern and fluctuations of results in SCS, anxiety, depression, SWB across time,
- d) discover statistical relationships between SCS and anxiety, depression, SWB and personal characteristics,
- e) rank the first five SCS perceived as most helpful by patients to cope with MI,
- f) explore the rationale for the helpfulness of SCS in coping with MI.

2.3. Hypotheses

No 1 : H1 There will be a **negative** relationship between SCS and anxiety and depression during hospitalisation and the first six weeks after discharge.

No 2 : H1 There will be a **positive** relationship between SCS and SWB during hospitalisation and the first six weeks after discharge.

No 3 : Ho There will be no difference across time in SCS between the subgroups of personal characteristics of age, church attendance before MI, drug treatment which may influence mood states, education, gender, history of ischaemic heart disease and angina, living alone or with others, location of residence, marital status, relationship with God and social class/occupation.

3. Time schedule of the research process

The stages of the research process were spread over four years (1998 – 2002) (Appendix M. Table M.1. p.602) The literature review continued throughout all the course of research. Additionally some of the tasks (1 – 18) overlapped with each other.

During the research process, preliminary results were disseminated in international nursing conferences (Baldacchino 1999, 2000, 2001a), and publications in two international nursing journals (Baldacchino and Draper 2001, Baldacchino et al. 2002 , (Appendices L.1. p. 585, L.2. p. 594).

4. Operational Definitions

Published research used the term *spirituality* synonymously with *religiosity*. This is because the same term may frequently have different meanings for different researchers (Cormach 1996). Thus Ellison (1983) argues that:

‘in order for scientific study to occur, there has to be a consensus of meaning with regard to the phenomenon being observed’ (p.331).

This may be achieved by the use of operational definitions which allow differentiation between the terms used as they specify an explicit meaning to the concepts studied (Bensley 1991).

- **Religion** is defined as the spiritual experience as part of an organised system of beliefs, practices and knowledge (O'Neill and Kenny 1998).
- **Spirituality** is the dynamic creative force that keeps a person growing and changing. It integrates the bio-psycho-social dimensions (Piles 1990, Carson 1989, Frankl 1984).

- **Spiritual well being (SWB)** is ‘a sense of harmonious interconnectedness between self, others/nature, and Ultimate Other, which exists throughout and beyond time and space. It is achieved through a dynamic and integrative growth process which leads to a realisation of the ultimate purpose and meaning in life (Hungelmann et al.1985 p.152).
- **Spiritual coping strategies (SCS)** are positive oriented activities/thoughts based on humanistic values and principles which may or may not contain strategies based on religious beliefs which help the patient to cope and adapt to the situation of MI (Goddard 1995, Mickley et al. 1992, Karns 1991,).
- **Religious coping strategies (RCS)** are activities/thoughts based on religious beliefs which help the patient cope with MI.
- **Non-religious coping strategies (NRCS)** are activities/thoughts based on humanistic values and principles which help the patient cope with MI.
- **Myocardial Infarction (MI)** is the most life-threatening of the acute coronary diseases in which myocardial necrosis occurs. It results from abrupt decrease or total cessation of coronary blood flow to a specific area of the myocardium (Urden et al. 2002).
- **Anxiety** is a normal emotional reaction to the perception of danger, real or imagined, that is experienced physiologically, psychologically and behaviourally (Smeltzer and Barr 1996).
- **Depression** is a syndrome incorporating the cognitive, affective and behavioural symptoms, as well as neurobiological changes (Crowe et al. 1996).
- **Stress** is a relationship between the person and the environment which is appraised by the individual as taxing or exceeding one’s resources (Lazarus and Folkman 1984).
- **Coping** is ongoing cognitive and behavioural efforts to manage specific external and /or internal stressors (Lazarus and Folkman 1984).

- **Acute phase of MI** refers to the recovery period while in the Accident and Emergency Department and Coronary Care Unit at the local state general hospital.
- **Chronic phase of MI** refers to the recovery period between their transfer to a medical ward in the local state general hospital and the first three months after discharge from hospital.
- **Maltese patients with MI** are female and male Maltese speaking patients, aged 40 years and over, who experienced their first heart attack, recruited during the acute phase while in the Coronary Care Unit (CCU).

5. Research Design

Planning for research is of utmost importance (Hannigan and Burnard 2001, Nelson 1980).

Before planning this research study, on the 17th and 18th November 1997, I consulted personally Professor Philip Burnard and Dr. Linda Ross in Wales, who had published manuscripts on spirituality and spiritual care in recent nursing journals. Burnard (1993, 1990, 1988a, 1988b, 1988c, 1987a, 1987b, 1986) discussed spiritual needs, spiritual distress and spiritual care in nursing care including those of the atheists and agnostics. Ross (1997a, 1997b, 1996, 1995, 1994a, 1994b) presented both quantitative and qualitative results on spiritual care. This consultation gave me insight into the planning of this study. Additionally, Burnard (1998, 1992) proposed a method of manual qualitative analysis which guided my analysis.

During the planning of this study with my two supervisors in April 1998, I considered the quasi-experimental design, action research, phenomenology and grounded theory research approaches. The quasi-experimental design involves the manipulation of an independent variable, such as the use of a spiritual coping strategy (Wilson-Barnett 1991, Seaman

1987). Action research implements an intervention to bring a change in nursing care and reduce the theory-practice gap (Polit and Hungler 1999, Holter and Schwartz-Barcott 1993).

Phenomenology was considered also as it explores the complexity of the lived human experience in a holistic way by the conduction of qualitative methods (Friberg 2000, Hallett 1995, Omery 1983). At first I dwelled on this design as I wanted to explore the concept of spiritual well-being. Additionally, I thought about exploring the theory of spiritual well being on Maltese patients by grounded theory approach (Wilson 1996, Glaser and Strauss 1967). However, on considering the fluctuations of results across time, a longitudinal study was deemed necessary which was supported by qualitative data to enhance interpretation of the quantitative findings.

My decision to embark on a descriptive correlational longitudinal study enabled the identification of patterns and fluctuations of SCS, anxiety, depression and spiritual well being during hospitalisation and the first three months after discharge. The qualitative data from patients' face to face interviews aimed to enrich quantitative findings by clarifying the nature of the relationships between the variables studied (Schmidt Bunkers et al.1995, Moccia 1988, Goodwin and Goodwin 1984). Carr (1994) argues that neither approach is superior to the other as qualitative research is invaluable in the exploration of subjective concepts whilst the quantitative methods facilitate the objective discovery of quantifiable information. Thus, the debate regarding the use of qualitative as opposed to the quantitative methods is overcome by implementing both methods in order to search for more complete answers to research questions which confront complex concepts, such as spiritual coping (Ingalill 2000, Corner 1991, Taylor Myers and Haase 1989, Beck 1989, Duffy 1985).

5.1. Quantitative Data

Polit and Hungler (1999) define quantitative research as an objective process which involves the systematic collection of numerical information and data analysis by the use of statistical procedures. Hence quantitative research is oriented towards the rigorous measurement of the variables under investigation and to estimate quantitative relationships between these variables. Cormack (1996) explains that quantitative research incorporates descriptive, correlational, quasi-experimental and experimental research. Selection of the appropriate approach depends on the nature of the research question (Polit and Hungler 1999).

Consequently, since the research question of this study addresses relationships between use and helpfulness of SCS and the three variables of anxiety, depression and spiritual well being, a descriptive correlational design was employed. Additionally, to enrich this quantitative data, the rationale for these relationships were derived from qualitative data, that is from face to face interview. The interview explored patients' perceptions about the rationale for the helpfulness of SCS in coping with MI.

5.1.1. Descriptive Correlational design

Polit and Hungler (1999) explains that the aim of a descriptive study is twofold. Firstly, to observe, describe and document perspectives of a situation as it naturally occurs. Secondly, a descriptive study may yield to hypotheses generation or theory development. Thus a descriptive design is non-experimental as it does not manipulate variables and does not search for causal relationships (Oppenheim 1998). A descriptive design may be adopted when only one or several variables are studied. Its aim is to describe the status of each,

such as quantifying the frequency of the use and helpfulness of a single or many SCS. However, when relationships are identified between two or more variables, it is known as descriptive correlational design or *ex post facto* research ‘from after the fact’ (Polit and Hungler (1999). In *ex post facto* research, the researcher has no control of the independent variable because it had already occurred. This applies for this study, as data is collected retrospectively, by the use of three questionnaires, following the onset of MI. Additionally, relationships between variables were statistically identified, supported by qualitative data.

5.1.2. Advantages and Disadvantages of a Correlational design

A correlational design simply takes ‘a whole range of measures on one of the variables and assesses whether they show a pattern or relationship of some sort with the measurements on the other variable’ (Hicks 1999 p.66). When compared to an experimental or quasi-experimental design, Polit and Hungler (1999) assert that correlational studies have the disadvantage of being weak to identify causal relationships. Thus, if a negative relationship is identified between the use of SCS and anxiety, it does not necessarily mean that anxiety is lowered by their practice (Martin and Thompson 2000). However, this relationship may generate hypotheses for further research.

Furthermore, since correlational research does not employ random sampling, they are susceptible to false interpretation. This is because, it is generally assumed that before the occurrence of the independent variable, such as MI, the groups studied, such as various age groups, were similar before MI. Consequently, the pre-existing differences of the groups may be the alternative rationale towards the estimated differences in the findings.

Conversely, the correlational design has several advantages. Firstly, some research problems and variables in nursing and social sciences cannot be studied using experimental designs. Thus Hicks (1999) emphasizes the crucial role of correlational designs in research. Additionally, Hicks (1999) states that correlational designs tend to have fewer ethical issues than experimental design as no intervention is involved. Furthermore, in a correlational design, a larger amount of interrelationships between variables may be detected in a shorter span of time as opposed to the experimental design which tends to manipulate one variable at a time. However, when correlational designs yield strong positive or negative associations between variables, it does not necessarily mean that they are causal relationships. However, these results may generate hypotheses and predictions whereby a negative correlation may predict high scores on one variable from knowledge of low scores on the other. Thus, the three hypotheses were formulated for this study, based on the literature review.

5.2. Qualitative data

The qualitative data of this study consisted of two open-ended questions in a semi-structured face to face interview, exploring the definitions of spirituality and SWB. These definitions explored patients' perceptions of spirituality which may be compared to the published research. Additionally, in an attempt to enhance interpretation of relationships between the variables studied, another semi-structured face to face interview was conducted on discharge from hospital. It explored the reasons given by patients about their perceived helpfulness of SCS.

Qualitative data seeks insight into the 'why' of a given perception and a situation from the point of view of the subjects (Morse 1997, Estabrooks 1997, Melia 1982). This is

supported by Benoliel (1984) and Phillips (1989) who propose that qualitative methods in science may be considered as systematic inquiry about understanding human beings and their communication with themselves and their environment.

Therefore, Knafl and Howard (1984) explain that qualitative research is equated with those methods, such as phenomenology, case studies and grounded theory approach, which generate narrative data through in-depth interviews, participant observation, as opposed to numerical data, by the use of objective tests by self-rating questionnaires. Thus Knafl and Howard (1984) point out that the major contribution of qualitative data is to grasp the patient's point of view of the phenomenon and to describe it in detail and accurately.

Moreover, Morse (1997) identifies three functions of qualitative research. Firstly the findings may generate further research questions to be studied in a more rigorously structured research. Secondly, qualitative research may generate theories, such as Neuman systems model of care (1995) and Roper et al. (2000) model of care which guide implementation of care. Thirdly, qualitative research may support quantitative research studies. This applies to this research study because the qualitative data, gathered from semi-structured interviews, supported the interpretation of correlational results on highly subjective variables, such as SWB and SCS. This is supported by Lauzon (1995) who states that amalgamation of quantitative and qualitative research can define:

‘patterns of behaviour associated with normal and critical life events, depict changes in health status, and predict how and explain why these patterns and changes occur’ (p.101).

5.3. Longitudinal designs

The published research on spirituality is cross-sectional in design. Hence, I decided to adopt a longitudinal design in order to identify changes in the levels of SCS, anxiety, depression and SWB.

Polit and Hungler (1999) define longitudinal design as research which entails collection of data at more than one point as depicted in Figure 3.1.

Figure 3.1. : Times of quantitative and qualitative data collection

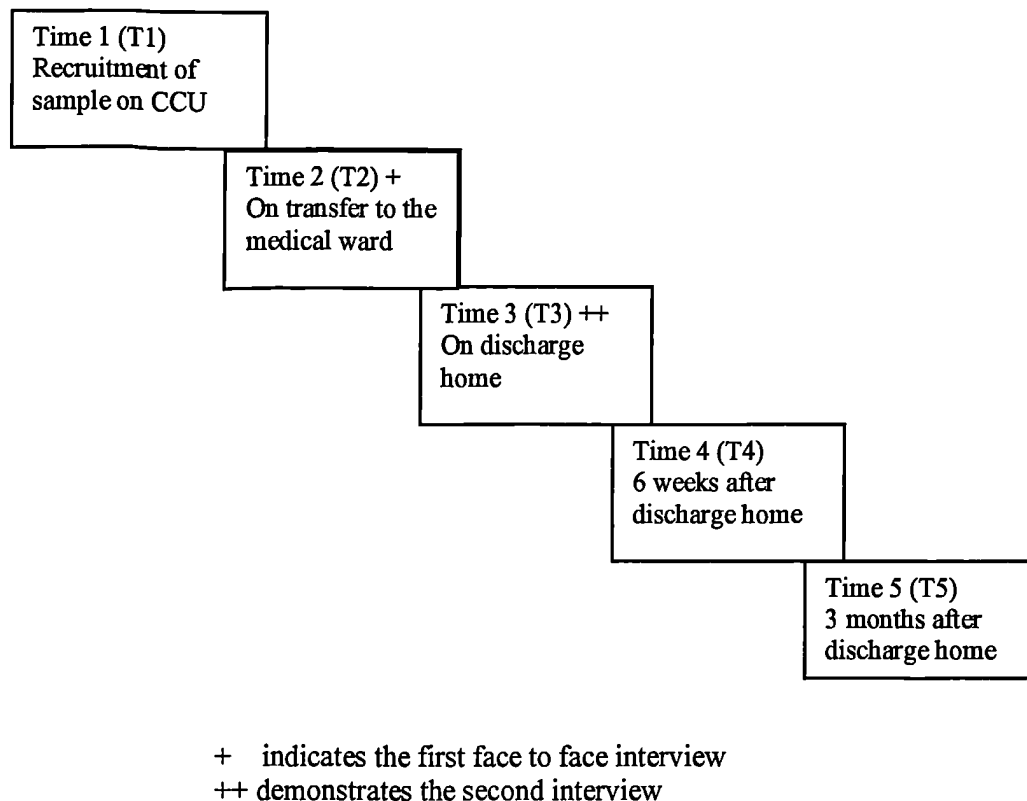


Figure 3.1 presents the collection times in the longitudinal study. Following recruitment of the sample of patients on the coronary care unit (CCU) at time one (T1), the study consisted of four data collection times, based on the literature which identifies the peak points of anxiety and depression. The data collection times were on transfer to the medical ward (T2), on discharge home (T3), after six weeks (T4) and three months after discharge (T5).

Originally, it was planned to follow the patients till the sixth month after discharge(T6). However, due to time constraints, it was decided to stop at the third month (T5).

Barnard et al. (1987) contend that longitudinal designs are appropriate to study the dynamics of a variable over time. Therefore, an advantage of this design is its capability of revealing patterns of change and reasons for the changes when qualitative data are also included. However, the main problem is attrition of sample. According to Polit and Hungler (1999) the persons who drop out of the study may render biased findings due to lost persons being different from the rest of subjects who continue to participate in the study. Consequently, Barnard et al. (1987) proposes ways of reducing attrition rate of sample. Firstly, an additional number is recruited to compensate for the possible loss over the course of data collection. Thus following estimation of the sample size of 50 patients by power analysis, an additional 20 patients were recruited. Fortunately, the sample survived across time, ending up with 51 patients (72.9%). Hence this study had an attrition rate of 27.1% at the end of the study (Appendix K2, Tables K2.10, K2.11 p.572).

Secondly, contact with the sample is to be maintained to retain the sample over time and to overcome the problem of missing data. Consequently, I planned data collection by personal visits both in hospital and at home. My personal visits enabled return of the data package and collection of additional data by Q-sorting, which is not included in this thesis. These visits helped the completion of the questionnaires as at the end of each visit, I flipped through the questionnaires and drew their attention to the missing data. Hence, total completion of the questionnaires prevented interference with data analysis, which according to Barnard et al. (1987), 98% of the items needed to be completed for appropriate data analysis. Additionally, I asked each patient to summarise verbally his/her response of

the questionnaires in order to verify whether the individual's response reflected reality or had been influenced by the assistance of somebody else in rating the questionnaires.

Furthermore, before my departure I gave them a provisional date for my next data collection. Then, following each visit, I sent them a Thank-you card and a personal identity professional card, showing them my appreciation for their participation. This card provided them with the agreed provisional date in writing, for their next data collection. In the meantime, I made use of their demographic data by sending birthday cards to the patients and also seasonal greetings at Christmas 2000 and Easter 2001. Since the data collection was completed two weeks before Easter, the card, supported by a letter (Appendix E.9.1. p.492) served also to thank them for their contribution in the study.

On my visits, I tried to abide by the norms of the Maltese culture, '*Ghand hadd ma tmur b'idek f'idek*', that is '*you go to nobody's house without presenting something*' (Lanfranco 2001, Cassar Pullicino 1992). Thus, on each visit I presented them with a little gift before my departure as follows:

- On discharge (T3), I gave each patient a packet of 'diet' orange juice,
- 6 weeks after discharge (T4), I offered them a packet of 'diet' all bran crackers,
- On the last visit, 3 months after discharge (T5) I donated a window stained glass hanger, depicting the rainbow and peace dove in an attempt to instill hope in their recovery period.

Furthermore, in an attempt to control the large quantities of data over the four collection times, I took on board the suggestions of Barnard et al. (1987) who propose organization of data and filing according to the type of questionnaires. This, I did promptly together with handwritten coding of the findings of the questionnaires, on approximately weekly basis.

To prevent bias in results, Hanestad (1990), and Barnard et al. (1987) recommend avoidance of assessment points which may influence the findings such as, patients' birthday. I found this in one of the patients who had his birthday on his transfer to the medical ward. The patient was found upset at being hospitalized on his birthday. The reason was that he usually had a family gathering at home to celebrate his birthday. Thus, he decided to withdraw from the study as he stated that he was not in the mood of filling in the questionnaires and of participating in the first face to face interview.

Finally, Barnard et al. (1987) point out the need to have enough personnel to cope with different collecting times. This meant a great deal for this study. In fact, this suggestion was not taken on board for several reasons. The theme of the study investigated two highly subjective variables that is SCS and SWB. I had contemplated to use a second data collector. However, her definition of wholeness, which included religiosity persistently, made me decide to take the dual role, that of researcher and data collector. To achieve this, I took all the precautions possible not to contract flu, a common inconvenience in winter. Fortunately, I survived all the data collection till the end. Providentially, I had a private research secretary, who was faithful throughout all the stages of the study. This assistance helped in collecting additional data from patients and Maltese and Gozitan nurses, hospital and community chaplains.

6. Research Setting

This study was conducted in Malta, a small archipelago of islands in the Mediterranean. The two smaller islands, Filfla and St. Paul's are not inhabited. The island of Comino, 1.58km by 1.58km, is inhabited by tourists, hotel workers and only one extended family

from Gozo. The major two islands are Malta, 27km by 14km and Gozo, 14km by 7km (Pace et al. 2001). The population is approximately a third of a million, that is, 378,518, consisting of 190,829 females and 187,689 males (Central Office of Statistics 1999) .

One of the characteristics of the Maltese culture is social support both in distress and non stressful times. History highlights the social solidarity demonstrated in the shipwreck of St. Paul in Malta whereby the Maltese treated them with hospitality (Acts 28:7) and before departure, they were supplied with the necessary provisions for their trip to Rome (Acts 28:9).

Taylor and Aspinwall (1996) define social support as:

‘information from others that one is loved and cared for, esteemed and valued and part of a network of communication and mutual obligations’ (p.91).

According to Lanfranco (2001) and Cassar Pullicino (1992), social support in Malta and Gozo stems from the existing nuclear family structure which tends to offer material support, such as financial assistance and emotional support by their availability to help each other. According to Roy (1986), the family influences all aspects of a person’s life, which may be a major resource of support for the individual. This system of social support provides reassurance to the individual family member that he/she is a valuable person. Social support is also extended to friends and the nearby neighbours, such as by offering their presence during the recovery phase from illness in the absence of the respective family member, for example during working hours.

Additionally, the Social Welfare Department encourages the elderly to remain living in the community by the Social Assistance Scheme, whereby a family member is remunerated for taking care of his/her elderly parent at home. Also, the Tele-Care communication system provides a sense of safety and security to those individuals who live alone. Moreover, the small distances in Malta and Gozo enhances social support as the individual can summon medical or family assistance within a short period of time. Thus, social support is considered as a reciprocal spiritual relationship (Walton 1996) which may enhance the prospects of recovery from MI both in hospital and in the community (Fallowfield 1990).

In Gozo there is a regional general hospital which has a CCU and a joint medical ward and surgical ward. The complicated cases are transferred to the main local hospital in Malta by ambulance-helicopter. Unfortunately, the longitudinal study with five data collection times did not permit me to include patients from Gozo because traveling by ferry or helicopter was time consuming. Hopefully, further research on patients will include samples from Gozo for comparative purposes.

The local general hospital in Malta consists of 852 beds and is named after Saint Luke, a medical doctor, who was shipwrecked in Malta with St. Paul. The hospital contains an Intensive Therapy Unit (ITU) which up to 1986 it used to incorporate CCU. As a staff nurse I worked in ITU for two years, between 1978 and 1980. In 1986, CCU was transferred to a separate unit which consists of 17 beds. By the nurses' station there is the 3-bedded unit for the most severe acute cases. Then the other 14 beds are situated in a two 4-bedded rooms and three 2-bedded rooms. There are 23 nursing staff in all, consisting of 5 teams, each containing, 2 registered general nurses (RGN), an enrolled nurse (EN) and a nursing aid. Additionally, on CCU and the medical wards, there is the nurse officer (NO), a

deputy nursing officer (DNO) and a day nurse who all work on day duties. Organisation of care in CCU is by patient allocation system.

Furthermore, following transfer from CCU, the patients with MI are nursed in one of the 8 medical wards, 6 female and 7 male wards and 2 male and female wards. Each ward consists of about 30 to 33 beds. Each ward employs 18 nursing staff, consisting of 5 teams, each containing, 1 registered general nurse (RGN), an enrolled nurse (EN) and a nursing aid. Some medical wards organise care by day to day patient allocation system in which task centred care still prevails.

7. Gaining Access

7.1. Institutional access

In the absence of a Research Ethical Committee for the nursing division, on the 17th August 1999, I requested permission from the Chairperson of the Medical services at the local general hospital (Appendix B.1. p.444). The letter contained the theme and aims of the study which was being conducted under the supervision of the University of Hull, U.K.. I promised to adhere to the ethical issues regarding the informed consent and confidentiality. A research proposal was enclosed. At first I thought to include the 'nurse's role' in the title of the study. Thus, to collect data from the nurses and hospital chaplains, I passed on the same letter of request to the two Consultants in Medicine of the regional hospital in Gozo. This permission was granted promptly in writing on the 25th August (Appendix B.1.1. p.446) Similarly, I asked permission from the Director of Nursing Services on the 17th August 1999 (Appendix B.2. p.447) which was granted on the 27th August (Appendix B.2.1. p.449).

Before embarking on the pilot study, on the 15th March 2000, I sent a letter of information to all the medical Consultants working on CCU and the eight acute medical wards (Appendix B.3. p.450). Only one Consultant answered in writing (Appendix B.3.1. p.451). However verbal blessings came from four others whom I met in private clinics or in hospital. Similarly, I sent another letter of information to the Hospital Nurse Manager and the two Departmental Nurse Managers (Appendix B.4. p.452). Following verbal response on telephone, I received also in writing from one Departmental Manager, dated 1st September 2000 (Appendix B.4.1. p.453).

Furthermore, in the absence of a Director of the Institute of Health Care, on the 27th May 1999, I requested permission from the Coordinator of nursing and midwifery studies to recruit the nursing students for the test-retest of the research instruments (Appendix A.3. p.442). This request was repeated to the Director of the Institute of Health Care on the 17th July 2000. Permission was granted soon after (Appendix A.4. p.443).

7.2. Copyright access

I obtained permission from the authors of the established tools, the HAD scale (Zigmond and Snaith 1983) and JAREL SWB scale (Hungelmann et al. 1985). I sought permission in writing on the 27th May 2000 from Dr. Ruth Stollenwerk in the USA (Appendix A.1. p.436) from whom I received permission on the 28th June 1999. Following this permission, I communicated with the main author, Dr. Joanne Hungelmann who gave me permission also by e-mail letter on the 8th August 1999 (Appendix A.1.1. p.438). This support continued throughout the study by our communication through e-mails.

Although it took me some time to get through the NFER-NELSON company, responsible for the HAD scale (Zigmond and Snaith 1983), I managed to communicate with the Permissions Administrator on the 29th September 1999 (Appendix A.2. p.440). Permission was granted generously on the 20th October 1999 (Appendix A.2.1. p.441).

The abbreviated Mental Test Score is published in detail by (Jitapunkul et al.1991 and Hodkinson 1972). It is currently used in a local state rehabilitation hospital for older persons. According to Jacobson (1988), 'if an instrument is published in a journal, it is considered to be in the public domain and may be used without formal permission unless the author has retained the copyright' (p.17). Thus a verbal permission by the Head of the medical services was sufficient to use it in this study.

Fortunately, I was surrounded by a positive environment to launch this research study, both on patients and nursing students. This may be because nursing research in Malta is still in its infancy. Also, my history in nursing and education in Malta might have favoured me to be welcomed by the hospital and education authorities.

8. Ethical considerations

For a research study to be feasible, it should adhere to professional, legal and social obligations in respect to the research participants involved in the study (Polit and Hungler 1999, Burns and Grove 1997, Cormack 1997). To maintain these regulations, the role of an institutional ethics committee is to:

‘consider the ethical implications of all the research proposals which involve human subjects’ (Behi and Nolan 1995 p. 715).

Since the Research Ethics committee is still not available in the faculty of nursing, institutional permissions were granted as described in the previous subsection.

Additionally, this study sought to safeguard the following ethical issues, that is, informed consent, autonomy in participation, preservation of health, privacy, confidentiality and anonymity.

8.1. Informed consent, autonomy in participation

Participants have the right for informed consent (Ramos 1989, Nieswiadomy 1987, Burnard and Morrison 1994). Therefore, on recruitment, patients were asked to sign an informed consent form (Appendix F5., F5.1. pp.501-502). A copy of the signed form was given to patients on discharge home. Additionally, a covering letter was given to patients in Maltese, informing them about the aims of the study and the process of the longitudinal study (Appendices E.3. – E.6.1. pp.486). The same was done to the nursing students in the test-retest of the tools. A letter of invitation was given to them, informing them about the study and inviting them to participate (Appendix D.1. p.463).

The return of the completed questionnaires was considered as their consent to participate. Thus the participant's right to self-determination by informed consent was honoured (Fowler 1988). Additionally, freedom of participation was ensured. Although the contribution of the patients and nursing students was invaluable to the study, they were given the right to refuse to participate and were able to withdraw from the project at any time for any reason without compromising their status in the rehabilitation period or nursing education respectively.

8.2. Preservation of health

Moreover, collection of data by questionnaires and face to face interviews on vulnerable patients with first MI, may tax their physical health (Gift 1993, Munhall 1988). This concern was brought to my attention by McSherry (1999), a member of one of the expert panels, who participated in the content validity process of other research instruments, not used in this thesis:

‘My biggest concern is in relation to the number of questionnaires, measuring instruments that you are going to use to gather data from patients. Is there not a danger of overwhelming them?’

(Appendix C.5.1. p.458)

Consequently, only the recruitment process was carried out in CCU to allow patients to have enough time to rest during the acute phase in hospital. Appointments for home visits were made beforehand to minimize constraints as much as possible. Before recruitment, the patients were given an indication of the possible duration of the interviews and questionnaires.

This longitudinal design yielded new information to the nursing body of knowledge. However, both the qualitative and quantitative data were a means of recalling their distress caused by MI. Apart from the advantages for data collection completion, home visiting served also as a debriefing session. I used to apologise for having reminded them of such a bitter experience. However, I used to help them acknowledge their improvement in their recovery period and encourage them to persevere in their efforts (Egan 1990).

8.3. Privacy, confidentiality and anonymity

Patients' privacy was ensured during the interviews. During the recruitment process, I sought verbal permission which was granted by the patient to read his/her medical notes for the bio-chemical results and past history. Additionally, the first interview on the medical wards was done either in their room, if single-bedded, or in the ward manager's office. On discharge, following a trustful relationship, the family would welcome the visitor at home. However, the interview was carried out in privacy to allow self-disclosure of the patients' experiences (Morse 1991).

Additionally, the patient was informed about the coding system of the quantitative and qualitative data, not to be identified by name. Patients' identity number and location of residence were solely kept by me under strict confidentiality. During the test-retest of instruments, each student was given a code number, unknown to me. This was achieved by having two colleagues assisting me, who maintained the list sealed in an envelope (Appendix D.3. p.465) These lists were shredded after coding the quantitative data and recorded in the data base.

Furthermore, although the nature of data collection in this longitudinal study and test-retest threatened anonymity, both the patients and the nursing students were assured of confidentiality. I made sure that the data provided by informants was not used in any way that could cause adverse effects on the patient (Burns and Grove 1997). Hence, precautions were taken to ensure privacy of both patients and nursing students. Permission was granted by the patients to tape-record the interviews for better transcription. On completion of the

study, the patients were informed that the questionnaires will be shredded and the tapes erased.

It happened that one of the patients died two days after the interview in hospital. His family knew about this taped interview. A week later, his wife requested this tape as they wanted to treasure his voice in the last days of his life. I could empathise with the family during their bereavement. However, I felt that I still had to honour the contract performed between the patient and me. Thus, the family was informed about this decision and the tape was erased.

Moreover, the patients and nursing students were informed that their coded data would be used in the results (Smith 1992). The findings were reported in a dissertation form and submitted at the University of Hull, UK. Additionally, a copy will be placed for reference at the University of Malta for educational purposes.

Finally, I could say that a balance was maintained between the rights and obligations of the patients, nursing students and the researcher to ensure safety of the samples used (Malta Code of Ethics 1997).

9. The dual role of a researcher and data collector : Possible impact on the study.

The socio-economic characteristics of the researcher have been shown to influence the responses of the participants (Oppenheim 1998). To prevent contamination of results as much as possible, I was aware of my profile and reflected *in* and *on* my actions throughout the journey of the research process (Powell 1989, Schon 1987, Kemmis 1985).

During recruitment of sample on CCU and throughout all the data collection I wore the nurse's uniform. I took all the precautions possible to control infection, by changing the hospital uniform to travel to the patients' homes. This helped me to secrete the emblem which I usually wear on my shirt, indicating my membership in the Society. During the interview on spiritual coping strategies, where they mentioned their devotion to Rev. Preca, I tried to remain as neutral as possible. At the end of each interview, I reflected *on* the interview repeatedly to consider the possible impact I had on the data collection. Thus, as a reflexive practitioner, I tried to reflect *in* and *on* the research process (Johns 1994, Emden 1992, Jarvis 1992), that is during and following data collection to minimise interviewer bias.

As a data collector on the wards, I found myself between the nurses' interventions and the patient. As I interviewed the patients, they started asking several questions on rehabilitation following their MI. It appeared that the patients were not receiving enough information, or if they did, it seemed to be merely passing on of information in a one-way direction.

Consequently, questions were left to the end. Questions like appropriate diet, I used to answer them myself, supporting it by literature which was available on the shelving in the ward corridors, to which the patients hardly ever paid attention. Or else, I used to communicate with the occupational therapist, who provided them with a copy of rehabilitation handout with useful practical points.

Furthermore, some complaints were dealt through referrals. For example, a patient was noticed that she could not walk steadily. On telling me that nothing could be done to her

long standing arthritis, I realised the need for physiotherapy. Thus, I drew the attention of the night nurse and the patient was referred for physiotherapy with a positive outcome. Another person was found in agonising abdominal pain at 2.00 p.m. on the medical ward. It was later diagnosed as abdominal cramps due to antibiotic treatment. He had been in pain since the morning, and was awaiting medical assistance. I drew the attention of the nursing officer, who notified the doctor immediately.

After interviewing client (F5) at home, her daughter in law escorted me to my car. She talked to me about her need of financial help to cover the expenses of the client's son with special physical needs. Since this was the role of a social worker, she was referred to the social services department.

Throughout the course of data collection, I was highly aware of my dual role as a researcher and a nurse, as perceived by the patients. Hence, precautions were taken to give priority to the role of the researcher by first collecting the data and then giving them assistance regarding the follow-up appointments, use of medical treatment and clarification about certain medical terminology, e.g. angiogram, angioplasty and stress test. Additionally, the patients were referred to members of the multidisciplinary team accordingly, like cardiologist, dietician or occupational unit.

Furthermore, my age and maturity appear to have enhanced a trustful researcher-patient relationship. A middle aged male patient, on revealing to me the use and helpfulness of his concealed scapular, he stated:

‘I had longed to have the scapular of Mt. Carmel for years. It was given to me when I had the attack. I really appreciate it. Mind you if you were younger I wouldn’t have told you about it, because today’s youth ridicule these things. I feel powerful when it’s on me, I never put it off. It keeps me feel better. For me it’s a sacred object which reminds me of the close protection of Our Lady’.

(M42, 55 years)

Therefore, being of the same culture and religion may have helped patients to reveal the reality of their SCS. However, it could have also increased the social desirability.

Cormach (1998) states that in studying sensitive topics, persons tend to answer what they think is acceptable and not what they really felt about the matter at hand.

Finally, being a nurse lecturer, I introduced this study by telling them that I had been teaching on texts which contained research on foreign patients’ experiences of MI. Thus, the patients consented happily to give their contribution to nursing care. Additionally, during test-retest data collection, the students knew me very well at the university. However, the questionnaires were coded and the list of codes was kept sealed in the hands of two colleagues, who supervised the students during test-retest processes.

Following my decision regarding the suitable research design to answer the research question, I proceeded with the selection of the appropriate sampling technique and the research instruments as described in Chapter Four.

CHAPTER FOUR

Sampling Technique and Research Instruments

This chapter describes the target population, sampling technique and the instruments used to collect the quantitative and qualitative data.

1. Target population and sampling techniques

Polit and Hungler (1999) and Burns and Grove (1997) advocate the use of a sampling plan, whereby the strategies of selecting a sample is developed to increase representation of the target populations. According to Burns and Grove (1997), the sample must be like the target population to be studied. The target population is the entire population in which the researcher is interested, such as patients with first MI, to which the findings are generalized.

1.1. Target population

The target population of this study consisted of Maltese patients with first MI, aged between 40 –89 years (Mean=61.9 years). The accessible population, that is, the fraction of population to which I had reasonable access (Burns and Grove 1997) excluded those patients with MI who were admitted in the two private hospitals in Malta and those admitted in the regional state hospital in Gozo. Patients in Gozo had to be excluded because of time constraints to travel by ferry for data collection for five times. Additionally, those patients who were admitted to private hospitals might not have been representative of the target population, as generally, the poor are admitted to the state hospitals.

Consequently, precautions were taken to prevent sampling error, by providing an accurate picture of the population, by recruiting a sample which was representative of the population (Burns and Grove 1997). Thus, I consulted the statistician to calculate the largest sample possible to allow adequate statistical analysis and to be within my capacity to reach them for both quantitative and qualitative data collection in this longitudinal design.

1.2. Sample

Pathac et al. (1980) state that sampling procedures are of two major categories, probability and nonprobability sampling. Probability samples are characterized by objectivity and a random selection process. Objectivity in the selection process is a bias-free selection whilst a random process is a calculable process which allows generalization of results to the target population. Therefore, a probability, random sample increases representativeness, lessens systematic bias and sampling error (Polit and Hungler 1999, Burns and Grove 1997).

At first I intended to use the simple random sampling method. However, on reflection, I could foresee the problem of my inability to cope with an irregular rate of recruitment of patients. Consequently, I decided to select the sample by systematic sampling strategy, which is considered identical to simple random sampling (Polit and Hungler 1999). The calculation procedure was followed, that is, the population size was divided by the desired sample size, giving k , the size of the gap between the recruitment of patients (Polit and Hungler 1999, Burns and Grove 1997).

Power analysis suggested a sample size of fifty at (power of 0.8, $p=0.05$) (Polit and Hungler 1999). To compensate for the attrition rate, 70 patients were selected. The

population size over three years, provided by the Department of Health and Information in Malta (Appendix F.1. p.493), were 393 in 1996, 325 in 1997, 365 in 1998 and 308 in 1999 (Table 4.2). It was planned that the recruitment time would be over six months during the first 48 hours in CCU (T1), between June and December 2000. Thus, following elimination of the non-first MI patients, it was estimated approximately as $k=2$, leading to a selection of every second patient with first MI.

1.3 Statistical power analysis

Following analysis of 62 published nursing articles by Polit and Sherman (1990) few were found to report on the statistical power and they point out the risk of committing Type I and Type II errors in research. Type I error is when an alternative hypothesis (H_1) is falsely accepted, by wrongly rejecting a true null hypothesis (H_0). On the contrary, Type II error is when a false null hypothesis is accepted, by wrongly rejecting the research hypothesis (H_1) that a relationship between variables exist. Thus, the power of a statistical test is a function of three other parameters, namely, the significance level, sample size and effect size (Martin and Thompson 2000, Polit and Hungler 1999, Burns and Grove 1997, Cohen 1992, Polit and Sherman 1990).

Firstly, the conventionally accepted level for a Type I error is 0.05, that is being at risk of committing Type I error 5 times out of 100 (1 in 20). This may be achieved by increasing the power of the test by setting directional hypothesis tests, reducing the alpha from 0.10 (2 tailed) to 0.05 (one-tailed) test (Polit and Sherman 1990).

Secondly, a larger sample size, increases the power of a test and reduces the risk of making Type II error. This is overcome by increasing the sample size and increasing the power of the test, usually at 0.8.

Thirdly, the effect size may affect the power of the test. Effect size is a measure of how strong the effect of the independent variable is on the dependent (Polit and Sherman 1990). Although, this is difficult to be controlled by the researcher, its value can be computed, known as statistical power. The conventional standard power is 0.8. This means that the risk of committing Type II error is 0.20. Therefore, Martin and Thompson (2000) suggest that:

‘the compromise normally used to balance between type I and type II errors occurring is to set alpha at 0.05’ (p.25).

Consequently, before embarking on a research study, it is of utmost importance to estimate the statistical power to avoid committing a Type II error (Polit and Sherman 1990, Martin and Thompson 2000). Therefore, following consultation with the statistician in December 1998, I was guided by the directions provided by Polit and Hungler (1995, 1999) as depicted in Table 4.1.

Table 4.1. Statistical Power of sample size for statistical analysis of Mean Differences and Correlations.

	Sample size	Power	Effect size p = 0.05	Type of Effect size
Differences between two Means	50	0.8	0.8	Large
Correlations	50	0.8	0.4	Medium

Table 4.1. demonstrates an acceptable statistical power by the use of the recruited sample (n=51) following an attrition of 19 patients (27.1%) across time. Additionally, the sample was adequate to identify themes and categories through semi-structured interviews to support the quantitative data (Cormack 1997, Morse 1997, Sandelowski 1986).

1.4. Recruitment of sample

Recruitment of sample started on Thursday 13th July 2000, within the first 48 hours of admission to CCU and ended on the eve of the new millennium 2001. Every night I went to CCU to check the admission records of patients with MI. I cross checked this list by reading all the newly admitted patients' history to make sure not to miss any of them. By the help of the sample recruitment checklist (Appendix F.1.1. p.496), the Mental Test score (Appendix F.2. p.498), the systematic sampling list (Appendix F.3. p.499) and the Clients' Exclusion List (Appendix F.4. p.500), I selected every second patient, excluding a total of 68 patients (Appendix K.2., Tables K2.1- K2.4 pp.567-568). A total sample of 70 patients, who satisfied the following set of criteria were recruited, mean age of 61.9 years. The aim of this list was to have a homogenous group to control the number of confounding variables and reduce variability in patients' characteristics which may influence the interpretation of relationships between variables.

1.4.1. Inclusion criteria:

- a) aged 40 years and over,
- b) Swanton's (1998) adapted criteria for MI according to CCU in Malta,
 - pain for more than 30 minutes' duration,
 - new Q waves (less or equal to 0.04) – (debatable by CCU),
 - ST- segment elevations or depressions in at least 2 leads,
 - Serum Enzyme level of Creatinine Phosphokinase (CPK) elevated more than twice the upper limit of normal (normal level: 10-195 IU/l),
- c) Mental Test score of 8 onwards showing ability for retrospective data collection;
- d) Willing to participate,

- e) Able to hear a normal or emphasised speaking voice,
- f) Able to communicate in a meaningful conversation,
- g) Read a large-print words,
- h) Consenting for data collection at home following discharge,
- i) Hospitalised for a maximum of 9 days, that is staying in CCU up to 4 days (plus or minus 1 day) and up to 5 days (plus or minus 1 day) in the medical ward.

The characteristics of the recruited sample revealed that:

- The site of myocardial infarct of the majority of patients (n=30, 42.9%) was at the anterior aspect whilst (n=18, 25.7%) had a posterior infarct (Appendix K2, Table K2.6. p.570).
- The highest CPK presented was between 400-1000 iu/l (n=41, 58.6%) (Appendix K.2., Table K.2.9. p.571).
- The majority of patients (n=27, 38.5%) were treated in CCU for 4 days, whilst (n=20, 28.6%) stayed for 5 days in the medical ward (Appendix K.2., Table K2.9. p.571).
- Most of the patients, (n=34, 48.6%) stayed in hospital for 5-6 days, whilst (n=29, 41.4%) stayed for 7-8 days (Appendix K2, Table K2.10 p.572).

Furthermore, by the use of the Clients' Exclusion coding List (Appendix F.4. p.500) I excluded a total of 103 patients (Appendix K.2., Tables K2.1- K2.4. p.567-568), who did not meet the following criteria.

1.4.2. Exclusion criteria:

- a) aged less than 40 years,
- b) Gozitans and tourists/foreigners who could not be followed up during the first three months of recovery in Malta,
- c) Declared complicated MI by medical team in CCU,
- d) Illiterate patients,
- e) Hospitalised for more than 9 days,
- f) Treated in a medical ward and not in CCU,
- g) Transferred to a private hospital from CCU or medical ward,
- h) Discharged home directly from CCU.

The main reason for exclusion of patients were, past history of MI (n=14), tourists (n=14), illiteracy (n=13) and complicated due to additional medical disorders, such as renal failure (n=12) (Appendix K2, Table K2.5. p.569).

Thus, during a period of about 6 months, a total number of 241 patients were admitted with MI to CCU (Figure 4.1). It appears that these 6 months were the peak of admissions with MI, as the yearly admissions of patients with MI, supplied by Department of Health Information (2001), between 1996 and 2001 were around three hundred (Table 4.2.)

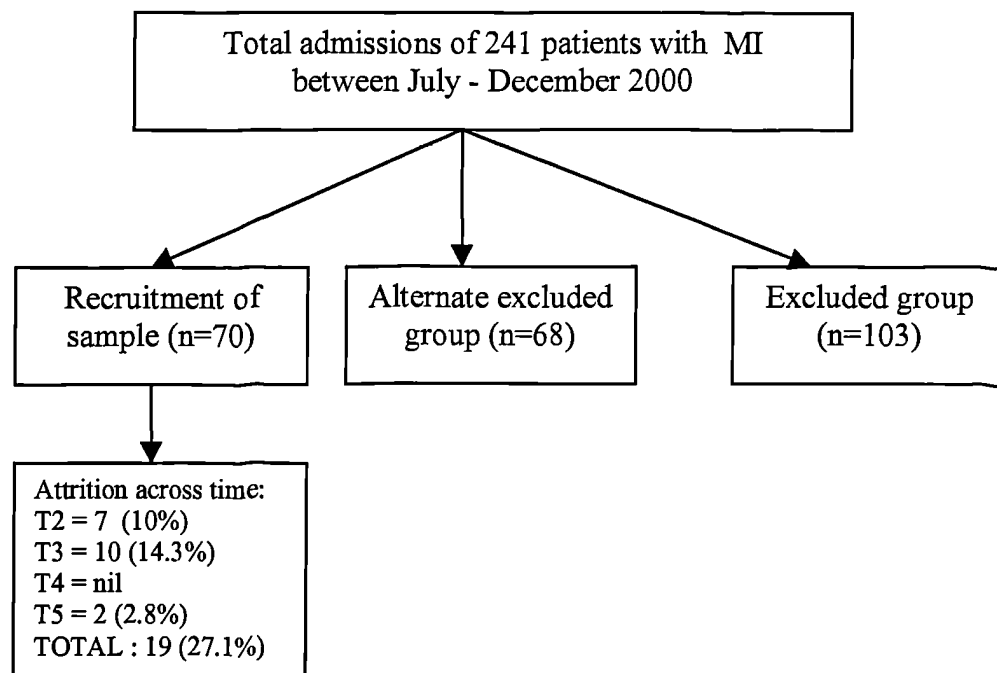
Table 4.2. Admissions of patients with MI at the local general hospital between 1996 and 2001.

Year of admission	Number of patients
1996	393
1997	325
1998	365
1999	308
2000*	177*
2001*	257*

*According to the Hospital Activity Analysis (HAA), Department of Health Information (2001), the total number of admissions in 2000 and 2001 is different from the previous four years. This is because in 2000, only 68% of HAA forms were returned whilst in 2001 the response rate was 69%.

(Distefano 2002- Appendix F.1. pp.493-495)

Figure 4.1. Summary of the process of recruitment and attrition rate of patients with MI



The majority of recruited sample had a score of 9 and over in the Mental Test Score (n=59, 80%), whilst the majority of the alternate group scored between 8.5 – 9.0 (n=42, 61.8%) (Appendix K2, Table K2.2. p.567).

Figure 4.1. demonstrates an attrition rate of 27.1% (n=19) by the third month of data collection (T5). It was found that the majority of patients lost were males (n=13, 18.6%). This is an acceptable proportion, as the majority of patients were males (n=46, 65.7%) (Appendix K2, Table K2.12. p.573). Additionally, the main reasons for attrition of patients were listed for Coronary Artery Bypass Graft (CABG) (n=5, 26%) and withdrew from the study for personal reasons (n=4, 21%) (Appendix K2, Table K2.13. p.573).

2. Research Instruments

The dearth of research on the spiritual dimension in coping adopted cross-sectional studies, using quantitative methods. Conversely, several studies utilized longitudinal designs to investigate the levels of anxiety and depression in patients with MI. Consequently, a longitudinal study was conducted which demanded the use of self-reported questionnaires to enable identification of fluctuations in the variables studied across time. In an attempt to overcome some of the limitations of questionnaires, two face to face interviews were performed to shed light on the relationships exhibited between the variables studied.

Literature identifies several advantages and disadvantages of questionnaires and interviews (Oppenheim 1998, Parahoo 1993). The main advantages of self-rated questionnaires are:

- low cost of data collection and processing,
- avoidance of interviewer bias,
- better expression of reality on personal issues, such as SCS and SWB,
- better control over anonymity and
- ability to reach a larger number of respondents from dispersed geographical areas.

In contrast, Oppenheim (1998) identifies the main advantages of questionnaires as follows:

- low response rates with consequent biases,
- high attrition rate of sample in a longitudinal studies,
- unsuitable for the illiterate and those with impaired vision clients, threatening a representative sample;
- inability to correct misunderstandings of statements;
- no control over the incomplete responses or reported by others; and
- no opportunity to combine this data with qualitative data, such as by face to face to face interview or observation methods.

Furthermore, Oppenheim (1998) claims that the advantages and disadvantages of interviews are almost a mirror-image of those of questionnaires. The use of interviews give the opportunity for:

- a higher response rate,
- lower attrition rate of sample in a longitudinal study,
- clarification of misunderstandings,
- overcoming incompleteness and communication problems and
- amalgamation with observation data collection.

However, it is argued that face to face interviews:

- are time consuming, reaching a smaller number of subjects,
- data may be contaminated by interviewer bias,
- inability to maintain anonymity and
- too expensive to reach a widely dispersed sample.

In an attempt to remain in contact with the patients across time, I visited the patients personally, thus overcoming some of the above disadvantages.

The instruments used in this study were of two types namely, the tools used for recruitment of sample and those used to measure the variables, which were of quantitative and qualitative types.

2.1. Recruitment Questionnaires

- 2.1.1. Mental Test score which is currently used in a local rehabilitation Geriatric Centre (Appendix F.2. p.498)
- 2.1.2. Sample recruitment criteria checklist (Appendix F.1.1. p.496)

2.2. Measures of variables by Qualitative methods

- 2.2.1. Semi-structured interview schedule : definitions of the terms spirituality and SWB (Appendix G.2. p.507)
- 2.2.2. Semi-structured interview schedule : The Use and helpfulness of spiritual coping strategies (USCS), (Appendix G.8. p.528)

2.3. Measures of variables by Quantitative methods

- 2.3.1. Demographic data questionnaire – (Maltese and English version), (Appendix G.1. p.505)
- 2.3.2. HAD scale (Zigmond and Snaith 1983) – (Maltese version), (Appendix G.5.1. p.517)
- 2.3.3. JAREL SWB scale in Likert form (Hungelmann et al. 1985) – (Maltese version), (Appendix G.3.1. p.509)

- 2.3.4. JAREL SWB adapted in VAS form (Bilingual version), (Appendix G.4. p.511)
- 2.3.5. Helpfulness of Spiritual Coping Strategies (HSCS) scale developed for the study (Appendix G.6. p.520)

2.1. Recruitment Questionnaires

2.1.1. Mental Test score (Appendix F.2. p.498)

The Mental test score is currently used in a local rehabilitation geriatric centre. It was based on the original mental tests of Jitapunkul et al. (1991) and Hodkinson (1972). It consists of ten statements which assess memory and orientation to time, place and person. Jitapunkul et al. (1991) consider the cut off line at a score of 8. The Mental Test was adapted by an additional name of an authority figure in Malta to statement no 9, that is the name of either the Archbishop or the President of Malta. This was done to address all the patients of various religious denominations. This test was used as a structured interview with the aim of assessing the remembering capacity and communication ability of the sample.

Literature suggests that MI occurs mostly in middle and old age (Fernsler 1999, Rose et al. 1994, Thompson et al. 1987). Additionally, in old age degenerative changes may lower recall capacity (Brandstadter and Greve 1994, Higgins and Ambrose 1994, Bernice and Neugarten 1979). For example, Ridley et al. (1979) investigated the extent of accurate recall of personal dates such as, those of marriage and births in family on a random sample of older women, aged 66-76 years. It was found that respondents provided exact answers to an average of 90% of the questions asked. Thus to enhance accuracy in patients' responses, only those patients who scored 8 and over were recruited (Appendix K2, Table K2.4. p.568)

2.1.2. Sample recruitment checklist (Appendix F.1.1. p.496)

This checklist consists of 10 statements based on the set of inclusion criteria, that is age, dates of admission to CCU, transfer to the medical ward and discharge home, medications, characteristics of MI, location of MI, past cardiac diseases and ability to participate in the study.

2.2. Qualitative methods

2.2.1. Semi-structured interview schedule exploring the definitions of the terms spirituality and SWB (Appendix G.2. p.507)

This semi-structured interview was conducted on the patients' transfer to the medical ward. This interview took approximately 30 minutes, out of which only Section 3 was used for this study, that is the definitions of spirituality and spiritual well-being (SWB). These definitions served as a background information for the patients' responses of SWB and use and helpfulness of spiritual coping strategies.

2.2.2. Semi-structured interview schedule : The Use of spiritual coping strategies (USCS) (Appendix G.8. p.528)

This semi-structured interview schedule consists of 21 open-ended questions. It explored the nature of each of the 20 strategies included in the Helpfulness of Spiritual Coping strategies (HSCS) scale (Appendix G.6. p.520) with an additional question to explore any other SCS used. Additionally, probing was done to discover their perceptions of why the respective SCS were found helpful. Both interviews were conducted in Maltese for better comprehension and expression of experiences. They were also audio-recorded and field

notes were taken along the interview. The transcripts were then translated into English by a panel of five persons.

2.3. Quantitative methods

Two established tools were used, that is JAREL SWB scale (Hungelmann et al. 1985) and Hospital Anxiety and Depression (HAD) scale (Zigmond and Snaith 1983). Additionally I developed the Helpfulness of spiritual coping strategies (HSCS) scale and Socio-demographic Data questionnaire for this study.

2.3.1. Socio-demographic Data questionnaire – (Bilingual version).

(Appendix G.1. p.505)

Following literature review, the demographic data questionnaire was developed to identify a set of personal characteristics of patients. The twelve characteristics were gender, age, past history of ischaemic heart disease or angina, marital status, class/occupational status, education, living alone/with others, relationship with God, drugs influencing mood states, location of residence in Malta and church attendance for religious practices before MI. These characteristics allowed the identification of differences in patients' groups such as, males and females.

2.3.2. The HAD scale (Zigmond and Snaith 1983) – (Maltese version)

(Appendix G.5.1. p.517)

Literature exhibits several types of measures of Anxiety and Depression, such as

- Spielberger's state and trait anxiety scale (Spielberger et al. 1983),
- Toth's Stress of Discharge Assessment Tool (Toth 1988),
- McNair Profile of Mood States (McNair et al. 1971).

On examining the complexity of these three tools, I decided to use the HAD scale (Zigmond and Snaith 1983) which appeared very easy to fill in a shorter span of time.

Constituents of the HAD scale (Zigmond and Snaith 1983)

The original HAD scale was developed in the U.K. by Zigmond and Snaith (1983). The HAD scale has two subscales which measure anxiety and depression. The tool consists of 14 items, seven for each subscale, whereby patients rate each item on a 0 to 3 point self rating scale. The scoring system ranged from absence of a symptom or the presence of positive features (scoring 0) to the maximal presentation of symptoms or the absence of positive features (scoring 3). Therefore, the higher the score, the higher the anxiety and/or depression.

Originally, the tool had 16 items, of which the internal consistency for the anxiety subscale, calculated by Spearman correlation test, was between 0.76 and 0.41 ($p < 0.01$) and that of the depression subscale was between 0.60 and 0.30 ($p < 0.01$). It was reported that two items, one from each subscale, which were weakly correlated, were removed, bringing the HAD Scale down to 14 items. No reliability data were presented of the final scale (Milne, 1992).

The HAD scale (Zigmond and Snaith 1983) underwent several criterion validity testing with the General Health Questionnaire (Lewis and Wessley 1990, Wilkinson and Barczak 1988) and was found more sensitive and simpler to complete. Additionally, its construct validity was proved stable by researchers, such as Moorey et al. (1991) who found stability in its dual factor structure when tested on sub samples of the a total of 568 patients with cancer. Furthermore, internal consistency was found high in various research, such as

Chiou et al. (1997), Abioudun (1994), Moorey et al. (1991) and Martin and Thompson (2000). Finally, Aylard (1986) confirmed the validity of the HAD scale when tested against the anxiety and depression sub scales of the General Health Questionnaire and the Irritability Depression and Anxiety scale. Thus the HAD scale was considered a reliable and valid measure of anxiety and depression in this study.

2.3.3. JAREL SWB scale (Hungelmann et al. 1985) – (Maltese version).
(Appendix G.3.1. p.509)

Since SWB is a highly subjective concept, I would have liked to develop a new tool on Maltese patients through grounded theory approach. However the dominance of Christianity in Malta would have yielded a tool, highly oriented towards religious well being (RWB).

In the literature, there are three American tools available, which measure SWB namely,

- Moberg's Social Indicators of SWB (Moberg 1979),
- Ellison and Paloutzian SWB scale (Ellison and Paloutzian 1982),
- JAREL SWB scale (Hungelmann et al. 1985).

Moberg's scale consists mostly of religious items and its use in research is minimal. Ellison and Paloutzian's SWB scale incorporates existential (EWB) and religious well-being (RWB) sub scales. It was often used by nurse researchers in USA, such as Fernsler et al. (1999) and Riley (1998), Mickley et al. (1992). Additionally, psychosocial and theological research made use of this scale and found it of good reliability and validity (Miller et al. 1998, Ellison and Smith 1991, Bufford et al. 1991 and Ledbetter et al. 1991, Ellison 1983). The tool appeared appropriate for this study, however, the findings of Kirschling and Pittman (1989), who tested the reliability and validity of Paloutzian and Ellison's SWB scale on a sample of 75 carers of terminally ill relative, led me decide on its exclusion.

Kirschling and Pittman (1989) found in USA that the items which specifically ask about God in the Religious Well Being scale (RWB) could not be answered by a non believer in the pilot study. An Islamic person found it difficult to answer the questions related to God within the context of her religious experience and beliefs. This could be due to cultural differences between the sample used with diverse religious denominations, as suggested by other studies (Miller 1995, Hunt and Wiklund 1987). Hanestad (1990) claims that cultural and linguistic sources of error may occur which may happen across national boundaries and within the same country.

Furthermore, some wording of the Existential Well-Being Scale, such as the statement “fulfilled and satisfied with life” was difficult to be answered as “fulfilled” and “satisfied” were reported to be different. Additionally, construct validity of the SWB scale against Bradburn’s Affect Balance Scale in an elderly population was impaired. Hence, I decided to select the JAREL SWB scale which amalgamates both the existential and religious components together and the word ‘God’ was mentioned only once, accompanied by ‘supreme power’ in another statement. Thus JAREL SWB scale appeared more applicable to this study as it is more open for both the believers and non-believers.

Constituents of JAREL SWB scale (Hungelmann et al. 1985).

The acronym JAREL denotes the first-name initials of the developers of the instrument (Hungelmann, Kenkel-Rossi, Klassen and Stollenwerk 1989). JAREL SWB scale was devised in the U.S.A. through grounded theory design, by the use of interviews and observations, on a sample of 31 adults, aged 65 to 85 years, with varied health status,

ranging from good physical health to terminal illness . The conceptual definition of SWB is:

‘ a sense of harmonious interconnectedness between self, others, nature, and Ultimate Other, which exists throughout and beyond time and space. It is achieved through a dynamic and integrative growth process that leads to a realisation of the ultimate meaning and purpose of life’.

(Hungelmann et al.1989 p.349)

The tool consists of 21 items, whereby subjects rate each item on a 1 to 6 point self rating scale. The possible range of scores is 0-144. Therefore, the higher the score, the higher the SWB of that particular subject.

Hungelmann et al. (1996) state that this scale identifies the characteristics of SWB which may “identify the person’s coping mechanisms or strengths”. The American English version of JAREL SWB scale consists of a 21 item Likert form scale, ranging from a minimum score of 1 for the absence of positive features or the presence of negative ones, to a maximum score of 6 for the presence of positive features or absence of negative ones. The tool had Cronbach’s alpha reliability coefficient of 0.85, established through test-retest method. Factor analysis resulted in three factors.

- **Factor I** consisted of Faith/Belief dimension such as spiritual beliefs, purpose in life, prayer, belief in a supreme power and life after death.
- **Factor II** contained Life/Self-Responsibility addressing lack of belief in a supreme power, difficulty in forgiving others and inability to accept change in life or to make decisions regarding one’s life.
- **Factor III** incorporated Life satisfaction / self-actualisation dealing with goal-setting, accepting life situations, loving relationships and self-esteem. Hungelmann et al. (1996) propose that a person with SWB is able to find meaning and purpose in the present life situations and to search for meaning and purpose in the future .

Moreover, reliability of the scale in an American-English speaking population demonstrated the instrument's positive utility. For example, Fulton (1992) obtained a Cronbach alpha coefficient of 0.81, suggesting that the instrument had internal reliability.

2.3.4. JAREL SWB adapted in VAS form (Bilingual version) (Appendix G.4. p.511)

Few studies were traced which used JAREL SWB scale (Hungelmann et al. (1985). Consequently, I decided to administer it in VAS form (Appendix G.4. p.511) to ensure reliability of results. The order of the statements were rearranged and the patients were not informed about the similarity between these two scales to prevent superficial responses. The visual analogue scale (VAS) is widely used to assess various concepts, such as pain (Harrison et al. 1996, Huskisson 1983, Price et al. 1983, Carlsson 1983,) anxiety (Vogelsang 1988), depression (Luria 1973, Aitkin 1969s), mood states (Fulton Picot et al. 1999), fatigue (Brunier and Graydon 1996) and clinical dyspnoea (Gift 1989b).

Polit and Hungler(1999) describe the (VAS) as a line, horizontal or vertical, representing the continuum of some experience. Gift (1989a) outlines the advantages of the VAS, that is, a very simple tool to use and construct, very sensitive, easily understood by patients, suitable for frequent and repeated use, and allows the use of numerical values by which statistical analysis may be computed.

Gift (1989a) revealed that vertical VAS is easier for subjects to use than the horizontal. However, when tried on the two patients interviewed before the construction of the tools, the horizontal line appeared easier for both patients. Consequently, I decided to use the horizontal line, 10cms/100mms long, equivalent to a score of 100 per line, with end anchor

points, from strongly agree to strongly disagree. The patient was requested to indicate their extent of agreement with the statements about SWB, by marking a cross at a point on the line for each statement. Abiding by Aitken (1969) guidelines, patients' responses were measured at the intersection of the cross, to the nearest millimeter, yielding to a score of 1 – 100 per line. The positive statements were measured from the strongly agree on the left side to the right, whilst the negative statements were measured in the opposite direction. To enhance accuracy, the same ruler was used throughout the four times of data collection.

To check reliability equivalence between the two scales, correlation between the original Likert form JAREL SWB scale and the VAS format, the non-parametric Spearman's rho coefficient was computed. Results showed strong positive correlation between the two scores, repeatedly over time as shown in the Table 4.3. Consequently, it was decided to use only the scores of the original JAREL SWB scale in the findings of this study.

Table 4.3. Correlation between JAREL SWB TOTAL and JAREL (VAS) SWB

JAREL SWB (VAS)	Time	n	Spearman r	2-tailed P value
Combined	T2	61	0.839**	0.000
	T3	53	0.885**	0.000
	T4	52	0.653**	0.000
	T5	51	0.842**	0.000
Religious	T2	61	0.757**	0.000
	T3	53	0.918**	0.000
	T4	52	0.719**	0.000
	T5	51	0.800**	0.000
Non-religious	T2	61	0.854**	0.000
	T3	53	0.843**	0.000
	T4	52	0.660**	0.000
	T5	51	0.856**	0.000

2.3.5. Development of the Helpfulness of spiritual coping strategies (HSCS) scale

Literature demonstrates few measures of the use of some coping strategies scales, such as,

- Jalowiec coping scale (Jalowiec et al. 1984),
- The Helpfulness of Prayer scale (Saudia et al.1991).

Jalowiec Coping Scale (Jalowiec et al. 1984) consists of emotion and problem-focused coping scales with minimal religious strategies. The Helpfulness of Prayer scale (Saudia et al.1991) measures only the helpfulness of prayer. Thus, I decided to develop a new scale with a balance between religious and non-religious coping strategies scale to enable assessment of spiritual coping strategies, including the religious.

2.3.5.1. Construction of HSCS questionnaire.

Several research texts and articles guided me in the development of the new questionnaire (Polit and Hungler 1999, Oppenheim 1998, Burns and Grove 1997, Cormack 1996, Spector 1994, Parahoo 1993).

The rules of Oppenheim (1998) were followed in the development of HSCS scale. The length should not be too long. However, Ferketich (1991) points out that ‘although a short instrument may be desirable, it must be of adequate length to represent the universe of interest’(p.166). The 20 SCS are spread on three pages with oversized lettering to simplify the reading for the older persons (Gordon and Stokes 1989). The last page consists of five empty slots to write down any additional personal coping method used. The front page includes the guidelines of how to respond the scale (Appendix G.6. p.520).

The scale appears to contain double-barreled statements, such as No. 3, *build/maintain a relationship with your friends, relatives*. This statement was meant to identify relationships with others, no matter whether they are their friends and/or relatives. Thus the essence of this SCS is in coping through relationships. Similarly, statement No 14, *relating to your relatives and friends by confiding in them*, the component measured is confiding in others.

The category 'not applicable' (X) was introduced in the helpfulness scale. This was discovered in the first pilot study with 20 students who discovered that if a SCS is not used, one cannot say that it was not found helpful by marking the (0) category.

Additionally, leading questions were avoided as the statements were all separate names of spiritual coding strategies.

Furthermore, to prevent ambiguity in the statements, the following were avoided, double negatives, abbreviations, overloaded words, such as 'regular'. To enhance understanding, the front page contained guidelines on how to fill in the questionnaire. Additionally, while on medical ward, before the first completion of HSCS, its layout was explained verbally to the patient. To overcome linguistic problems, the statements were worded in both English and Maltese languages. On reflection, I became aware that the patients may have answered either the Maltese or English versions separately or combined. However, being a new scale, which ever method used, the test-retest reliability testing revealed high Cronbach alpha coefficient. The lowest coefficient of 0.73 is that of the Maltese version.

According to De Vellis (1991) and Jacobson (1988), a coefficient of 0.70 may be acceptable for the exploratory use of instruments in the early stages of development. Finally, precautions were taken following the guidelines of Spector (1994) who puts

emphasis on the researcher's interpretation of the meaning of the variable under investigation. He claims that the meaning is reflected on the constructs of the self-report questionnaires. He identifies three possible components, known as variances by which interpretation of the meaning of the variable studied may be influenced namely, trait, method and error variances.

Firstly, **trait variance** is 'attributable to the construct of interest and is dependent upon the researcher's interpretation of the measured variance'(p.386). As discussed in the literature review, I paid great attention to investigate the use and helpfulness of spiritual coping strategies from a broader perspective. The existing literature tends to use the term spirituality interchangeably with religiosity. However, to ensure comprehension, I specified the operational definition of SCS as, positive oriented activities/thoughts based on humanistic values and principles which may or may not contain strategies based on religious beliefs which help the patient to cope and adapt to the situation of MI (Goddard 1995, Karns 1991, Mickley et al. 1992). Therefore, these coping strategies addressed also those which may be used by the non-believers. Furthermore, Factor analysis revealed two factors, namely religious and non-religious coping strategies.

Secondly, **method variance** refers to the systematic methodological influences during the course of data collection. As discussed in the previous chapter, I did my utmost to prevent bias in patients' responses, such as social desirability in their response. The use of a longitudinal design demanded self-report questionnaires for comparison purposes over time. However, since the patient was sent the self-report HSCS scale to complete it in privacy, sincerity in this personal sensitive ways of coping may have been improved.

Thirdly, **error variance** means random error of the scale due to the unreliability of the scale. As discussed in the pilot study and reliability of tools in the next chapter, the scale was scrutinized and underwent psychometric testing which revealed satisfactory results in its reliability stability and internal consistency.

2.3.5.2. Constituents of the Helpfulness of Spiritual Coping Strategies (HSCS) scale

The scale was founded on the nursing, psychological, sociological, philosophical, and theological literature. The Cognitive Theory of stress and coping (Lazarus and Folkman 1984) guided the formulation of the 20 coping strategies, considered as ‘cognitive and behavioural efforts’ (p.141) to manage the stress of MI (Folkman and Lazarus 1984). Although the theory proposes emotion and problem-focused ways of coping, the strategies were classified according to the Factor Analysis, which revealed the religious and non-religious types of coping. Additionally, the categories which measure the frequency and helpfulness of each strategy, were based on those on Jalowiec coping scale (Jalowiec 1987), that is the frequency and effectiveness of coping methods, ranging from (0 = never used/not helpful) to (3 =often used/very helpful).

The 20 strategies are all positive statements, as suggested by the pilot study on a group of 20 students, mean age of 27 years, prior to test-retest reliability analysis and as agreed by the 7 patients in the pilot study.

For each strategy, the subjects were asked how often that item was used and how helpful it was. The frequency and the helpfulness of each strategy were each scored on a Likert scale varying between 0 (not used / not helpful) and 3 (frequently used / very helpful). The Helpfulness Likert scale was added with another category (X = not applicable) to mark the

strategy when it was not used. This was suggested during the pilot study of 20 nursing students, who asserted that if one does not use the strategy, one cannot state that it was not helpful, by marking (0 = not helpful). So the higher the score, the more useful is the item as a coping strategy.

Frequency	Helpfulness
0 = never used	X = not applicable
1 = seldom used (at least once in 6 months/year)	0 = not helpful
2 = sometimes used (at least once in a month)	1 = slightly helpful
3 = often used (at least once daily)	2 = fairly helpful
	3 = very helpful

At the end of the scale, an open-ended section for any other additional SCS was included.

The HSCS scale consists of two factors, that is the religious and non-religious coping strategies (Tables 5.7., 5.8.)

The four versions of the HSCS scale achieved a Cronbach's alpha reliability coefficient of :

- 0.81 - English version,
- 0.73 – Maltese version,
- 0.79 - Back-translation
- 0.82 – Bilingual version.

The reliability coefficients are greater than 0.70, demonstrating acceptable reliability coefficients for new tools (De Vellis (1991, Stromborg 1988). It is noted that the bilingual version may produce a diversity in the patients' choice of responding either version or both versions together. However, since the bilingual version achieved the highest Cronbach alpha value, it outweighs the said diversity.

3. Correlations between the two scales of Frequency and Helpfulness of HSCS scales

Test-retest reliability analysis, discussed in the next chapter showed high correlation between the categories of frequency and helpfulness of SCS. This was also supported by patients' data over time, demonstrated in the following Tables (4.4 - 4.6.)

Table 4.4. Spearman's correlation between Frequency and Helpfulness of spiritual coping strategies of HSCS scale.

Helpfulness of Spiritual Coping Strategies	Time	n	Spearman r	2-tailed P value
Combined	T3	53	0.873**	0.000
	T4	52	0.894**	0.000
	T5	51	0.918**	0.000
Religious	T3	53	0.934**	0.000
	T4	52	0.899**	0.000
	T5	51	0.931**	0.000
Non-religious	T3	53	0.760**	0.000
	T4	52	0.815**	0.000
	T5	51	0.738**	0.000

Table 4.5. Spearman's Correlation between Frequency and Use+Helpfulness of spiritual coping strategies of HSCS scale.

Use +Helpfulness of spiritual coping strategies	Time	n	Spearman r	2-tailed P value
Combined	T3	53	0.981**	0.000
	T4	52	0.967**	0.000
	T5	51	0.977**	0.000
Religious	T3	53	0.977**	0.000
	T4	52	0.977**	0.000
	T5	51	0.986**	0.000
Non-religious	T3	53	0.935**	0.000
	T4	52	0.953**	0.000
	T5	51	0.940**	0.000

Table 4.6. Correlation between **Helpfulness TOTAL** and **Use+Helpfulness** of spiritual coping strategies of HSCS scale.

Use +Helpfulness of spiritual coping strategies	Time	n	Spearman r	2-tailed P value
Combined	T3	53	0.970**	0.000
	T4	52	0.969**	0.000
	T5	51	0.978**	0.000
Religious	T3	53	0.985**	0.000
	T4	52	0.969**	0.000
	T5	51	0.975**	0.000
Non-religious	T3	53	0.934**	0.000
	T4	52	0.948**	0.000
	T5	51	0.916**	0.000

Tables 4.4 – 4.6 demonstrate consistent high correlations between frequency and helpfulness of SCS. Following consultation with the statistician, I decided to amalgamate both scores into one score, named as ‘use and helpfulness’ of spiritual coping strategies (SCS). Therefore, ‘SCS’ stands for ‘use and helpfulness of spiritual coping strategies’ in the following chapters.

Following the selection of the appropriate research instruments which were designed in English, testing them for reliability and validity was deemed necessary in order to safeguard the rigour of the study as described in Chapter Five.

CHAPTER FIVE

Reliability and Validity of Research Instruments and Data

This chapter outlines the systematic process of augmenting the reliability and validity of the research instruments and data analysis to enhance the rigour of the research study.

This chapter discusses the translation process into the Maltese language, the test-retest reliability of the three quantitative research instruments in the English, Maltese and back-translation versions. Additionally, an outline is given about the process undertaken to enhance the validity of the instruments and data analysis.

1. Theoretical background of reliability

Polit and Hungler (1999) define reliability as the degree of consistency with which it measures the variable under investigation. Therefore, reliability is the extent to which a measure administered once, but by different people, produces equal results. Similarly, if the variable is measured repeatedly, the scores are consistently similar. Alternatively, a reliable instrument means that the measures reflect accurately the true scores of the variable studied. Consequently, the essence of reliability is in the consistency and accuracy of the tool to measure the variable (Burnard and Morrison 1994). Furthermore, Polit and Hungler (1999) recommend three major aspects of reliability of a tool, namely stability, internal consistency and equivalence.

Stability of a measuring instrument refers to the extent to which the same results are obtained on repeated assessments. This is identified by test-retest reliability, whereby the same test is administered twice on the same sample. Then, results are compared by

computing the reliability / correlation coefficient. Polit and Hungler (1999) list some disadvantages, namely, variables, such as mood states and attitudes which may change over time, irrespective of the stability of the tool. Also, remembering the contents of a tool may influence the resultant scores. Thus, the administration of the different versions of the three tools tested was repeated after a period of three weeks to prevent recall of statements. Additionally, the tool was given only to the sample at the time due to be filled in and then collected soon after its completion. It is noted that reliability coefficients tend to be higher for short-term retests than for long-term retests, that is, more than one to two months (Hicks 1999).

Internal consistency or homogeneous reliability of an instrument is defined as the extent to which all of its subparts are measuring the same characteristics of the variable studied. The most common test is the estimation of Cronbach alpha coefficient, which has been used over 50 years. The alpha serves as an index of homogeneity of the phenomenon under investigation (Cronbach 1951). The higher the value, the higher the degree of internal consistency of a tool. Cronbach alpha coefficient was computed for the HAD scale, JAREL SWB scale and HSCS scale.

Equivalence of a measure is done by inter-rater or inter-observer reliability to estimate whether the scores obtained by two data collectors are equivalent (Goodwin and Prescott 1981). An index of equivalence may be produced either by computing the correlation coefficient or by calculating the degree of agreement between the markers. Equivalence may also be estimated when two alternative parallel forms of a single instrument are implemented, such as comparing the results and correlation coefficients between the

JAREL SWB scale in its original Likert-form scale against the same scale in Visual Analogue Scale (VAS) format (Table 4.3.).

2. Use of samples of nursing students for Test-Retest Reliability of Instruments

Polit and Hungler (1999) assert that the reliability of an instrument is not a fixed entity. It is claimed that the reliability of a tool is a property of the tool when administered to a certain sample, under certain conditions, rather than the property of the specific tool itself.

Ideally, test retest of the following three instruments was supposed to be carried out on patients with first myocardial infarction along the continuum of the recovery period.

However, I was limited to reach this ideal. The fact that test-retest of the tools in various versions demanded a large number of patients, it was impossible to find such a sample.

This would have been worsened by the poor return of questionnaires and attrition rate during the test-retest of the various versions of instruments. Thus, for practical reasons, I decided to select cohort groups of students to participate in this study, bearing in mind that some studies investigated stress, religiosity and spiritual well-being on college students, such as Puskar et al. (1999), Fulton (1992), Thomson (1991), Fehring et al. (1987), Ellison (1983).

Fulton (1992) investigated spiritual well being of baccalaureate nursing students and faculty members in USA by the use of JAREL SWB scale. A purposive sample of 225 students and 41 faculty staff, aged 19 – 64 years was used. It was found that demographic variables were not related to scores of SWB. A significant difference between scores of students and faculty members was found. The difference lay in type of school and age of samples. Protestant and Catholic nursing schools had higher score, whilst the increase in

age was related to higher scores of JAREL SWB, suggesting spiritual maturity in faculty members . Fulton (1992) concluded that JAREL SWB scale had a Cronbach alpha coefficient of 0.81 suggesting that it is a 'reliable instrument for persons who are 19 years old and older' (p. ii).

Ellison (1983) conducted test-retest of Paloutzian and Ellison's spiritual well-being (SWB) scale on a sample of 206 students from three religious oriented colleges in the USA. Two factors emerged, that is existential well being (EWB) and religious well-being (RWB). The structure of two factors was reinforced by another test-retest of the scale on another 100 volunteering students in a university, containing atheists and believers of different age, gender and education.

Fehring et al. (1987) conducted two separate studies in an attempt to investigate the relationship between SWB and psychological mood states in response to life change. The first study recruited a convenience sample of 95 freshman nursing students, aged 17-27 years. The second study selected a random sample of 75 students, aged 18-28 years. Paloutzian and Ellison's SWB scale and the Beck Depression Inventory (BDI) were used. It was found that life change may cause a degree of depression among college students. Additionally, existential well being (EWB) was inversely related to SWB suggesting that individual's sense of meaning and purpose in life seems to enhance maintenance of low levels of depression more than a personal relationship with God/ Ultimate other.

Therefore, SWB appears to be a possible mediating factor in coping with depression in life even in young age. Therefore, the use of nursing students in the study, made it possible to check the stability, internal consistency and factor analysis of the tools. Additionally,

students were used also for criterion related validity in which the frequency and helpfulness scales of spiritual coping strategies in the HSCS scale were tested against an external criterion, that is spiritual well-being in the JAREL SWB scale (Hungelmann et al. 1985), which is considered as an internal resource of coping (Thomson 2000, Riley 1998, Landis 1996).

While acknowledging the limitations of the convenience sample used in this test-retest procedure, I recommend further testing of the instruments by using the data of the sample of the study across time. This sample is more representative of the target patient population and older age groups.

3. Translation process of the original HAD scale (Zigmond and Snaith 1983), JAREL SWB scale (Hungelmann et al. 1985) and HSCS scale prior to reliability testing.

3.1. The problem of illiteracy in Malta

According to the Malta Central Office of Statistics (1999), it is reported that the rates of illiteracy in Malta have been decreasing since 1948. In 1995, the illiteracy rate was still relatively high as follows:

- 10.3% in the (40-49) years age group,
- 8.4% in the (50-59) years age group,
- 11.3% in the (60-69) years age group and
- 26.6% in the (70 years and over).

This list infers an average of 14.15% of illiteracy in the Maltese population aged 40 years and over. It is noted that 12.6% of patients (n=13) were excluded because of illiteracy (Appendix K.2., Table K2.5. p.569). Thus the population of patients admitted to CCU with MI during the six months recruitment is representative of the Maltese population.

Moreover, in 1998, out of a random sample of 599 persons,

- 46.7%, aged 16 years and over, were capable of reading Maltese, whilst only
- 16.4%, aged 16 years and over, were able to read basic English.

Therefore, a higher percentage of Maltese persons were found able to read Maltese language. Consequently, the translated versions of the above three instruments gave the opportunity to:

- make the scales applicable and comprehensive to the Maltese patients,
- enable the inclusion of a higher percentage of the total population to participate,
- yield a more representative sample, with the possibility of generalisation of results,
- compare the results with the limited published research findings.

Currently, no objective tools exist in the Maltese language to measure anxiety, depression, spiritual well-being and spiritual coping strategies. Therefore, this study used two established tools, that is, the HAD scale, developed by Zigmond and Snaith (1983) in the United Kingdom (UK) and JAREL SWB scale, devised by Hungelmann et al. (1985) in the United States of America (USA). However, Sechrest et al. (1972) contend that instruments developed in foreign countries could cross cultural boundaries when applied to another country, such as Malta.

The HAD scale had already been translated successfully into other languages including Chinese language (Chiou et al. 1997), Nigerian language (Abioudun 1994) and Arabic languages (Malasi at al. 1991, El-Rufaie and Absood, 1987). In contrast, no translation of the JAREL SWB scale was traced in the literature. This was confirmed also by Dr. Joanne Hungelmann, the author of the scale (Appendix A.1.2. p.439).

Furthermore, the HSCS scale, founded on the literature, was developed in English and then translated into the Maltese language. These tools underwent a rigorous translation process which was conducted by the assistance of a panel of experts in linguistics.

3.2. Constituents of the Maltese Language

Aquilina (1985) affirms that the Maltese language is Semitic in nature, that is originating from the Hebrew, Phoenician and Arabic languages. Furthermore due to the settlement of various ethnic groups in Malta, such as the Arabs, English, French, Italians, Romans and Sicilians, the Maltese language is composed of a mixture of foreign languages. The Maltese vocabulary, demonstrates the origin of various words found in the Maltese language such as:

- *ruh* (soul) from *ruah* in Hebrew,
- *bongu* (good morning) from *bonjour* in French,
- *bonswa* (good evening) from *bonsoir* in French,
- *kejk* for *cake* in English and *ners* from *nurse* in English,
- *knisja* (church) from *kanisja* in Arabic,
- *arja* (air) from *aria* and *natura* (nature) from *natura* in Italian,
- *blata* (rock) from *balata* in Sicilian.

3.3. Translation Framework (Chetcuti 1975)

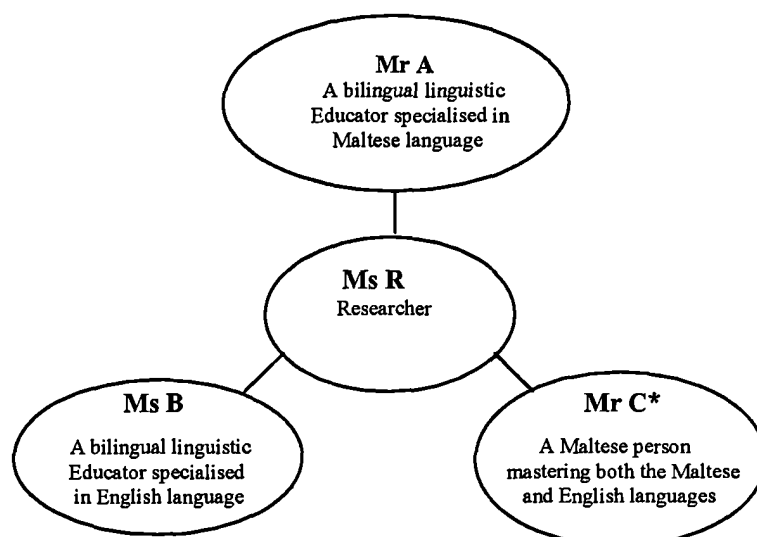
To achieve the optimal accuracy in the Maltese translation and to safeguard the reliability and validity of the original tools, the set of guidelines for Maltese Translation (Chetcuti, 1975) was used, supported by those of Sechrest et al. (1972). Chetcuti (1975) recommends that firstly, the whole meaning of the original text is to be understood well before attempting the translation into Maltese.

Secondly, it is the meaning of the text which is to be translated and not word/phrase for word/phrase. This is because every language has its own idioms which could be expressed differently, by various languages. Sechrest et al. (1972) points out that since ‘idioms never translate properly’, it is advised to ‘attempt to ensure that when idioms are used in a translation they are equivalent in meaning to the idioms used in the original’ (p.45). Thus precautions were taken while translating the idiomatic construction. This is clearly seen from the statement No 9 of HAD scale, *“I get a sort of frightened feeling like ‘butterflies’ in the stomach”*. Fortunately, the Maltese language provides another idiom for this statement, *“Inhoss sens ta’ bizgha u nhoss tferfir fl-istonku”* which has the same meaning as *“butterflies in the stomach”*, meaning *‘I am tensed and afraid’*. Additionally, the American English statement No.16 of JAREL SWB scale *‘I am pretty well put together’*, which was quite difficult to interpret, was translated well by a similar Maltese idiom *‘inhossni f’posti f’hajti’* which means, *‘I feel a sense of completeness’*.

Thirdly, the translated text is to be presented in a clear, simple and comprehensive way by using everyday spoken language. Finally, Chetcuti (1975) recommends that the translation should be written in the appropriate Maltese Language in the way it is spoken by the Maltese population at the time. Therefore, to abide by these guidelines, a team of three experts in linguistics, was set up to work in collaboration with the researcher (Figure 5.1, 5.2.)

3. Translation process of HAD scale (Zigmond and Snaith 1983), JAREL SWB scale (Hungelmann et al. 1985) and HSCS scale.

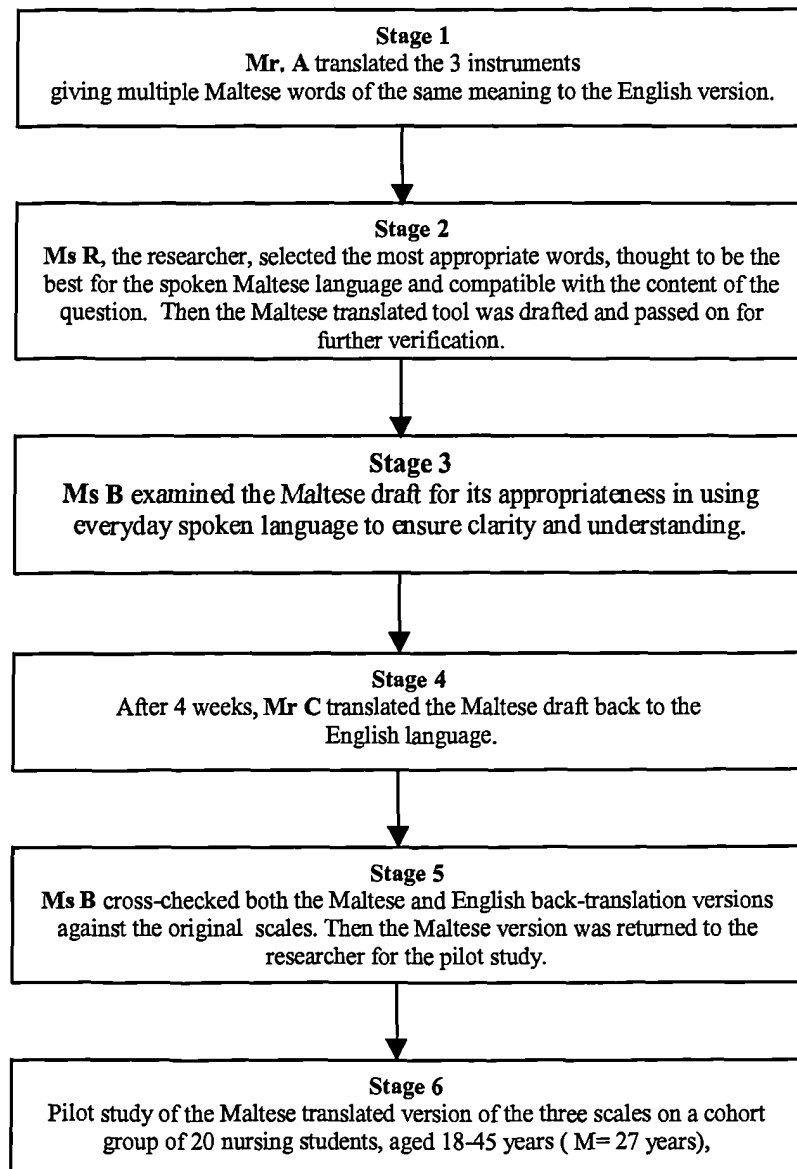
Figure 5.1. The three-member expert panel in linguistics in collaboration with the researcher



* **Mr. C** was not associated with the translation phase to prevent bias in the back translation (Streiner and Norman, 1989).

The pilot study revealed that the HAD scale statement No 8. '*I feel as if I am slowed down*' translated to '*Inhossni qieghed/a inbatti*' was misunderstood. The word *inbatti* was not completely understood by all the students. This could be because, the word *inbatti* which means *slowing down* is not currently in common use. Additionally, it was misread for *inbati* meaning *suffering*. Consequently, the word *inbatti* was altered to *incedi*, *slowing down* which was then comprehended by respondents of all age groups (Baldacchino et al. 2002).

Figure 5.2. The six stages of the Maltese translation process



The pilot study revealed also a problem in the translated JAREL SWB scale. This was in the three Likert categories that is, moderately agree *naqbel ftit*, moderately disagree *ma naqbilx ftit* and strongly disagree *ma naqbilx hafna*. Although these categories met the academic translation, they did not reflect every day spoken language. Thus, after approval by the expert panel, the three categories were reviewed and translated as *naqbel mhux hazin*, ‘moderately agree’; *ma tantx naqbel*, ‘moderately disagree’ and *ma naqbel xejn*,

‘strongly disagree’. No difficulties were encountered in the translation of the English version of the HSCS scale.

Having the three versions in hand, the original, Maltese and back-translation of the three scales underwent statistical analysis for reliability and validity testing.

4. Test-retest reliability testing of research instruments in the English, Maltese and back-translation versions

4.1. Reliability testing of the Hospital Anxiety and Depression (HAD) scale (Zigmond and Snaith 1983) in the English, Maltese and back-Translation versions

The HAD scale is a well-validated and reliable measure of anxiety and depression originating in the United Kingdom. Three different groups of nursing students participated in this reliability testing procedure. First, the groups of students were sent a letter of invitation to participate in the study (Appendix D.1. p.463). A letter of information was given for both the first and second test of the tool (Appendix D.2. p.464). To safeguard confidentiality, two other lecturers were involved to maintain secret coding of the students and to supervise the students to prevent them from influencing each other (Appendix D.3. p.465).

4.1.1. Samples participating in the Test-retest process of the HAD scale

The HAD scale in the English (Appendix G.5. p.516), Maltese (Appendix G.5.1. p.517) and back translation versions (Appendix D.4. p.466) were administered separately to the following three different groups.

- a) The Maltese version of the HAD scale was tested and retested in December 1998 on a cohort group of 52 final year students undertaking the Diploma in Nursing course. The group consisted of 12 males and 40 females, all in the age range between 20 and 45 years. The first test was completed on the ninth week of Semester I, whilst the retest was conducted three weeks later, just before Christmas recess.
- b) The original (English) version of the HAD scale was administered on the following year, on a cohort group of 55 final year nursing students undergoing the Certificate in Nursing course. The group incorporated 15 males and 40 females aged between 20 to 42 years. Again, the test and the retest were carried out in November 1999, on the fifth week of Semester I, with an interval of three weeks between the test and the retest.
- c) The back translation of the HAD scale was completed by a cohort group of 33 final year students (6 males and 27 females, all between 20 and 32 years). The test and the retest were carried out in November 1999, on the fifth week of Semester I, with an interval of three weeks between the test and the retest.

It is noted that had the same group been used in the test-retest of the three versions, comparison of results would have been better. Additionally, had a sample of patients been used, the levels of anxiety, depression, SCS and SWB may have been more applicable to the older sample used in the main study.

The statistical analyses of the three scales were performed using the Biomedical Data Package Release 7, often referred to as BMDP (Dixon, 1992). Program 3D was used to calculate Spearman's correlation ρ . Program 4F was used for cross-tabulations to calculate Pearson's χ^2 statistic.

4.1.2. Statistical Analysis of the Hospital Anxiety and Depression (HAD) scale in the English, Maltese and back-translation versions.

Reliability testing of the HAD scale was performed on the English version, the Maltese version and the back-translation. The **stability** of the scale was performed by test-retest reliability of the three versions, using cross-tabulations of each item (pre values with post values), all of which gave highly significant values of chi-squared χ^2 ($p < 0.0001$, $df = 9$) or each of the three versions and for all groups together (Appendix H.1., Table H.2. p.535). These cross-tabulations also yielded high values for the Kappa (κ) measure of reliability and for Spearman's coefficient (ρ) of correlation ($\kappa \geq 0.8$ and $\rho \geq 0.9$ for most items of anxiety and depression in all three versions. This shows excellent agreement between the test and retest.

Therefore, this analysis showed that the test-retest reliability of the Maltese version of the HAD scale is very satisfactory and compares very well both with the original and with the back translation.

4.1.3. Internal Consistency of the Anxiety and Depression Subscales

The internal consistency of the anxiety and depression sub scales in the three versions of the HAD scale was examined statistically using Cronbach's alpha for Anxiety sub scale, for Depression sub scale, and for Anxiety and Depression sub scales together (Appendix H.1., Tables H.1. – H.5. pp.535-538).

Table 5.1. Summary of Cronbach alpha for Anxiety, Depression and Anxiety / Depression sub scales together.

Versions of HAD scale	Anxiety Cronbach alpha	Depression Cronbach alpha	Anxiety and Depression Cronbach alpha
Maltese	0.79	0.70	0.85
Original	0.73	0.45	0.70
Back-translation	0.74	0.51	0.77

In all cases, it seems that the anxiety sub scale showed more internal consistency than the depression sub scale. The internal consistency of the depression sub scale was also found to be satisfactory in the Maltese version (Cronbach alpha = 0.70). Comparison of these results with the English original could not be done as its results were not traced in the literature (Baldacchino et al. 2002). Therefore Table 5.1. confirms that the Maltese version of the HAD scale is a reliable tool to monitor states of anxiety and depression.

4.2. Reliability testing of the JAREL Spiritual Well Being scale in the English, Maltese and Back-Translation Versions.

The JAREL SWB scale was selected because the items address SWB of both the believers and non-believers. Although 95% of the Maltese population are recorded as Roman Catholics (Gouder 2000), it was deemed necessary to address the SWB of Maltese patients with different religious affiliations (Appendix K.1., Table K.1. p.566) and the non believers. Thus, the reliability testing of the JAREL SWB scale was of utmost importance before using it on the Maltese population.

4.2.1. Samples participating in the test-retest process of the JAREL SWB scale

The JAREL SWB scale in the English (Appendix G.3. p.508), Maltese (Appendix G.3.1. p.509) and back translation versions (Appendix D.5. p.470) were administered to the same three cohort groups of students used for the HAD scale, after which the three versions underwent statistical analysis.

4.2.2. Test-retest reliability of the items in the three versions of the JAREL SWB scale.

The parameter Kappa (κ) and Spearman (ρ) correlations were calculated for each item for each version of the JAREL SWB scale, and for the three versions together (Appendix H.1. Table H1.3., p.537). It can be seen that these parameters are quite high for the Maltese and the back translation versions. The cross-tabulation of each item (pre versus post) yielded a highly significant value of χ^2 ($p < 0.0001$) for the Maltese and back translation versions (Appendix H.2., Table H.2.7. p.535)

For the Maltese version, the correlations between pre and post responses for every item are all above 0.82. The correlation between the sum of the pre and post variables in the Maltese version is 0.99. These high values for ρ and κ imply a high test-retest reliability of the Maltese version of the JAREL SWB scale.

Similar high values Spearman's (ρ) and Kappa (κ) were also obtained for the back translation and for all three groups together. For the English version, however, the correlations were generally lower, but the correlation between pre and post values was still quite satisfactory at a value of 0.72.

4.2.3. Internal Consistency of the JAREL SWB scale.

The internal consistency of the three versions of the JAREL SWB scale were examined statistically using Cronbach's alpha. These are calculated separately for the three different versions of the JAREL SWB scale, and for all the three groups together (Appendix H.2., Table H.2.8 p.541).

Table 5.2. Summary of Cronbach alpha for the three versions of JAREL SWB scale taking pre and post values separately.

Version of JAREL SWB scale	Pre-values	Post- values
	Cronbach alpha	Cronbach alpha
Maltese	0.78	0.77
Original	0.78	0.82
Back-translation	0.76	0.72
Three versions together	0.79	0.79

Therefore, the internal consistency of the JAREL SWB scale was found to be very satisfactory in the Maltese version. This was demonstrated by the acceptable value of Cronbach's alpha (0.77), which is comparable to 0.85 obtained by Hungelmann et al. (1985) in the original scale.

4.3. Reliability testing of the Helpfulness of Spiritual Coping Strategies Scale (HSCS) in the English, Maltese, back-translation and bilingual versions.

4.3.1. Sample participating in the test-retest process of the HSCS scale

The four versions of the HSCS scale were administered on the same cohort group of nursing students undertaking the Certificate in Nursing course, during the first semester. The group consisted of 40 females and 15 males, age range of 20-42 years. The test-retest sequence commenced with the bilingual version of the HSCS scale, conducted in the first week of October 1999. An interval of three weeks elapsed between the test and retest and the following three other versions so that memory recalls were kept to a minimum. The test-retest of the four versions was completed in mid-January 2000. To enhance individual responses, the students were supervised in class by a colleague and me. Since I developed the tool, my presence was necessary in order to clarify any misunderstood terminology.

If a subject filled in the questionnaire without giving a score to some items, the missing values were recoded as zeroes. Conversely, if a subject was not present for the test or the retest of a given version, he/she was excluded from the analysis of that version. Out of a total of 55 persons available, the number included in the analysis varied between 49 and 54 subjects for the four versions.

4.3.2. Statistical Analysis of the HSCS scale in the English, Maltese, back-translation and bilingual versions.

Reliability testing of the HSCS scale was performed on the English version, the Maltese version, the back-translation(Appendix D.6. p.471), the bilingual version (Appendix G.6. p.520) and on all the four versions taken together (Appendix H.3., Table H.3.12. p.545)

The test-retest reliability of these four groups is examined using cross-tabulations of each item (pre values with post values) for both the frequency and helpfulness variables. Each of these four versions gave highly significant values of chi-squared (χ^2) ($p < 0.0001$) for most of the items. These cross-tabulations also yielded reasonably high values for Spearman's coefficient of correlation ρ between test and retest. A correlation lying in the range between 0.5 and 1.0 signifies good concordance between test and retest for a given item. In fact, ρ was greater than 0.5 for both frequency and helpfulness simultaneously in 10, 8, 7 and 12 items in the four groups respectively. Similarly the correlation between frequency and helpfulness was larger than 0.5 for the test and retest simultaneously in 10, 11, 11 and 17 items respectively. It seems therefore that test-retest reliability was generally higher for the bilingual version of the HSCS scale.

4.3.3. Internal Consistency of the HSCS Scale.

Table 5.3. Summary of Cronbach alpha for the four versions of HSCS of the retest Helpfulness scale

Versions of HSCS scale	Helpfulness scale Cronbach alpha
English	0.81
Maltese	0.73
Back-translation	0.79
Bilingual	0.82
Four versions together	0.79

Table 5.3. shows that the bilingual version obtained the highest Cronbach alpha. Additionally, the test-retest reliability and the internal consistency were both satisfactory for the different versions of the HSCS scale.

5. Inter-rater reliability of the Qualitative data

Goodwin and Prescott (1981) refer to inter-rater reliability as an estimation of the degree to which two or more independent raters, are consistent in their judgements about data collection and analysis. In this study, the search for themes and categories of both interviews was performed by the researcher and two other nurses, who were acquainted with research on the spiritual dimension in nursing care. My colleagues were given a random sample of 17 transcripts (33.3%). The three met together at the same time and found an agreement of 95.6 % for the themes generated from the definitions of the terms spirituality and spiritual well being. Similarly, 94.8% agreement was obtained from the themes which emerged from the spiritual coping strategies interviews. The percentage of agreement was calculated by dividing the number of agreements by the total number of agreements and disagreements (Polit and Hungler 1999). Following a lengthy discussion, a consensus of 100% was reached on the list of themes as described in Chapter Seven.

6. Validity of quantitative and qualitative Tools

Polit and Hungler (1999) define validity as the ability of the instrument to exactly test what it is supposed to be measuring. It is emphasized that reliability and validity of a tool are dependent on each other. Thus if a tool is inaccurate and inconsistent in measuring the variable under investigation, it cannot be a valid tool whilst an unreliable tool cannot be a valid tool. Conversely, Polit and Hungler (1999) argue that a reliable tool cannot be a valid tool, if its structure does not consist of valid indicators of the variable studied. For assessment of validity of quantitative tools, Polit and Hungler (1999) propose four major aspects:

- face validity,
- content validity,
- criterion-related validity,
- construct validity.

It is noted that since I made use of two established tools, the HAD scale (Zigmond and Snaith 1983) and JAREL SWB scale (Hungelmann et al. 1985), this discussion focused on the new HSCS scale developed for this study.

6.1. Face validity and Content validity

Face validity refers to whether the instrument appears to measure the variable studied, when compared to the research question and the aims and objectives of the study. Although this was done and was seen as acceptable, the tool underwent further assessments for validity.

Content validity tests the adequacy of the content area being measured (Polit and Hungler 1999) This is ‘established by showing that the test items are a sample of a universe in which the investigator is interested’ (Cronbach and Meehl 1955 p.282). To enhance content validity, first I explored the experiences of two patients with first MI and their use and helpfulness of spiritual coping strategies during hospitalization. On the 20th May 1998, I carried out an unstructured interview with a 64 year old male patient with 17 years of education. Following transcription of that interview, a week later, on the 28th May 1998, I interviewed a 42 year old female patient with 10 years of education. These two interviews and the literature review helped me to structure the HSCS scale and also to plan the strategy for the translation of the tools and interviews. Secondly, I passed the draft of the new questionnaire through a thorough examination of a panel of experts.

A multidisciplinary panel of 10 experts from the fields of nursing, theology, pastoral care, philosophy, psychology and sociology, local and foreign, males and females, were recruited. The religious affiliation of the panelists were six Roman Catholics and four Christians. The panel consisted of :

- a male Protestant hospital chaplain from the U.K.,
- a female Catholic pastoral carer from the U.K.,
- a nurse researcher in Christian spirituality from the U.S.A.,
- two nurse researchers in the spiritual dimension in care from the U.K.,
- a nurse researcher in the spiritual dimension in nursing education from Malta,
- an ethicist, a sociologist, a psychologist and a theologian from Malta.

The process started by sending a letter of invitation to the panel of experts to participate, dated 27th May 1999 (Appendix C.1. p.454). Following consent, which was mostly sent by e-mail, a package was sent to the panelists consisting of :

- a letter of information (Appendix C.2. p.455),
- aims and objectives of the HSCS tool (Appendix C.3. p.456),
- demographic data sheet of Expert panel(Appendix C.4. p.457),
- feedback sheets for comments and suggestions for amendments(Appendix C.5.1. p.458).

The panel of experts sent me feedback on the wording of statements, such as *admiring* nature was changed to *appreciating* nature, *Holy Communion* was reduced to *Communion* to incorporate also the Christians' spiritual coping. All the members agreed on the 20 statements of spiritual coping strategies. It was suggested that an empty slot be introduced for an additional strategy of individual patients. Furthermore, it was recommended to state on the questionnaire:

'The World view from which the questions are being asked (e.g. Judeo-Christian, New Age, Moslem)'. This is because 'World view is not the same as World religion, but World views support religion'
(Lanig 1999, Appendix C.5.2. p.459).

Additionally, Keighley (1999) commented that:

‘The theological underpinnings are all Christians.....for the main part. Given the population and age range you are most likely to be dealing with, this may not be a problem. However, in terms of analysis and interpretation this will be very important’. (Appendix C.5.3. p.460)

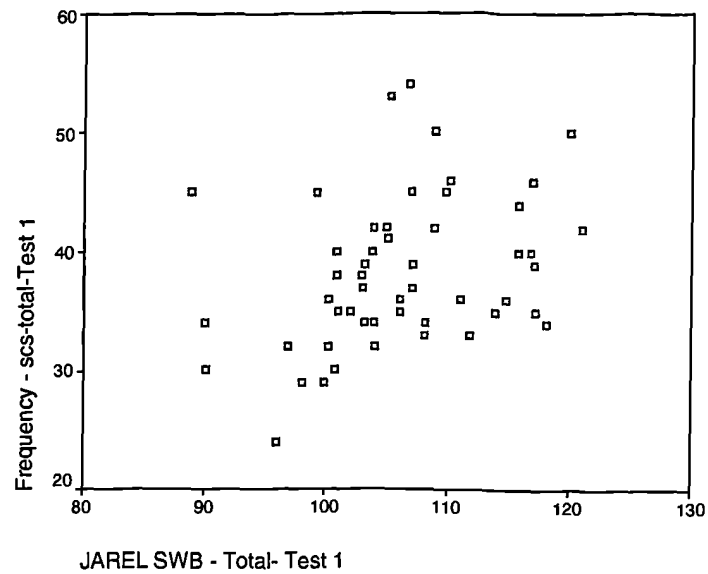
The recommendations were taken on board and the scale was amended accordingly (Appendix G.6. p.520). Thus, apart from the English language corrections and some modifications requested, there was 100% agreement on the content of the tool which contributes towards the validity of the questionnaire.

6.2. Criterion-related strategy for validity testing of HSCS scale

Another strategy to check the validity of the tool is **criterion-related strategy**. The aim is to establish a relationship between the HSCS and some other criterion, such as the scores obtained from JAREL SWB scale. Knapp (1985) points out that the criterion against which the obtained test scores are to be validated should be a higher-status operationalisation of the same construct and not of some other construct. Thus, since the JAREL SWB scale is an established tool used in this study, it was selected to test the scores with those of the new tool's scores.

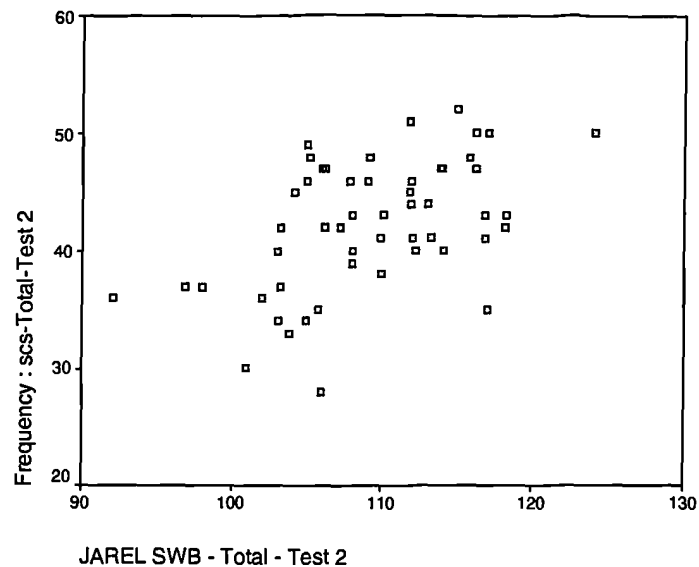
Literature suggests that spiritual well-being is an internal resource of coping (Riley 1998, Jenkins and Pargament 1995, Carson et al. 1988). Thus, since both scales are Likert scales, ordinal data, the frequency and helpfulness of spiritual coping strategies were correlated by the non-parametric Spearman's rho coefficient. Both scales were administered as test-retest to a group of 52 second year Diploma nursing students in October 1999, with a span of three weeks in between the test and retest. A positive relationship was revealed between the two scores as follows,

Figure 5.3. Spearman's Criterion related correlation between JAREL SWB and Frequency of SCS (Test 1)



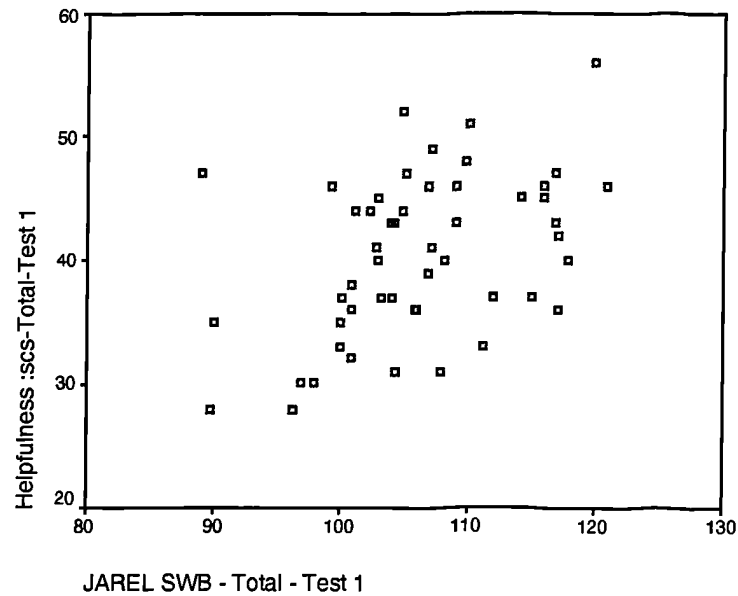
Correlation between JAREL SWB Test 1 and Frequency of SCS, Spearman's $r = 0.400^{**}$, $p = 0.004$.

Figure 5.4. Spearman's Criterion related correlation between JAREL SWB and Frequency of SCS (Test 2)



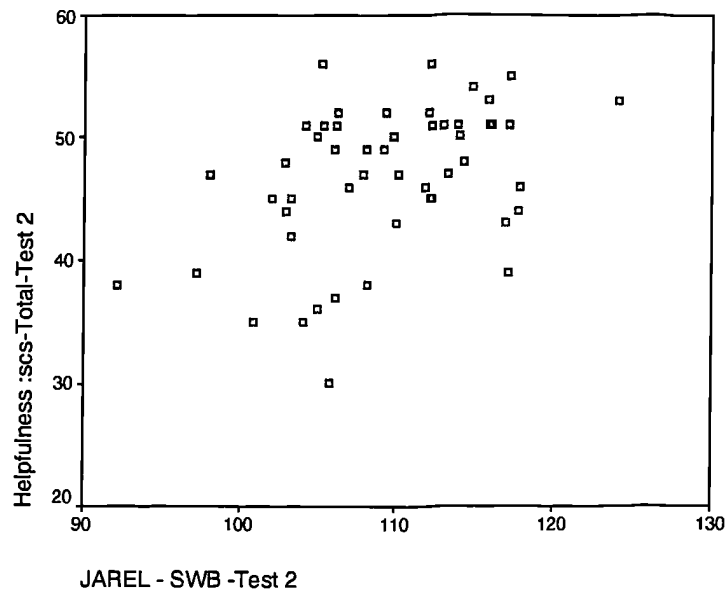
Correlation between JAREL SWB Test 2 and Frequency of SCS: Spearman's $r = 0.473^{**}$, $p = 0.000$.

Figure 5.5. Spearman's criterion related correlation between JAREL SWB and Helpfulness of SCS (Test 1)



Correlation between JAREL SWB Test 1 and Helpfulness of SCS :
Spearman's $r = 0.422^{**}$, $p = 0.002$.

Figure 5.6. Spearman's criterion related correlation between JAREL SWB and Helpfulness of SCS (Test 2)



Correlation between JAREL SWB Test 2 and Helpfulness of scs :
Spearman's $r = 0.382^{**}$, $p = 0.002$.

Figures 5.3 – 5.6 demonstrate an acceptable positive relationship between the spiritual coping strategies measured by HSCS scale and SWB assessed by JAREL SWB scale as both scales are oriented towards spiritual coping. It is acceptable because, following evaluation of the measurement of SWB scores by Ellison and Paloutzian's SWB scale, Ledbetter et al.(1991) identified the liability to obtain low SWB scores in high scoring individuals, such as a religious group. Additionally, these correlations are between two sets of results obtained by two different but related tools. Therefore, these positive significant correlations support the validity of the newly developed tool (HSCS) for this study.

7. Construct Validity by Factor Analysis

Polit and Hungler (1999) recommend to test the validity of the tools by calculating its **construct validity**. Construct validity identifies the factor analysis, that is the theoretical components of the tools which address the variable under investigation (Ferketich and Muller 1990, Rew et al. 1988). The three instruments underwent factor analysis in the test-retest procedures.

Factor analysis with oblique (direct oblimin) rotation was first performed on the items in a given subscale. Only those factors with eigenvalues larger than 1 were retained. On examination of the scree plot of the eigenvalues, it could be decided whether the number of useful factors may be reduced further. If the largest eigenvalue is larger than, for example, two times the second largest eigenvalue, it would be safely to retain one factor. Cronbach's alpha is usually highest under these conditions, that is, when the underlying dimension of the subscale is 1 (Appendix H.1., Tables H.1.3 - H.1.5. pp.537-538).

7.1. Construct Validity : Factor Analysis of the Maltese, original and back-translation versions of the HAD scale (Zigmond and Snaith 1983)

Factor analysis revealed that the largest eigenvalue of the *post* anxiety items, was at least 2.5 times greater than the second eigenvalue. In addition, there was one secondary factor for each version. In the one factor solution for the *post* anxiety variables, all seven items had high factor loadings (> 0.5) in the original and the Maltese versions of the HAD scale. Therefore, the anxiety subscale was represented by one factor, thus leading to a good reliability value of Cronbach alpha of 0.79.

Table 5.4. The two Factors of the HAD scale : Anxiety and Depression

HAD scale. Factor 1 : Anxiety (Cronbach alpha of 0.79)	
1. I feel tense or 'wound up'	
3. I get a sort of frightened feeling as if something awful is about to happen	
5. Worrying thoughts go through my mind	
7. I can sit at ease and feel relaxed	
9. I get a sort of frightened feeling like 'butterflies' in the stomach	
11. I feel restless as if I have to be on the move	
13. I get sudden feelings of panic	
HAD scale. Factor 2 : Depression (Cronbach alpha of 0.70)	
2. I still enjoy the things I used to enjoy	
4. I can laugh and see the funny side of things	
6. I feel cheerful	
8. I can sit at ease and feel relaxed	
10. I have lost interest in my appearance	
12. I look forward with enjoyment to things	
14. I can enjoy a good book or radio or TV programme	

However, a different picture was exhibited in the *post* depression variables (Appendix H.1., Table H.4, p.538). It was found that only the Maltese version showed a reasonably high value ($2.62/1.10 = 2.38$) for the ratio of the largest two eigenvalues, having also a secondary factor. This was demonstrated in the one factor solution for the *post* depression

variables, where the items had loadings >0.5 on the factor. Therefore, for the Maltese version, the depression subscale appeared to have an underlying dimension of 1, thus leading to a reasonable value for Cronbach's alpha of 0.70.

Similar findings were exhibited when the *pre* items of a given subscale were considered instead of the post items. Since there were high correlations between pre and post values of each item, the pre item and its corresponding post item were found to load always on the same factor.

7.2. Construct Validity: Factor Analysis of the Maltese version of JAREL SWB scale (Hungelmann et al. 1985)

Factor analysis was first performed on the items of JAREL SWB scale, retaining only those factors with eigenvalues greater than 1. The scree plot of the eigenvalues of the different groups demonstrated that two eigenvalues would suffice to describe the variation in the 21 items of the JAREL SWB scale. Therefore, the JAREL SWB scale consisted of two factors which were also substantiated by cluster analysis (Appendix H.2. Table H.2.9. p.642).

The correlation structure of the items in the JAREL SWB scale was clarified further using cluster analysis of variables. In this technique, the items were reordered so that items with high correlations were grouped together (Appendix H.2., Table H2.10. p.543), showing that the sorted and shaded correlation matrix for the 21 JAREL SWB items were composed of two distinct clusters.

The first cluster of items was *existential well being* as it described mainly the relationships with self and others, meaning of life, life satisfaction and life after death. Additionally, the

second cluster was oriented towards *religious well being*. The items described mainly the participants' belief in God and religious practices.

Table 5.5. Factor No.1 of JAREL SWB scale produced by Factor Analysis.

JAREL SWB scale. Factor 1 : Existential well-being (Cronbach alpha = 0.79)
3. As I grow older, I find myself more tolerant of others' beliefs
4. I find meaning and purpose in my life
9. I am able to receive and give love to others
10. I am satisfied with my life
11. I set goals for myself
13. I am satisfied with the way I am using my abilities
15. I am able to appreciate differences in others
16. I am pretty well put together
19. I accept my life situations
Additional statements: Factor 1 : Existential well-being
17. I prefer that others make decisions for me
21. I cannot accept change in my life

Table 5.5 demonstrates the two statements which were not identified by Factor Analysis.

These statements were added to Factor 1 as they appear to be associated with the existential well being component. Thus further factor analysis is suggested using patients' data.

Table 5.6. Factor No.2 of JAREL SWB scale produced by Factor Analysis.

JAREL SWB scale. Factor 2 : Religious well being (Cronbach alpha = 0.76)
1. Prayer is an important part of my life
2. I believe I have spiritual well-being
5. I feel there is a close relationship between my spiritual beliefs and what I do
6. I believe in an afterlife
8. I believe in a suprcmc power
12. God has little meaning in my life
14. Prayer does not help me in making decisions
20. Belief in a supreme being has no part in my life
Additional statements: Factor 2 : Religious well-being
7. When I am sick I have less spiritual well-being
18. I find it hard to forgive others

Table 5.6. exhibits the two statements which were not identified by Factor Analysis. These statements were added to Factor 2 as they appear to be related with the religious component. Thus further factor analysis with patients' data is recommended.

The structure of two factors was consistently found across the three versions. The two factors also had good reliability with Cronbach alpha values of 0.79 and 0.76 respectively for the Maltese version as compared to the value of 0.77 when the 21 items of JAREL SWB scale are taken together. The correlation between factors 1 and 2 was found to be,

- 0.13 in the Maltese version,
- 0.10 in the original English version,
- 0.04 in the back translation, and
- 0.18 when all the groups are considered together (Appendix H.2., Table H.2.9, p.542).

Therefore, this high correlation renders the Maltese version a valid tool to assess the levels of SWB of patients with MI.

7.3. Construct Validity : Factor Analysis of the new HSCS scale

Factor Analysis demonstrated that the frequency and helpfulness of a given item were quite highly correlated and are practically interchangeable (Appendix H.3., Table H.3.12. p.545).

The scree plot of the eigenvalues showed that two eigenvalues would be enough to describe the variation in the 20 items of the HSCS scale and so only eigenvalues above 2.0. were retained. Therefore, the HSCS scale consisted of two factors (Table 5.7).

Table 5.7. H.S.C.S. scale Factor 1 – Religious coping strategies

HSCS: Factor 1: Religious coping strategies
1. Personal Prayer
2. Relationship with God
4. Pray with others / group
6. Spiritual / Religious objects
8. Religious music / program on radio / TV
10. Reading spiritual inspirational texts
15. Attending church for religious practices
18. Trusting in God, hoping that things will get better
19. Receiving communion

Table 5.8. HSCS scale : Factor 2 –Non religious coping strategies

Factor 2 – Non –religious coping strategies
5. Discuss difficulties with one with MI
7. Seeing positive side of situation
9. Living day by day hoping things will get better
11. Accepting MI
12. Finding meaning and purpose live through MI
16. Self-reflection as a means of identifying your potentials and strengths
17. Helping others as a means of giving love / peace to others
Additional statements: HSCS -Factor 2 : Non-religious coping strategies
3. Build, maintain relationships with relatives and friends
13. Appreciating the beauty of arts e.g. music, paintings and handcrafts
14. Relating and confiding in relatives and friends
20. Appreciating nature, e.g. sea, sun, plants and flowers

Table 5.8. demonstrates the four statements which were not identified by the Factor Analysis. Since HSCS tool is new, and merits further factor analysis with patients' data, these statements were added to Factor 2, as there is no apparent relationship with the religious component.

The first cluster of items included the *religious coping strategies*, based mainly on the participants' attitude towards religion and belief in God. Conversely, the second cluster

comprised the *non-religious coping strategies* related to humanistic coping strategies, oriented towards relationship to self and others.

Consequently, it was sufficient to extract two factors in the factor analyses of the separate versions of the HSCS scale. The two factors extracted were rotated obliquely, using direct oblimin rotation for easier interpretation. These factor analyses were computed on the *helpfulness* scales in the retest only for each version separately and for all four versions taken together (Appendix H.3, Table H.3.16 p.552). Additionally, both factors had acceptable reliability alpha values (Table 5.9)

Table 5.9. Reliability alpha values of the two factors of the HSCS scale

Versions of HSCS scale	Factor 1 Religious coping Cronbach alpha	Factor 2 Non-religious coping Cronbach alpha
English version	0.82	0.74
Maltese version	0.77	0.59
Back-translation	0.79	0.71
Bilingual version	0.78	0.73
Four versions together	0.79	0.70

Furthermore, the correlations between Factor 1 and Factor 2 were as follows:

- 0.21 in the English version,
- 0.09 in the Maltese version,
- 0.16 in the back translation and
- 0.16 in the bilingual version, and
- 0.15 when all the groups are considered together.

The two dimensional structure of the HSCS scale was parallel with that of the JAREL SWB scale, described by two factors. Therefore, the four versions of the HSCS scale appear to be a valid tool to assess spiritual coping strategies in Maltese patients.

8. Validity of Qualitative Data

Literature suggests various strategies, by which rigour in qualitative data is maintained and trustworthiness / validity of data is established (Krefting 1990, Glaser and Strauss 1967).

Validity of qualitative data means that the findings reflect reality and the meaning of the data are accurately interpreted (Andrews et al. 1996, Avis 1995, Hinds et al. 1990). The qualitative tools' validity may be assessed by their credibility, transferability, dependability and confirmability (Polit and Hungler 1999, Lincoln and Guba 1985).

8.1. Credibility of qualitative data

Credibility refers to confidence in the truth of the data. This may be enhanced by prolonged engagement, triangulation and examination by peers and sample.

8.1.1. Prolonged engagement allows the data collector to have sufficient time to learn the culture and build trust with the sample. The fact that I am Maltese and had worked in CCU and medical wards, I was familiar with the Maltese culture and recovery process of patients with MI. Additionally, having met the patients on CCU and informed them about the aims of the study, a trustful relationship was built in CCU and was sustained over the first three months after discharge.

8.1.2. Triangulation

Triangulation is the use of multiple methods within a single study of a common phenomenon/a (Hinds 1989). There are four types of **triangulation**, that is, data, investigator, theory and method triangulation (Morse 1991, Duffy 1987, Sullivan Mitchel

1986). Polit and Hungler (1999) contend that the aim of triangulation is to produce convergence of data to reveal the truth. *Data* triangulation is the use of several samples to explore the same variable. This multiple sources of data enhance data analysis by identifying similar or different phenomena and those which may or may not change over time. (Mitchell 1986)

Investigator triangulation occurs when more than one person collect and analyse the data. Duffy (1987) states that triangulating the investigators removes the potential bias ensuring greater reliability in the data collection and analysis.

This study utilized theory and method triangulation. *Theoretical* triangulation makes use of more than one theory to interpret the data (Duffy 1987). The subjective perspective of spiritual well-being and spiritual coping strategies triggered me to use two conceptual frameworks that is, Cognitive Stress and Coping Theory (Lazarus and Folkman 1984) complemented by the *Numinous* Experience theory (Otto 1950). This enhanced the development of the HSCS scale and interview schedules and interpretation of results.

Methodological triangulation is the use of at least two methods, usually quantitative and qualitative, to address the same research question (Morse 1991). In this study, the relationships between variables, identified by quantitative data, were supported by qualitative data, for better interpretation, through semi-structured interviews.

Methodological triangulation was also implemented by parallel data collection of spiritual well-being. This was done by the use of the translated JAREL SWB scale in Likert form and (VAS) format, which exhibited high correlation of results, as discussed earlier.

8.1.3. Peer and sample examination

Peer and sample examination allows checking of the collected and analysed data (Krefting 1991). This enhances interpretation of data, giving credibility to the qualitative findings. Since the interviews were conducted in Maltese, for better communication and expression of experiences, a sample of ten English translated transcripts, two from each translator, were reviewed by the two members of the expert panel of linguistics, who confirmed that they reflected the ‘personal testimonies of the patients’ experiences’ (Appendix C.7. p.462). Additionally, checking of the data was done by two colleagues, acquainted with research on spirituality, who contributed towards the inter-rater reliability of data analysis. Furthermore, the patients were given the transcripts of their personal interview to check for its validity. They were requested to make amendments as necessary (Tables 5.10 and 5.11).

Table 5.10. Content validity of transcribed interviews approved by patients.

Reading of Transcripts	n=53	
	No	%
Read by the researcher to patient	45	84.9
Read by patient to researcher	1	1.9
Read by patients alone	7	13.2
TOTAL	53	100

Table 5.10 shows that the majority of transcripts (84.9%) were read by me to the patient as requested by the patients during my home visit.

Table 5.11. Response rate of returned interview transcripts from the sample.

Approval of transcripts' content by patients	n=53	
	No	%
Return of signed validity forms and transcripts	47	88.7
Verbal approval	5	9.4
No response	1	1.9
TOTAL	53	100

Table 5.11 shows that the majority of patients (88.7%) approved in writing by returning the signed Content Validity form (Appendix E.6. p.485). Minimal amendments were made. Following approval of the content of the transcripts, they were translated by a panel of five translators.

8.2. Transferability

Sandelowski (1986) explains that transferability is met when its findings are applicable to contexts outside the study situation and when the readers acknowledge the findings as meaningful and applicable to their own experiences. Also, Krefting (1990) notes that transferability is the ability to generalize the findings to a larger population. Koch (1993) points out that apart from the appropriate methodology used, such as sampling technique, transferability to other settings or groups depends upon the extent to which the research report is described in detail. This allows the readers to apply the data to other contexts. This study provides detailed account of analysis and supports the quantitative findings by direct quotations for better interpretation and applicability to other situations.

The findings may be generalised to the target population because the random sample used had acceptable statistical power of 0.8 with large and medium effect size at alpha of 0.05, (Table 4.1.). Thus the risk of committing Type I and Type II errors was minimised.

8.3. Dependability

Dependability refers to the stability of data over time and over conditions. This may be achieved by a consistent and a logical development of the analysis procedure. This is demonstrated in this study by the sequence of coding themes through which categories were created and presented rationally. Also, review of the data analysis by an external person minimizes bias and enhances consistency of findings over time. This was attempted by another two persons who analysed a sample of the qualitative data independently. Then a consensus was reached on the final categories which emerged out of the data as discussed in the previous chapter on reliability of findings.

8.4. Confirmability

Confirmability refers to the neutrality of the data, that is, having data free from bias. This may be overcome by agreement between two or more independent persons interpreting the data as outlined in the inter-rater reliability earlier.

The results of the various tests described in this chapter revealed the preliminary reliability and validity of the instruments. This will contribute towards the rigour of the study whereby the findings will be more liable to reflect the variables under investigation, that is what the tools were intended to measure. Consequently, having reliable and valid tools in hand, I moved on to collect data followed by data analysis as described in Chapter Six.

CHAPTER SIX

Data Collection and Analysis Techniques

The aim of the study is to identify relationships between spiritual coping strategies (SCS) and anxiety, depression, spiritual well being (SWB) and personal characteristics of Maltese patients with first MI, during hospitalisation and the first three months after discharge. To enhance interpretation of results, two semi-structured interviews were conducted to explore the definitions of the terms spirituality and spiritual well being and discover the patients' rationale for the helpfulness of spiritual coping strategies in coping with MI.

This chapter describes briefly the pilot study and the main study data collection, followed by data analysis techniques and ways of presentation of findings.

1. Pilot study

A pilot study is a small-scale version, a trial run of the major study conducted to refine the methodology (Polit and Hungler 1999, Burns and Grove 1997). The aim of the pilot study is to:

- obtain information for improving the data collection plan and
- assess the feasibility of the plan.

1.1. Process of pilot study

Since the study consisted of both quantitative and qualitative instruments, I wanted to ensure the feasibility of data collection. Oppenheim (1998) recommends that 'questionnaires have to be composed and tried out, improved and then tried out

again'(p.47). This study included both the development of the new HSCS scale and the translation of all questionnaires into the Maltese language. Therefore, the questionnaires were pre-tested on a convenience sample of 20 final nursing students (mean age 27 years, ranging from 20 to 45 years) before test-retesting of the translated tools. This process revealed some misunderstandings in the categories of the Maltese version JAREL SWB scale and a statement in the HAD scale.

Moreover, the HSCS scale revealed that the Helpfulness scale, comprising the Likert category (0 - 1 - 2 - 3), needed an additional category 'not applicable' (X). The reason given was that if a SCS was not used, one could not take it for granted that it was not found helpful by marking the (0) category. Thus the helpfulness scale was altered to (X - 0 - 1 - 2 - 3).

Following test-retesting on the nursing students, it was compulsory to test them on a pilot sample with the same characteristics of the main study (Polit and Hungler 1999). Treece and Treece (1986) suggest that a sample size of one tenth of the prospective sample 'would give some indication of the major problems that will arise in the research study'(p.383). Hence, since the planned sample was 70, a convenience sample of 7 patients, 4 females and 3 males, mean age 63.5 years, were recruited the day after their transfer from CCU, using the Mental test-score (Appendix F.2. p.498) and the Sample recruitment checklist (Appendix F.1.1. p.496).

Following institutional permissions, I commenced the pilot study on the 17th March 2000 over two weeks. I gained access to these patients through the admission records in CCU and both quantitative and qualitative data were collected during their stay in the medical

ward. At this time I realized that some of the patients with MI were still on the medical ward, after 10 days following transfer from CCU. Thus to maintain a homogeneous group, I introduced another inclusion condition, that is *Hospitalised for a maximum of 9 days, that is staying in CCU up to 4 days (plus or minus 1 day) and up to 5 days (plus or minus 1 day) in the medical ward.* No other alterations were done in the instruments.

The face to face interview was performed in privacy, three in the nursing officer's office and four in their single-room. The same process was carried out to inform the patients about the aims of the study (Appendix E.1. p.476), consent form (Appendix F.5.1. p.503) and make appointments with the individual patients as described in the Data Collection section of the main study.

1.2. Feedback from pilot study

During the pilot study I could observe that the best time for data collection was between 10.00 a.m. and 11.30 a.m. and between 2.00 p.m. and 3.30 p.m.. Thus, the hectic times of nursing care, patient's rest-time after lunch and visiting times, between 3.30 –5.45 p.m., were avoided to allow privacy and prevent contamination of results by external influences. Additionally, Sunday was not an appropriate day for data collection for two main reasons. On Sundays, an additional visiting hour takes place in the morning just before lunch and patients attend Mass on the same ward or other wards. After lunch, the male patients watched sports programmes on television, leaving minimum time for interviews.

Written feedback was returned from five patients and two gave verbal feedback (Appendix E.2. p.478). The average time of each questionnaire was ten minutes. The first interview on definitions of spirituality, SWB and others (Appendix G.2. p.507) took approximately

30 minutes, whilst the interview on patients' perceptions about the helpfulness of SCS (Appendix G.8. p.528) took about 45 minutes. Both interviews were audio taped and conducted on the same day with a break in between, that is at 11.00 a.m. and 2.00 p.m. The patients appreciated their participation as a means for ameliorating nursing care of patients with MI.

1.3. Quantitative and qualitative data from pilot study.

The questionnaires were handed back to me two days after the interview before discharge home. Analysis of quantitative data, derived from the JAREL SWB scale, HAD scale and HSCS scale are presented in (Appendix K.3. Figures K.3.1.– K.3.5. pp.576-578). Due to the very small sample used, no statistical analysis was computed and it is presented descriptively, without percentages.

The qualitative data underwent thematic analysis guided by the framework of Burnard (1991). Three themes emerged from the data on the definition of spirituality. These are coded in (S) which stands for *spirituality*.

- S1. A state of harmony with self, others and God,
- S2. Creative thinking and orderly life,
- S3. Self-awareness about one's origin and one's strengths and limitations.

Moreover, the following four themes were identified from the interviews defining *spiritual well-being*,

- SW1 a state of harmony with oneself, others and God,
- SW2 having hope in times of illness,
- SW3 finding meaning and purpose in life,
- SW4 a coherent life based on spiritual values and/or religious beliefs.

The code (SW) means spiritual well being. These themes indicated the religious and existential components in both definitions.

Furthermore, the following four themes were extracted from both the religious and the non-religious components of USCS interview, coded as (RH) which means resultant helpfulness.

- RH1 Relief of stress,
- RH2 Finding meaning and purpose in life,
- RH3 Accepting MI from the hands of God,
- RH4 Peaceful relationship with self, others and God.

The seven patients considered the use of spiritual coping strategies, including the religious, as enhancing their coping with MI by accepting MI from the hands of God, as the source of life. The support from family and friends and the belief in a paternal father helped to ease their mind and they felt secure in life with relief of stress. It appeared that these relationships made them feel at peace with themselves, even if MI was self inflicted, for example by excessive smoking or non compliance with drug treatment. Most of the patients expressed that their MI triggered reevaluation of their life and found meaning and purpose in life with re-ordering of their priorities in life as depicted in the following quotations (List No 6.1.).

Lazarus and Folkman (1984) contend that the central function of coping strategies is to reduce tension and restore equilibrium in life. Additionally, Lazarus and Folkman (1984) explain that the individual's 'religious beliefs may serve as a basis for hope in the face of the most adverse conditions' (p.159). This may be due to the empowerment felt through self-transcendence to God. Following the *numinous* experience, whereby the individual feels the personal nothingness and insufficiency to cope with MI, he/she longs to reach a

higher power, according to the respective religion, to cope with the stressful circumstance (Otto 1950).

List No 6.1. Patients' quotations describing the four themes of USCS interview

Themes	Patients' Excerpts
RH1. Relief of stress	'the fact that I had the holy pictures (Sacred Heart of Jesus and Rev Preca) beside me on the locker, I put my mind at ease. Mind you, at night I placed them under the pillow Anyhow, I understand that there is somebody who prays for me to God' (PF7)
RH2. Finding meaning and purpose in life	'I took this heart attack as an alarm! A signal that I need to stop smoking immediately as I realized that my smoking was a burden on my family.....If I had died, like my father did at a young age, I wouldn't have made it to see my younger daughter settled down in life. So I aim to keep on working in order to get her house built, ready for her to get married before I close my eyes' (PM1)
RH3. Accepting MI from the hands of God	'I managed to resign myself to God's plans for me' (PF5) Life is a gift from God, the source of all goodness'. (PM4)
RH4. Peaceful relationship with self, others and God	'I see God as a reliable person. He knows me and I know that He's taking care of me during my illness'. (PF3) 'being supported by my family, I feel at peace.....I mean, even now, that I suffered such a bitter experience of my heart attack. I feel secure to see my children reciprocating their love to me'. (PM6)

Patients' Codes : P = pilot study, F = female, M = male

RH = resultant helpfulness

2. Main study

2.1. Data collection process

Burns and Grove (1997) state that data collection involves addressing the research question, aims, objectives or hypotheses. The aim and objectives of the study required both

quantitative and qualitative data collection. The study aimed to identify relationships between SCS and anxiety, depression, SWB and personal characteristics of Maltese patients with first MI from transfer to the medical ward to the first three months after discharge from hospital. The exploration of patients' rationale for the helpfulness of SCS gave light to the interpretation of relationships between the variables under investigation.

Data collection was performed five times within the stipulated times as follows:

- T1: recruitment within the first 48 hours after admission to CCU.
- T2: within the first 48 - 72 hours post transfer to a medical ward
- T3: within the first 48 - 72 hours post discharge from hospital,
- T4: within the first 48 - 72 hours, 6 weeks after discharge,
- T5: within the first 48 - 72 hours, 13 weeks after discharge.

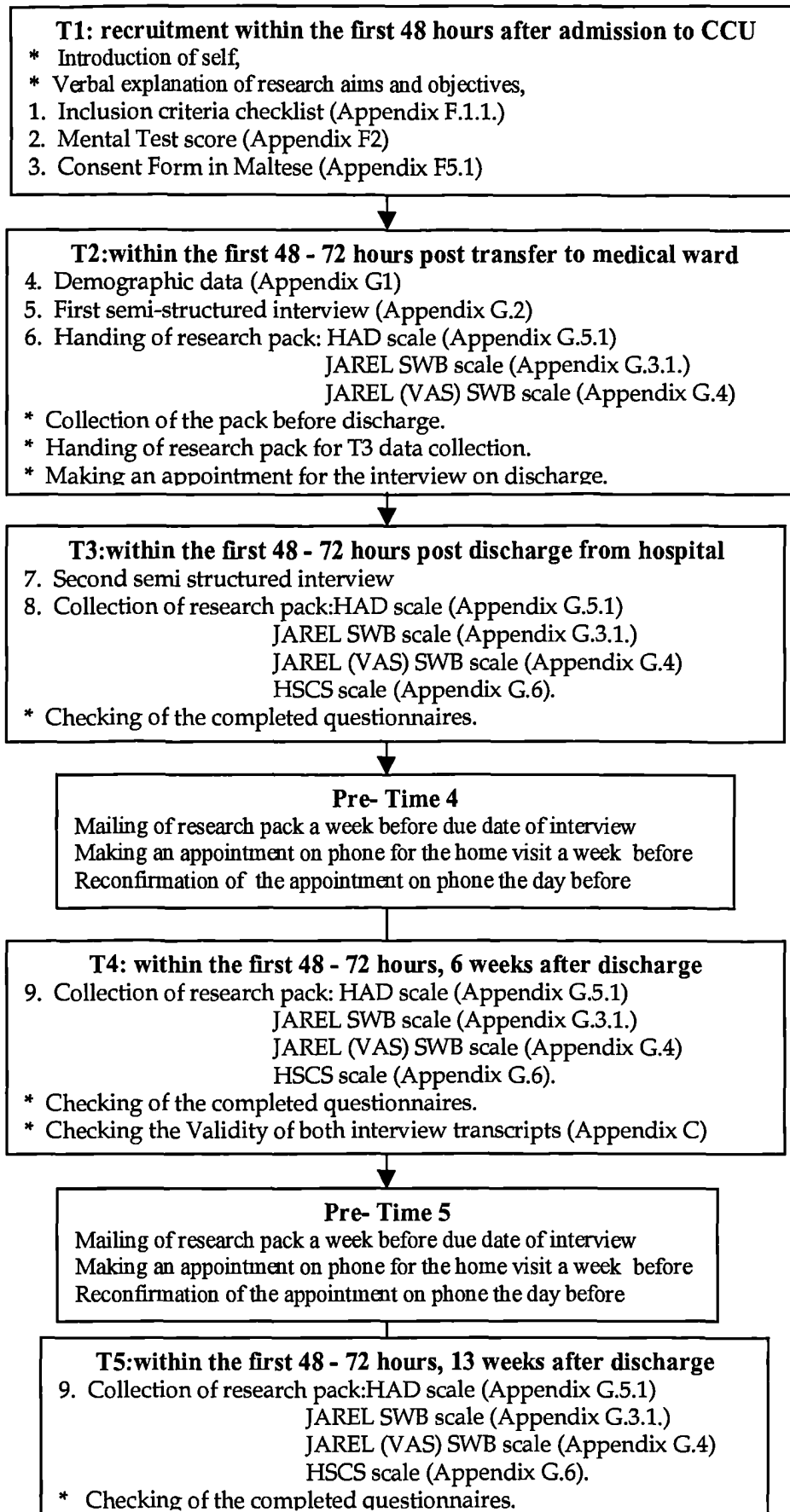


Table 6.1. Data collection during stipulated time

Time	T1 In CCU		T2 On transfer to med. ward		T3 On discharge home		T4 6 weeks after discharge		T5 13 weeks after discharge	
	n = 70		n=63		n=53		n=53		n=51	
	No	%	No	%	No	%	No	%	No	%
During first 24 hours	5	7.1	44	69.8	6	11.3	45	84.9	48	94.1
During 2 nd 24 hours	65	92.9	19	30.2	30	56.6	6	11.3	3	5.9
During 3 rd 24 hours	0	0	0	0	17	32.1	2	3.8	0	0
TOTAL	70	100	63	100	53	100	53	100	51	100

Table 6.1. demonstrates that the majority of interviews in Time 1 took place during the second 24 hours post admission to CCU (n=65, 92.9%). On transfer to the medical ward (T2), most of the data were collected during the first 24 hours (n=44, 69.8 %). On discharge home (T3), the majority were performed during the second 24 hours after discharge. In the last two data collection times, T4 and T5, the majority were collected during the first 24 hours (n=45, 84.9%) and (n=48, 94.1%). Furthermore, the sequence of both quantitative and qualitative data collection is depicted in Figure 6.1.

Figure 6.1. Data collection process across time



During data collection, I maintained communication with the patients in an attempt to minimize attrition rate. Since I intend to extend this study by data collection after two years, the Christmas card of 2001 had an additional letter informing them about the paper I presented at the 2nd Bio-Ethics Conference in Malta on the 28th October 2001 on *Fear of Death: Perceptions of patients with Myocardial Infarction on the role of the nurse in the delivery of spiritual care*. 88% of patients (n=45) reciprocated the Christmas greetings and 78% (n=40) requested this paper. This high response rate instilled hope in me, towards the future consent of participants in the follow up data collection in July 2002, that is two years after discharge from hospital.

3. Data Analysis Techniques

The qualitative and quantitative data analyses led the way for interpretation of results, by making sense of the findings and applying them to broader contexts (Polit and Hungler 1999, Hicks 1999, Burns and Grove 1997).

3.1. Quantitative Data Analysis

3.1.1 Data management

Quantitative data were processed by Statistical Package for Social Sciences (SPSS for Windows 9 and 10). Firstly, data were managed by coding the original data and transforming it into a numerical form (Appendix I, Tables I.1.- I.8. pp.553-560). In this procedure, I was assisted by my research secretary who double checked the list after me to avoid errors. Secondly, the numerical codes were inserted into the data base package of SPSS. During statistical analysis, the variable of the use and helpfulness of SCS was

considered as the dependent variable whilst the other variables of anxiety, depression, SWB and personal characteristics were considered as the independent variables. Figure 6.2. shows the analytic model developed for this study to explore the relationships between the independent variables and the dependent variable.

Figure 6.2. Analytic Model of relationships between variables

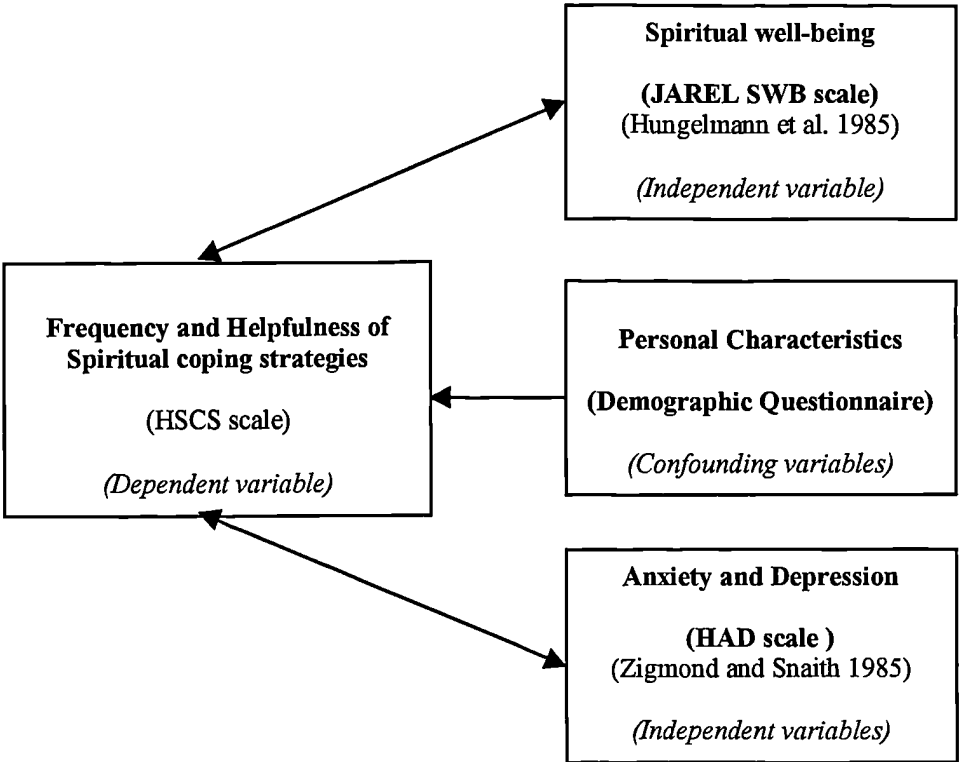


Figure 6.2. demonstrates the variables under investigation which were defined as independent, dependent and confounding variables. It was assumed that the use and helpfulness of SCS (dependent variable) changes over time. This change may be due to the levels of spiritual well being, anxiety and depression over time (independent variables). However, the patients’ demographic characteristics were expected to be altered by the different groups within the sample. The personal characteristics include gender, age, past history of IHD or angina, marital status, class/occupation, education, living alone/with

others, relationship with God, location of residence in Malta, church attendance and drug treatment which may influence mood states.

Two-way arrows indicate two way relationships between the variables of use and helpfulness of SCS and anxiety, depression and spiritual well-being. Additionally, one-way arrow indicates one-way direction in relationships with SCS. To enhance interpretation of data, the qualitative data gave light on the direction of relationships.

3.1.2. Statistical analysis of data

Statistical testing of data may be done by parametric or non-parametric tests (Hicks 1999, Bryman and Cramer 1999, Howell 1997, Freund and Simon 1997). The HAD scale, JAREL SWB scale and HSCS scale are Likert scales which put a rank order to the ordinal data (Hicks 1999, Conover 1999). Additionally, the Socio-Demographic data questionnaire (Appendix G.1. p.505) contains nominal data which classifies the patients into groups. Thus, the nature of the data of this study suggests the use of non-parametric tests.

Hicks (1999) recommends that parametric tests are used when the data fulfill the following three criteria:

List No. 6.2. Criteria for the use of parametric statistical tests

1. the questionnaires are of interval or ratio scaling,
2. the distribution of the scores is normal,
3. the variances of both variables are equal.

Hicks (1999) contends that the first of the three criteria is critical:

‘your data must be of an interval/ratio level of measurement, since parametric tests cannot be used on nominal or ordinal data. This condition can **never** be violated’ (p.92).

Therefore, at the beginning of data analysis, being a novice in statistics, I abided by the mentioned criteria since the scales yielded ordinal data. Therefore, I decided to use the non-parametric tests in data analysis.

However, mid-way of statistical analysis, I discovered William's t -test for the assessment of significant differences in pairs of times in the correlations between SCS and anxiety, depression and SWB. Software was supplied by Professor John Crawford of the University of Aberdeen, Scotland. Since, William's t -test compares the correlations which are analysed by Pearson's r , the correlations between the variables under investigation were recomputed by the Pearson's r parametric test. Although, I was in conflict in breaching the said criteria for the use of parametric tests (List No. 6.2.), I followed the train of thought of Bryman and Cramer (1999).

Following analysis of some research studies which violated these criteria, Bryman and Cramer (1999) state that the coefficient results of the parametric and non-parametric tests did not differ much. This may be because, tests apply to numbers and not to what those numbers signify (Bryman and Cramer 1999). For example, statistics are computed on number 5 which is the code number assigned to the category '*strongly agree*' or number 4 for '*moderately agree*'. Consequently, Bryman and Cramer (1999) argue that parametric tests are 'robust' that is, they can withstand violations of these criteria, stating that:

'A number of studies have been carried out (for example, Boneau 1960, Games and Lucas 1966) where the values of the statistics used to analyse samples drawn from populations which have been artificially set up to violate these conditions have been found not to differ greatly from those samples which have been drawn from populations which do not violate these conditions' (p. 119).

This was demonstrated by the similar coefficient results of the relationship between anxiety and SCS scores derived from Spearman's rho and Pearson's r correlations.(Table 6.2.)

Table 6.2. Comparison between Spearman's rho and Pearson's r correlations between anxiety and SCS.

Spiritual coping strategies	Time	n	Spearman r	2-tailed P value	Pearson's r	2-tailed P value
Combined	T3	53	-0.092	0.510	-0.136	0.330
	T4	52	-0.356**	0.010	-0.364**	0.008
	T5	51	0.008	0.958	0.088	0.537
Religious	T3	53	-0.009	0.926	-0.026	0.855
	T4	52	-0.210*	0.040	-0.219	0.118
	T5	51	-0.032	0.765	0.040	0.780
Non-religious	T3	53	-0.142	0.155	-0.213	0.125
	T4	52	-0.250*	0.015	-0.387**	0.005
	T5	51	0.095	0.373	0.134	0.347

Table 6.2 shows two consistent negative significant relationships between combined SCS / non-religious coping and anxiety at the sixth week after discharge (T4). However, the negative significant relationship between the religious coping and anxiety identified by Spearman's r at T4 is lost in Pearson's result. This is because, Pearson's correlation coefficients tend to be higher than the Spearman r 's correlation.

Furthermore, Bryman and Cramer (1999) recommend the use of non-parametric tests when the 'size of the samples is small, say under 15' (p.119). Thus, the sample size of the study, that is ($n=51$) across time, is relatively large enough to use Pearson's parametric test.

Therefore, the main study made use of the Spearman's rho correlation test, Pearson's r , Independent student t-test, Paired sample t-test, William's t-test One-way analysis of variance (ANOVA) and Repeated Measures analysis of variance (RM.ANOVA).

3.1.3. Statistical analysis tests

i) **Spearman's rho (r) rank correlation** is a non-parametric test, used when the data is at ordinal level and the relationship is linear. The Spearman's coefficient (r) lies between (-1 and 1). The continuum of (-1.....0....+1) provides information on the strength and direction of relationships. The closer the coefficient is to 1, the stronger the negative or positive relationship.

Spearman's rho correlation was used during the analysis discussed in Chapter 5, whereby correlations were computed during the criterion-related strategy to assess the validity of the newly developed HSCS scale. The findings of test-retest of both scales on the same group of nursing students were correlated with those of the established JAREL SWB scale (Figures 5.3. – 5.6.).

Additionally, Spearman's rho was used in the correlations between the use and helpfulness of SCS subscales of HSCS scale (Tables 4.4.- 4.6). The high correlations between the two led to the amalgamation of the two scores in one whole score. Furthermore, Spearman's rho was used to assess the correlation between the JAREL SWB scale in the original Likert form and the Visual Analogue Scale (VAS) format (Table 4.3.). The results were highly correlated, so only the findings of the original format was used in the study. Additionally, it was used in the correlations between scores of anxiety and depression across time (Table 8.3.)

ii) **Pearson's r** , also known as the Product-Moment Correlation coefficient, is a parametric test which, as described in Spearman's (r), indicates both the strength and the direction of the relationship between a pair of variables, such as anxiety and spiritual coping strategies. Pearson's (r) was used in the correlations between SCS and anxiety, depression and SWB (Figure 6.4).

iii) **Independent Student's t-test of two unrelated means** was used to determine if the means of the two nominal groups differed. It compares the difference between the two means with the standard error of the difference in the means of the two groups:

$$t = \frac{\text{Group one mean} - \text{Group two mean}}{\text{standard error of the difference in means}}$$

The Independent Student's t-test was used to identify differences in SCS, within the subgroups of the personal characteristics, when the characteristic consisted of two categories, such as, male and female, north and south of Malta (Figure 6.3).

iv) **Paired samples t-test (t-test for two related means)** compares the mean difference between pairs of scores within the sample with that of the population in terms of the standard error of the difference in means:

$$t = \frac{\text{sample mean difference} - \text{population mean difference}}{\text{standard error of the difference in means}}$$

Paired sample's t-test was used in the comparison of the means of the four variables separately, that is anxiety, depression, SWB and SCS, comparing them in pairs of time (Figure 6.4). This test was supported by Post Hoc Multiple Comparisons test of

Bonferroni inequality test. According to Bryman and Cramer (1999), Bonferroni test is based on *paired related t-test* as it identifies differences between each two possible groups. This was used to prevent Type I error when conducting multiple t-tests and ANOVA in the statistical testing where the difference lay in SCS in groups of personal characteristics (Figure 6.3).

v) **One-way analysis of variance (ANOVA)** compares the means of three or more unrelated means. The coefficient F is an estimate of the between-groups variance (or mean-square) divided by that of the within-groups variance:

$$F = \frac{\text{between groups estimate of variance (mean-square)}}{\text{within-groups estimate of variance (mean-square)}}$$

However, ANOVA, F test tells only whether there is a significant difference between related means, but it does not reveal where this difference lie. Thus this test was supported by Post Hoc Multiple Comparisons test of Bonferroni inequality test. The significance level of 0.05 is divided by the number of categories in the group to produce the appropriate significance level of the specific group. For example, if the age-group has three categories, for example (40-54, 55-59, 60-74), the significance level resulted as 0.017 (0.05/3). This was used to estimate differences in SCS with the groups of personal characteristics, such as church attendance, age-groups categories and years of education categories (Figure 6.3).

v) **RM.ANOVA (Repeated measures analysis of variance)** compares three or more means from the same sample over time. In this longitudinal study, RM.ANOVA was used to identify significant differences in the fluctuations in the:

- correlations between SCS and anxiety, depression, spiritual well-being (Figure 6.4)
- relationships between SCS and personal characteristics (Figure 6.3).

However, RM. ANOVA identified only whether there was a difference across time.

Therefore, to identify where the difference lay across time, William's t-test was used to identify differences in the correlations in pairs of times, whilst Paired sample t-test was used to identify where the difference lay in the four variables separately, comparing them in pairs of time.

vi) **William's t-test (1949)** was worked out by the use of DEPCOR.EXE programme (Crawford 2001). William's test identifies significant differences between dependent correlations obtained from the same sample. It may also be used to test for significant differences in correlations between a criterion variable and competing predictor variables (Crawford et al. 1992). I utilised William's test to identify where the difference lay in the correlations between SCS and anxiety, depression and SWB in pairs of time (Figure 6.3).

Figure 6.3. Summary of statistical tests in the investigation of Personal Characteristics

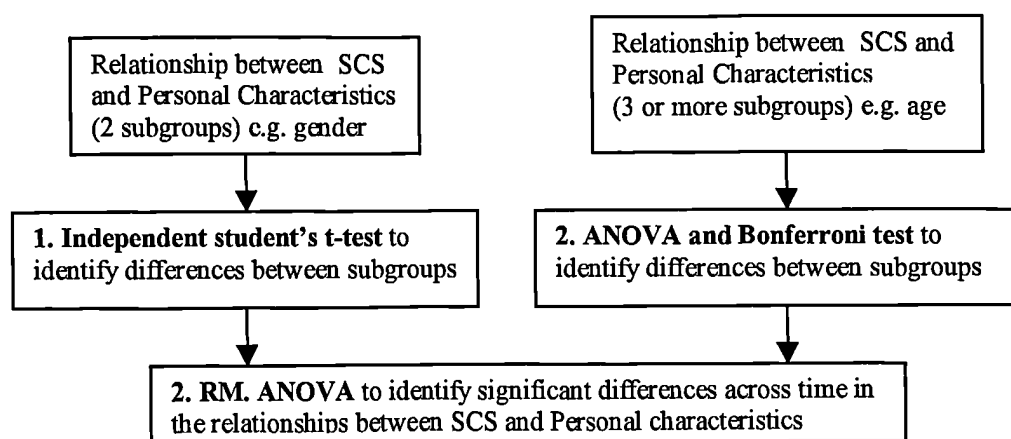
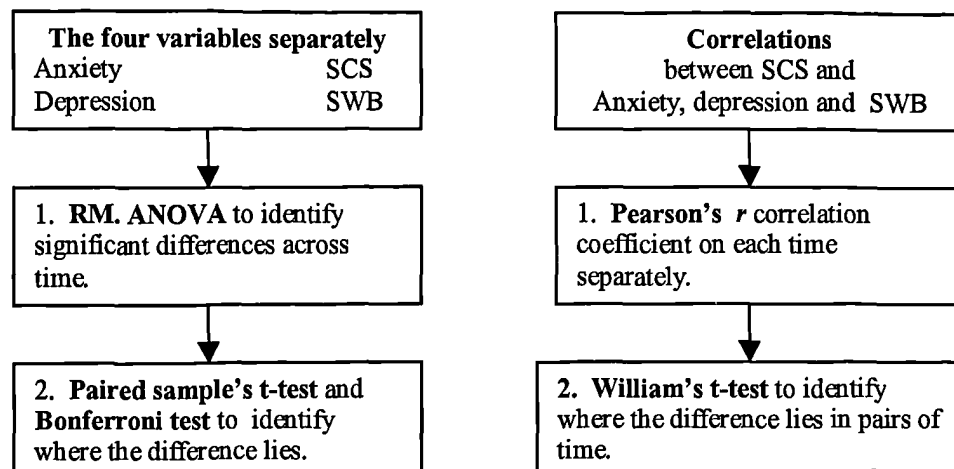


Figure 6.4. Summary of statistical tests in the investigation of the SCS, anxiety, depression and SWB.



List No 6.3. Use of Spearman's r Correlation Coefficient.

- Criterion related validity testing of the new scale HSCS with JAREL SWB scale,
- Reliability test-retesting of HAD scale, HSCS scale and JAREL SWB scale,
- Correlation between patients' scores of the Use and Helpfulness sub scales of HSCS scales,
- Correlation between the JAREL SWB Likert scale and V.A.S. format,
- Correlation between the patients' scores of anxiety and depression.

4. Qualitative Data Analysis

4.1 Data analysis by computer software.

Qualitative data analysis involves the organization of narrative, non-numerical data into categories and to search for similarities and differences in those data (Burnard 1998). Since 1980's era of technological innovations, qualitative data analysis can be done by computer programmes (Davis et al. 1997, Pilkington 1996) such as *The Ethnograph* and NUD*IST (Non-numerical Unstructured Data Indexing Searching and Theorising). Pilkington (1996) outlines the advantages of this software such as, storing data in an organized data-base,

attaching codes to segments of text, writing memos for deeper analysis, assembling data according to themes and categories and exhibiting findings with graphic mapping.

During the Easter school (2001) at the University of Hull, I was interested to work on the QSR.NUD*IST No 5. Back home, I tried to explore this programme to do the data analysis of the pilot study. Unfortunately, it was in vain. During my study visit in September 2001, I hoped that I could practise on it under the supervision of the Coordinator who promoted such a programme. However, I could not operate this programme on the University network computer system. Since then, I started losing hope to manage my data analysis by NUD*IST.

Finally, this hope was lost completely when I attended the second European Conference for Ph.D students and supervisors in October 2002. The academics using such programmes revealed to me the need for consistent supervision to compute this data analysis successfully. Hence, I decided to surrender and analyse the data manually. I supported this by the word processor, whereby I placed the codes of the themes and categories by the respective statements. Fortunately, I found this method a quicker way of finding the coded segments of the transcribed interviews.

4.2. Thematic content analysis (Burnard 1991)

Literature provides evidence about the problems associated with analyzing interview transcripts, such as misunderstanding of patients' statements (Riley 1996, Burnard 1992). Thus, on the 19th June 1998, I attended a day seminar on qualitative data analysis at the University of Hull. Professor Philip Burnard explained this process, which is based on Glaser and Strauss 'grounded theory' approach. This thematic content analysis is composed

of the following 14 stages, which I followed in both the pilot and the main study data analysis (List No. 6.4).

List No. 6.4. Systematic stages of Thematic Analysis Framework (Burnard 1991)

Stages of Thematic Analysis Framework (Burnard 1991)	
1	Notes are made after each interview
2	Transcripts are read through and notes made
3	Open coding
4	Forming broader categories
5	Finalising the list of categories
6	Inter-rater reliability testing
7	Final list to cover all aspects of the interviews
8	Highlighting the segments according to categories
9	Gathering the coded sections according to categories manually
10	Gathering the cut out sections and pasted on sheets accordingly.
11	A sample of informants examine the appropriateness of the respective quotation to the category
12	Keeping the coded transcripts, lists of categories and audio-taped interviews at hand during the writing up of project
13	Keep to the same original meanings and contexts during the write-up
14	Linking the data with the literature

The semi-structured interviews were audio taped. I did not ask the questions in the order of the schedule but according to the development of the conversation. To facilitate such a flexible dialogue, I prepared a set of probes which were applicable to all questions, that is, why each SCS was perceived helpful in the:

- overall coping during recovery from MI,
- management of stress,
- maintenance of well being.

During the interview I wrote field notes and after each interview I included memos and reflected on those points to try to identify the themes. I read each transcript repeatedly and

points were written by the statements on general themes. This stage helped me get immersed in the data and tried to understand the patients' experience of MI and the ways of coping adopted.

At first, I categorized openly the statements along the texts, such as 'feeling of security, protection'. Similar categories were collapsed together under broader categories. For example '*eased my mind, keep calm*' were collapsed into '*resultant relaxation*'. The lists of categories were examined for similar categories and removed the repeated ones to finalise the list of categories.

Burnard (1991) suggest that the transcripts are analysed by two external nurses independently and then compared with the researcher's list. This was aimed to reduce the researcher's bias which may enhance the validity of the analysis. Both the pilot and the main study data were analysed by another nurse and a colleague who had conducted research on the spiritual dimension in care. Both lists of categories were then compared and agreed upon the final list. The transcripts were read again several times and matched with the final list of categories. The word processor was used to list the themes and categories accompanied by whole quotations from texts.

Validity of the data and content analysis is well documented (Morse 1998, Oppenheim 1998, Riley 1996). Burnard (1991) asserts that the validity of the content analysis of the qualitative data is achieved by external inter-raters and a sample of the respondents themselves. I only managed to use two colleagues to analyse the data concurrently with me. However, the patients were given the paper which I presented in the Bio-Ethics

seminar on the 28th October 2001. It contained quotations from four patients M21, M14, M62, PF6 and descriptive findings on which they could comment.

On reflection I can say that this framework of thematic analysis guided me systematically in the process of identifying common themes in the interviews and to extract sufficient excerpts to explain the statistical relationships identified. During data collection and data analysis which occurred concurrently, I managed to keep a diary in which I briefed my experiences to identify the possible impact of my presence on the data and prevent interviewer bias (Alexander 1997).

5. Data Presentation of quantitative and qualitative data

There are various ways to summarise and display data (Hicks 1999, Pagano and Gauvreau 1993). The qualitative data were presented in lists of themes and categories and direct quotations along the discussion of findings. The descriptive data were displayed in frequency tables, bar charts, scattergrams, line graphs, and lists.

- i) Tables** were used mostly to present frequency distribution of the variables in the pilot study. The methodology chapter contains tables outlining the stages in the methodology used, such as content validity, and results of the systematic sample and the alternate and excluded patients.
- ii) Bar charts** were used to exhibit a frequency distribution for nominal or ordinal data. The nominal data of the various groups within the sample, such as marital status, were presented in clustered bar charts showing the sample across the four collection times.

Similarly, bar charts demonstrated the ordinal data of anxiety, depression, SWB and SCS across time.

iii) **Two-way scattergrams** were used to display the relationship between two different continuous measurements. Each point on the graph represents a pair of values, that is the scale for one quantity on the horizontal x-axis and the other value on the vertical y-axis. Scatter plots were used to depict the high correlation between the frequency and helpfulness scores of the HSCS. Additionally, differences in the SCS, anxiety, depression, SWB across times were shown by means of scattergrams.

iv) **Line graph** is similar to a two-way scatter plot as it illustrates the relationship between continuous quantities. Line graphs were used to exhibit the fluctuations in the relationships of the SCS across time with personal characteristics.

Following a systematic description of the methodology used to conduct the longitudinal descriptive correlational study, the quantitative and qualitative findings are presented in the next three dual chapters. Since the study sought to test three hypotheses, the multitude of findings are accompanied systematically by the respective discussion, one chapter for each of the three hypotheses.

CHAPTER SEVEN

Personal Characteristics and Spiritual coping strategies

The following four sets of dual chapters present the findings of the study and incorporate the discussion of the group of findings of each of the three hypothesis. This is to enhance a better flow of sequence in the analysis process of each hypothesis. The study sought to answer the research question:

What are the relationships between SCS and anxiety, depression, SWB and personal characteristics of Maltese patients with first MI, from transfer to the medical ward to the first three months after discharge?

Therefore, these four dual chapters attempt to test the following **three hypotheses**:

- No 1 : H1** There will be a **negative** relationship between SCS and anxiety and depression during hospitalisation and the first six weeks after discharge.
- No 2 : H1** There will be a **positive** relationship between SCS and SWB during hospitalisation and the first six weeks after discharge.
- No 3 : Ho** There will be no difference **across time** between SCS and personal characteristics of age, church attendance before MI, drug treatment that influences mood states, education, gender, history of ischaemic heart disease (IHD) and angina, living alone/with others, location of residence, marital status, relationship with God and social class/occupation.

The four dual chapters encompassing the findings and discussion are subdivided into the following four chapters:

- Personal characteristics and SCS in preparation for hypotheses testing,
- Hypothesis Testing No 1. Relationship between SCS and anxiety and depression,
- Hypothesis Testing No 2. Relationship between SCS and SWB (SWB)
- Hypothesis Testing No 3. Relationship between SCS and personal characteristics

Each chapter incorporates five subsections which are substantiated by discussion. The discussion compares the findings of the study with the scarce research findings, supported by possible rationale from the Maltese culture and current practices in Malta, such as health care in hospital. Additionally, the relationships are backed up by direct quotations from the face to face interview, conducted by me in patients' homes on their discharge from hospital. The Stress Coping Theory of Lazarus and Folkman (1984) and the *Numinous* experience of Otto (1950) provide rationale for hypotheses testing. It is noted that the quantitative and qualitative data, collected on the use and helpfulness of SCS were measured retrospectively. In contrast the quantitative data on the levels of anxiety, depression and SWB were assessed prospectively (Table 7.1).

Table 7.1. Prospective and retrospective data collection and Time (T)

Prospective data collection of anxiety, depression and SWB	Retrospective data collection of SCS
T2 = on transfer to the medical ward	T2 = Nil
T3 = on discharge home	T3 = during hospitalisation
T4 = on the 6 th week after discharge	T4 = during the first six weeks after discharge
T5 = on the 13 th week after discharge	T5 = between the 6 th and 13 th week after discharge

1. Personal characteristics of the sample derived from the Demographic questionnaire and Sample recruitment checklist.

This section presents the personal characteristics of the sample in preparation for testing hypothesis No 3:

Ho There will be no difference **across time** between SCS and the groups within the personal characteristics of gender, age, marital status, past history of ischaemic heart disease (IHD), history of angina, education, class/occupation, location of residence, living alone/with others, relationship with God, church attendance before MI and drug treatment which may influence mood states.

Figure 7.1. Frequency of gender of original sample (n=70)

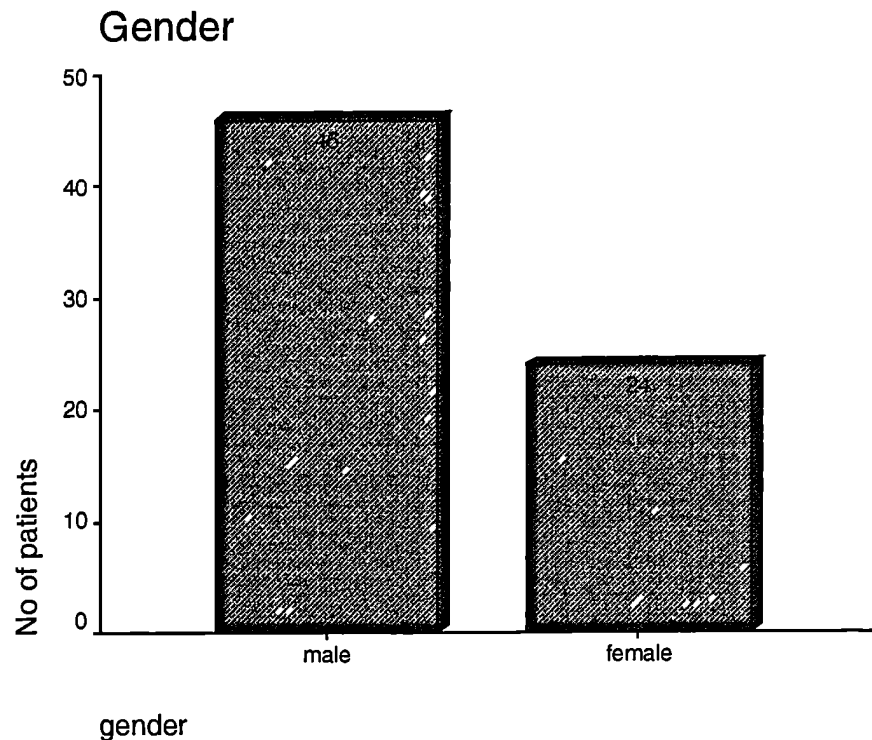


Figure 7.1. shows that the total number of patients in the recruited original sample consisted of 65.7% males and 34.3% females. It is noted that the sample is representative of the target population as discussed in Chapter Four. The findings of the personal characteristics of the patients are presented by gender. This is due to the higher percentage of males than females who experience MI (Urden et al. 2002). This is depicted also by the nature of samples recruited for research such as the following studies:

- Chiou et al. (1997) in Taiwan: 40 patients, 35 males and 5 females;
- Terry (1992) in Australia : 40 patients, 35 males and 5 females;
- Toth (1993) in USA : 236 patients, 182 males and 54 females.
- Crowe et al. (1996) in Canada : 785 patients, 683 males and 102 females.

Figure 7.2. Frequency of age by gender of original sample (n=70).

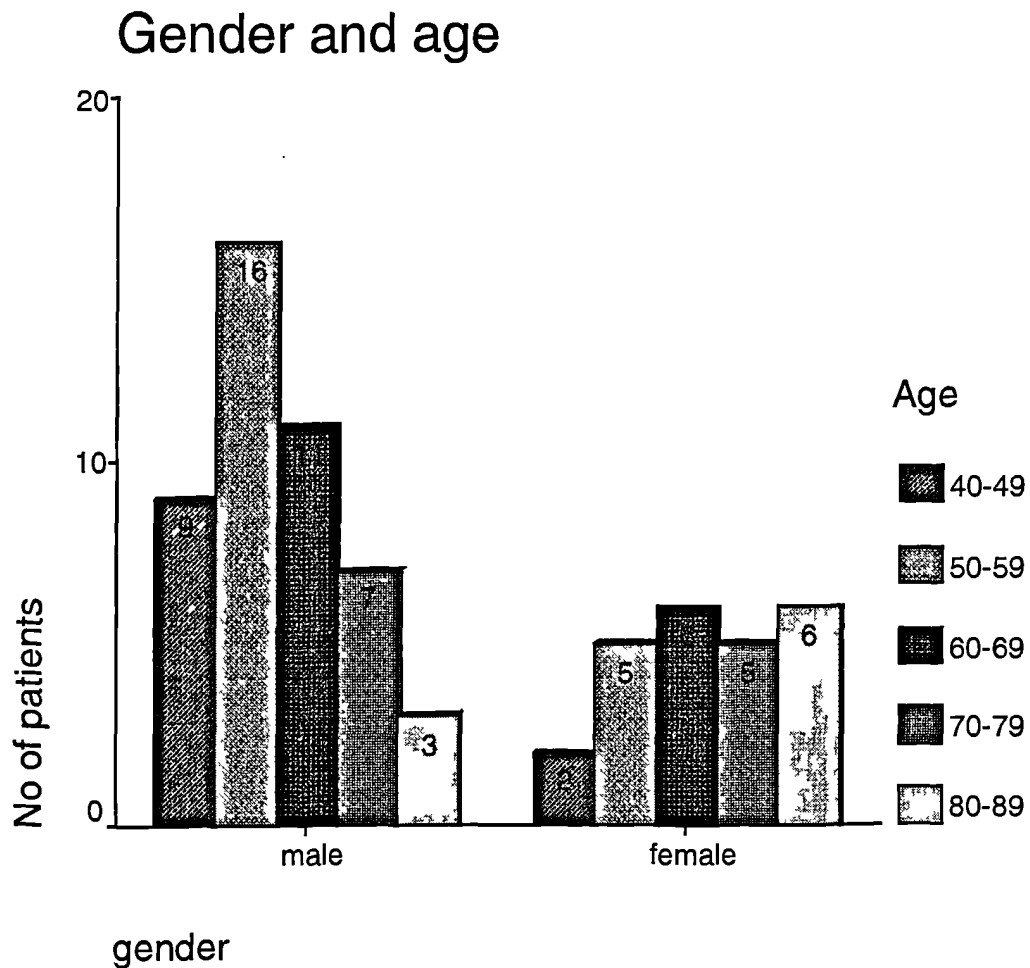


Figure 7.2. demonstrates that the majority of patients were in the two age-groups, (50-59) years (30%, n=21, 16 males and 5 females) and 60-69 years (24.4%, n=17, 11 males and 6 females). It is noted that 3.9% of patients aged between 40-59 years (n=4) were excluded as they were awaiting CABG during the first three months after discharge (Appendix K.2., Table K.2.5. p.569). Literature suggests that the higher percentage of older patients with MI, aged between 60-89 years (54.3%), tends to be more religious (Reed 1986, Koenig et al. 1988).

Figure 7.3. Frequency of marital status by gender of original sample (n=70)

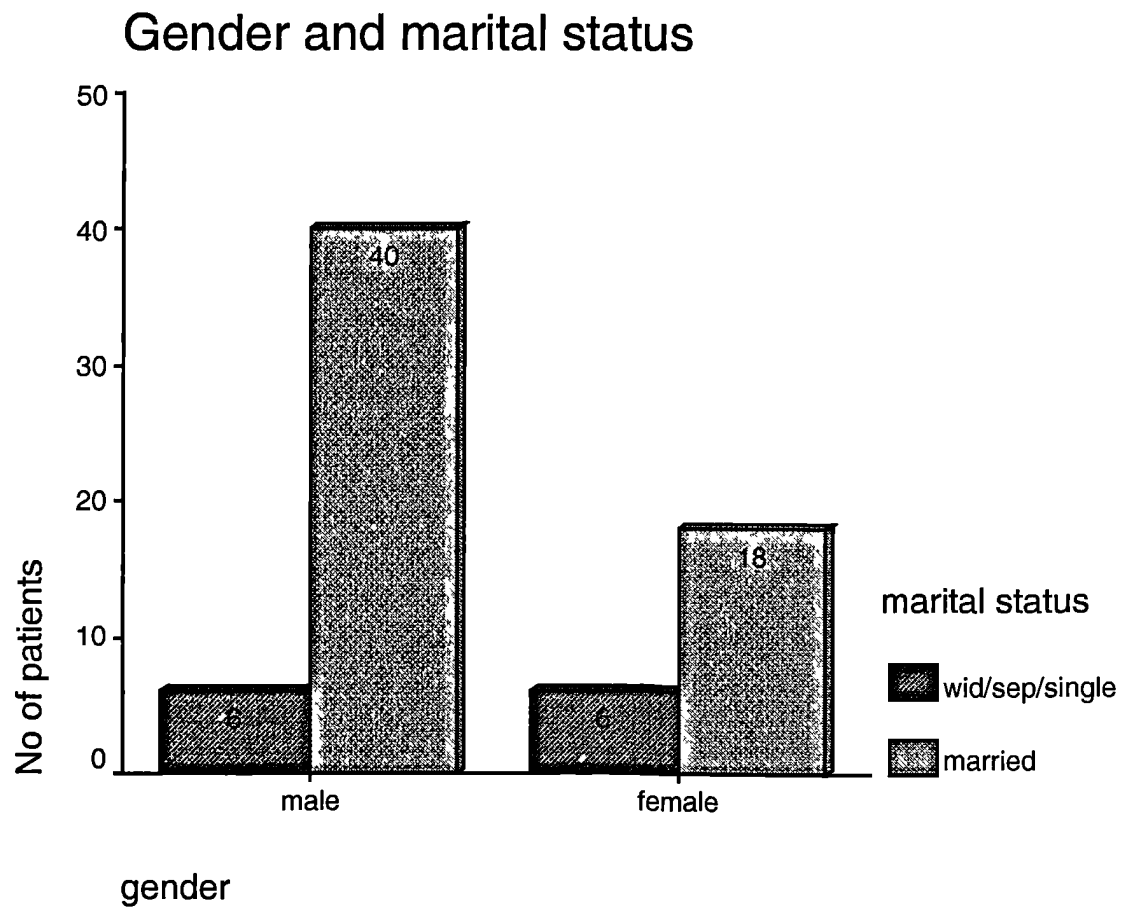


Figure 7.3. shows a very low percentage of patients (17.1%, n =12) who were single(n=1), widowed(n=10) and separated (n=1). Females tend to be more spiritual (Highfield 1992, Reed 1987), so it is likely that the company of a female spouse may increase the use of SCS.

Figure 7.4. Frequency of past history of IHD by gender of original sample (n=70)

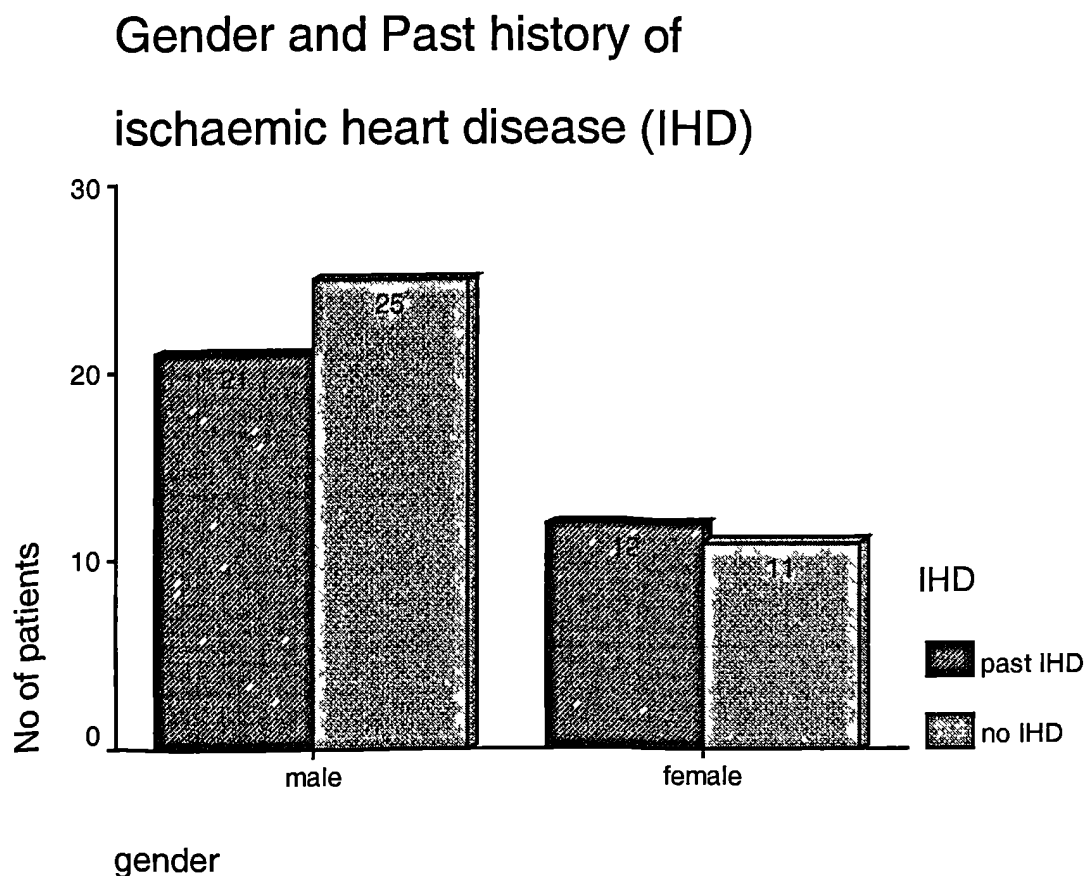


Figure 7.4. demonstrates a high percentage of patients (47.1%, n=33) who had experienced ischaemic heart disease. These patients may have been on long treatment for hypertension and/or Diabetes Mellitus, which is a common disease in Malta. Negligence in compliance with their treatment may cause guilt feelings of self inflicted disease which may render higher levels of anxiety and depression. Additionally, they may consider their illness as a punishment from God which may contribute towards negative emotions (Lazarus and Folkman 1984, Koenig et al. 1998).

Figure 7.5. Frequency of past history of angina by gender of original sample (n=70)

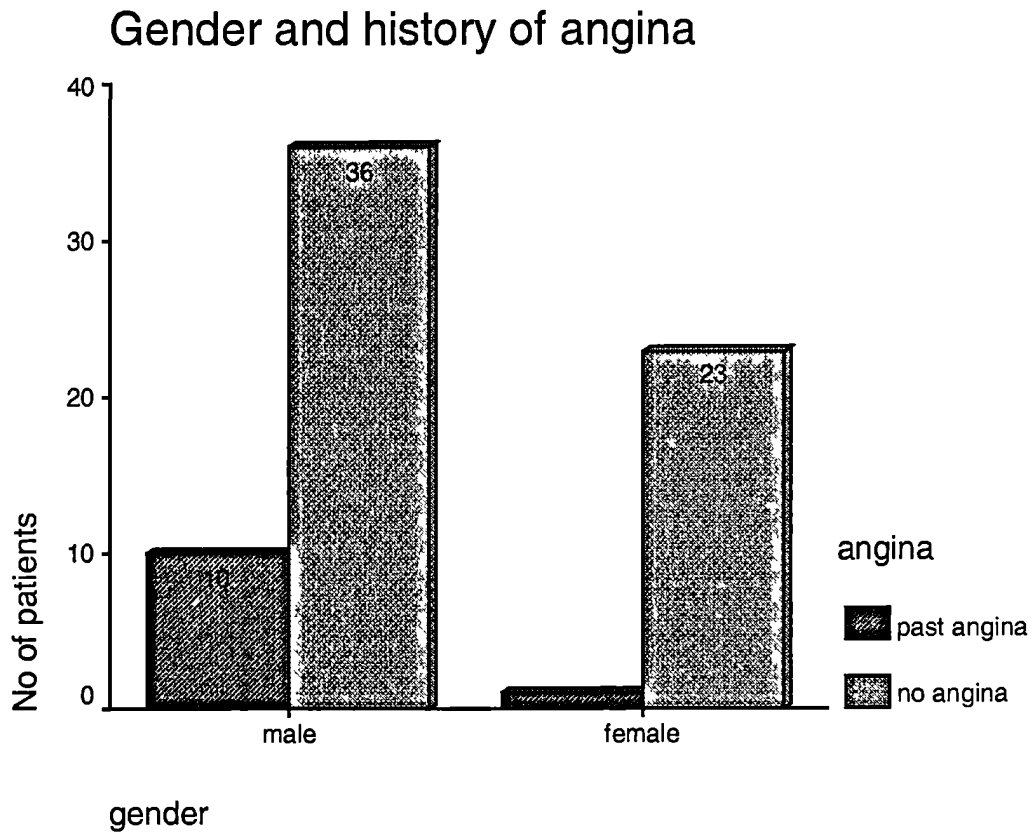


Figure 7.5. depicts a low percentage of patients with past anginal attack (16%, n=11). This experience may render higher levels of anxiety and depression due to the fear of recurrence of MI (Webster and Christman 1988). It is noted that 13.6% of the excluded patients (n=14) were excluded because of past history of MI (Appendix K.2., Table K.2.5 p.569).

Figure 7.6. Frequency of years of education by gender of original sample (n=70)

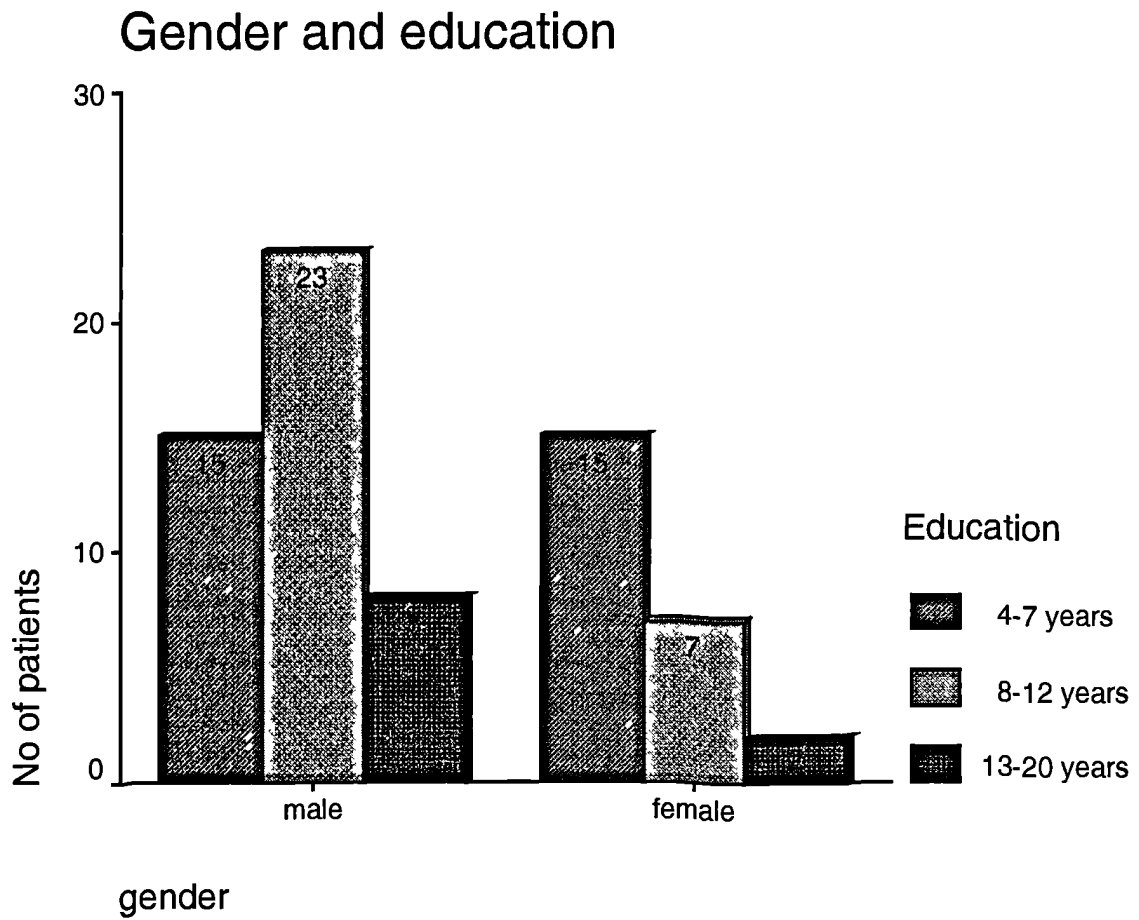


Figure 7.6. demonstrates an equal percentage of patients (42.9%) in both groups of 4-7 years (n=30) and 8-12 years of education education(n=30). Literature suggests that higher level of education may yield lower scores of religiosity (Reed 1986, Riley 1998).

Figure 7.7. Frequency of social class / occupation by gender of original sample (n=70)

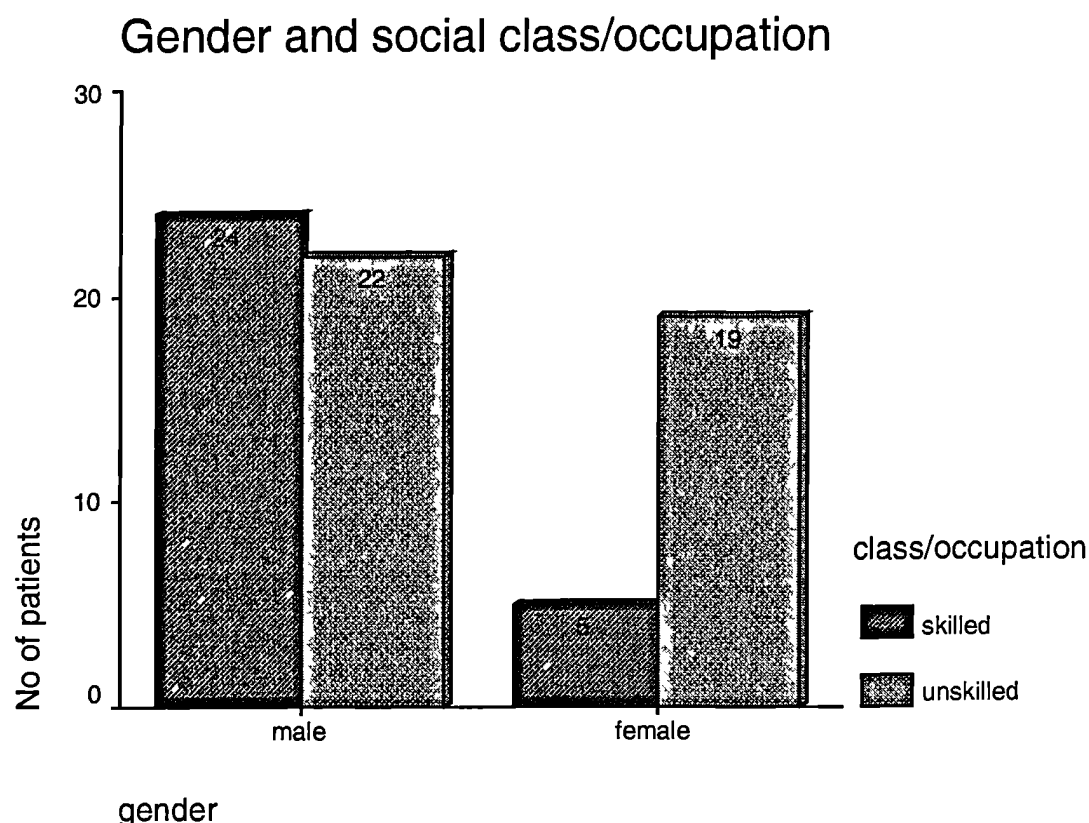


Figure 7.7. demonstrates a higher percentage of patients with unskilled occupation (58%, n = 41) which may render higher levels of anxiety (Rom 1994) and higher scores of RCS (Webster and Christman 1998). According to Crompton (1998) and Baldacchino (1999a), occupation may be used as an indicator of social class. A Maltese sociologist Baldacchino (1999b) proposes three types of occupation namely, skilled, semi-skilled and unskilled. However, being a small sample it was decided to classify class as skilled non-manual and unskilled manual occupation. Baldacchino (1999c) criticises the traditional classification of female class to be identical to that of their working husband. Consequently, the females were categorised according to their personal current or past occupation.

Figure 7.8. Frequency of location of residence by gender of original sample (n=70)

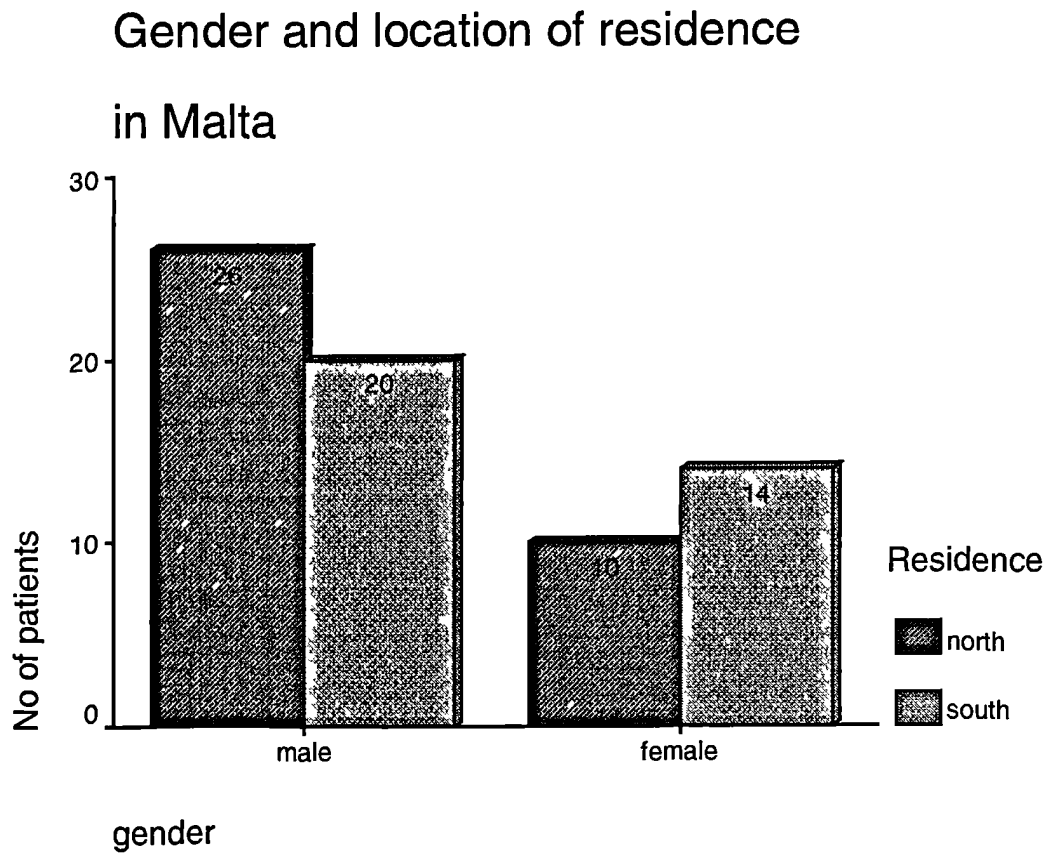


Figure 7.8. demonstrates an equilibrium in the percentage of patients from the north (51.4%, n=36) and the south (48.6%, n=34). Malta is a very small island with an area of 245.73 square kilometres. Therefore, people may travel by car from the south to the north of Malta in just an hour or less.

Figure 7.9. Frequency of living alone/with others by gender of original sample (n=70)

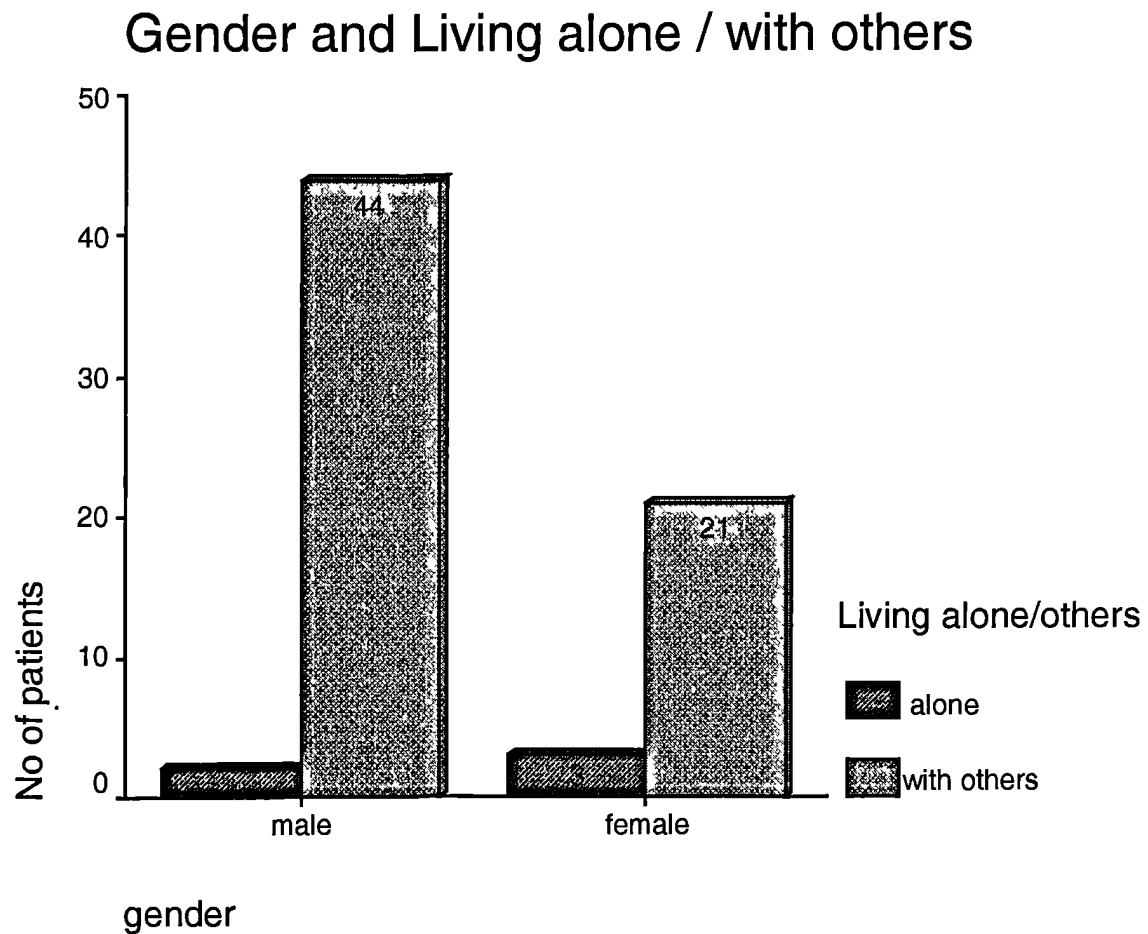


Figure 7.9. displays the majority of patients who lived with others (92.9%, n=65). It is noted that although Figure 7.3. reveals that 17.1% of patients (n=12) were either single, separated or widowed, only 7.1% (n=5) live alone. This is because some older patients retired at their daughter's or son's home for monitoring of their well being. Thus the single, separated and widowed patients may also have high levels of SWB if they were living with others, who may provide them with protection and security.

Figure 7.10. Frequency of relationship with God by gender of original sample (n=70)

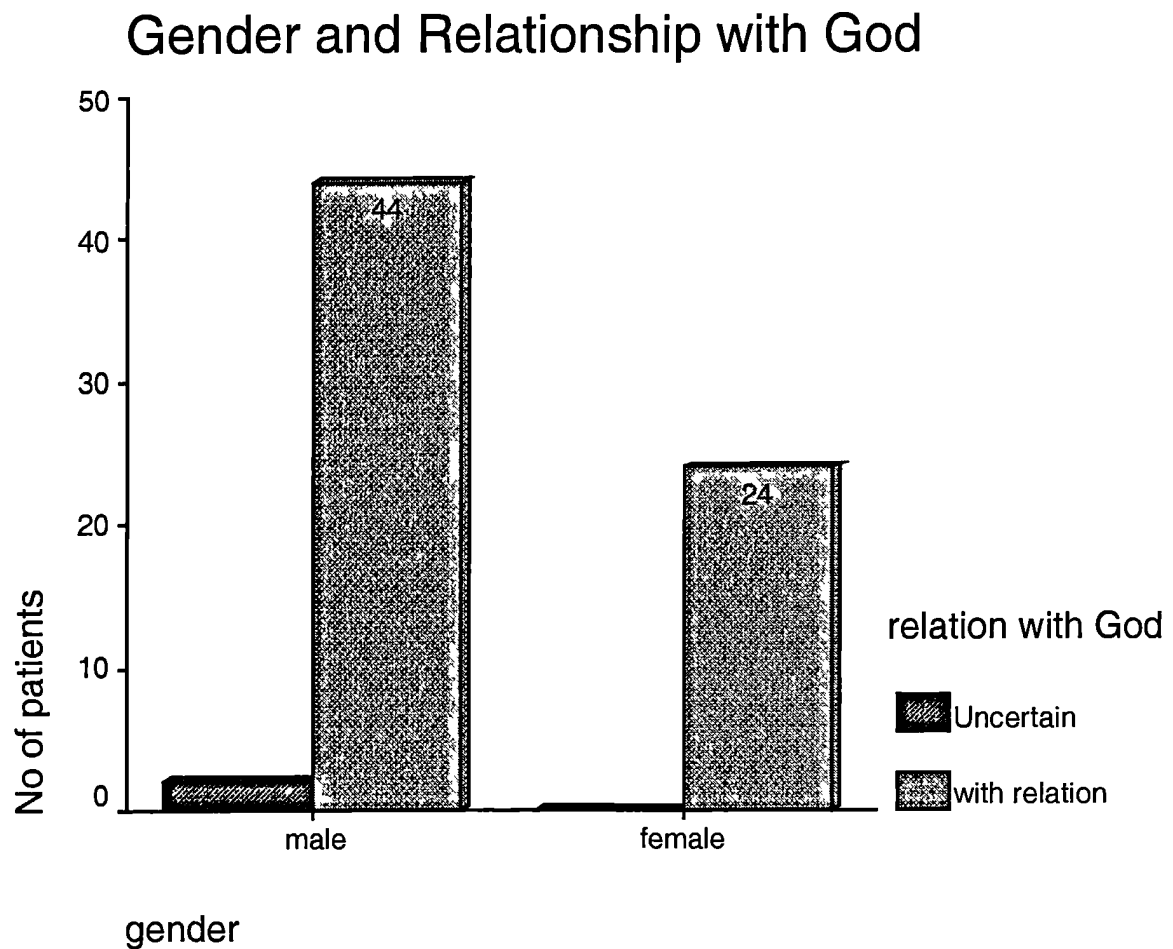


Figure 7.10. displays that 97% of patients (n=68) had a relationship with God. The qualitative data revealed that most patients considered God as almighty and a merciful father, always available to help them in their stressful life, including MI.

Figure 7.11. Frequency of church attendance by gender of original sample (n=70)

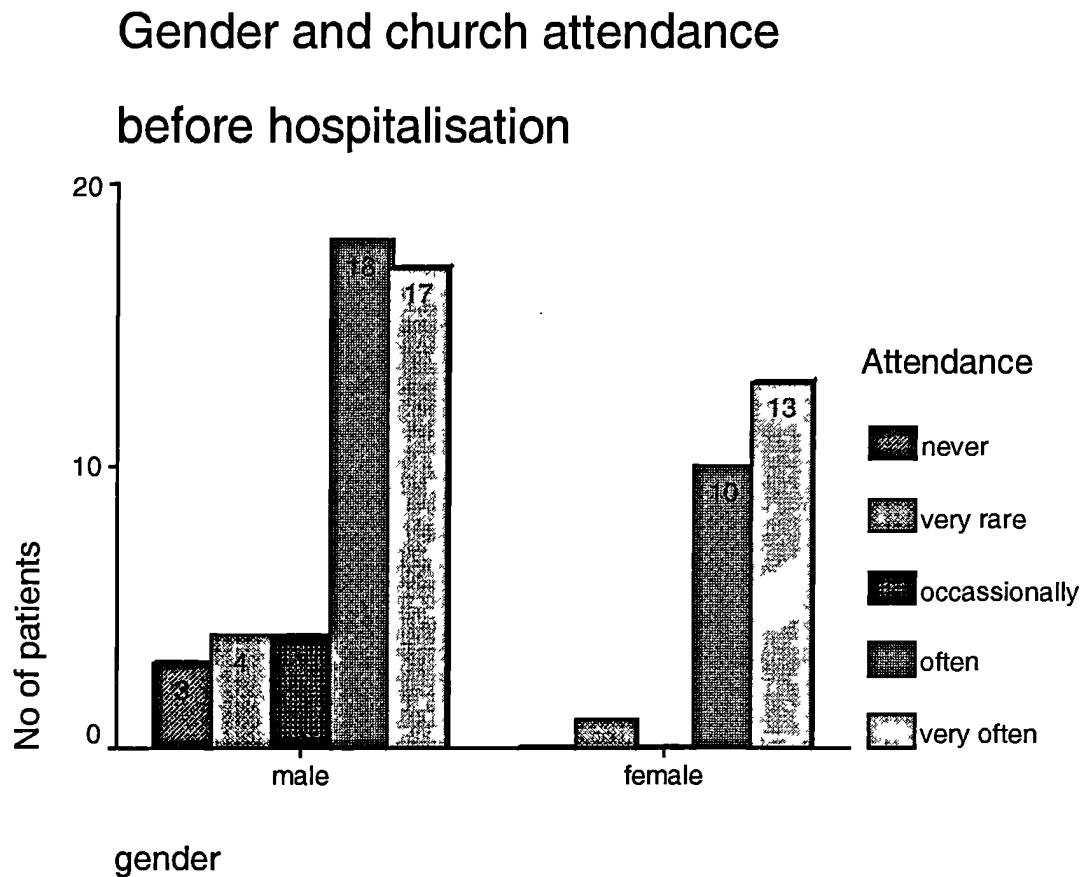


Figure 7.11. demonstrates that the sample consisted of 82.9% (n=58) who rated their church attendance as *often* (n=28), that is at least once a week and *very often* (n=30), at least once daily. According to DISCERN (1998), the church attendance recorded in the census 1995, revealed that 63.41 % of the population of Malta and Gozo attended church for Sunday Mass. When compared to the census estimate, the higher percentage of patients attending church frequently may be due to the older age of the patients who tend to be more religious (DISCERN 1998, Reed 1986, Koenig et al. 1988).

Figures 7.12.1 – 7.12.4. Frequency of treatment with drugs which may influence mood states by gender of original sample across time.

The inclusion of this variable was based on the available literature stating that coronary patients are routinely treated with Beta-adrenergic blocking agents (Hjalmarson 1987, Taylor 1987, Julius 1987). Therefore, these drugs may produce a resultant effect on the autonomic nervous system by lowering the level of anxiety (Nickel et al.1990, Thompson 1990) . Additionally, Miller and Rosenfield (1974) propose that treatment with minor tranquillisers and sedatives may be associated with decreased levels of anxiety.

This section displays only the findings of drug treatment administered before MI and on transfer to the medical ward. It is well documented that during the critical acute phase of MI in CCU, this type of drug treatment is part of the treatment of MI (Urden 2002, Thompson 1990). Consequently, statistical analysis was computed only in the relationship between drug treatment on transfer to the medical ward (T2) and SCS across time.

Figure 7.12.1. Frequency of treatment with drugs which may influence mood states by gender of original sample before admission to hospital(To) (n=70)

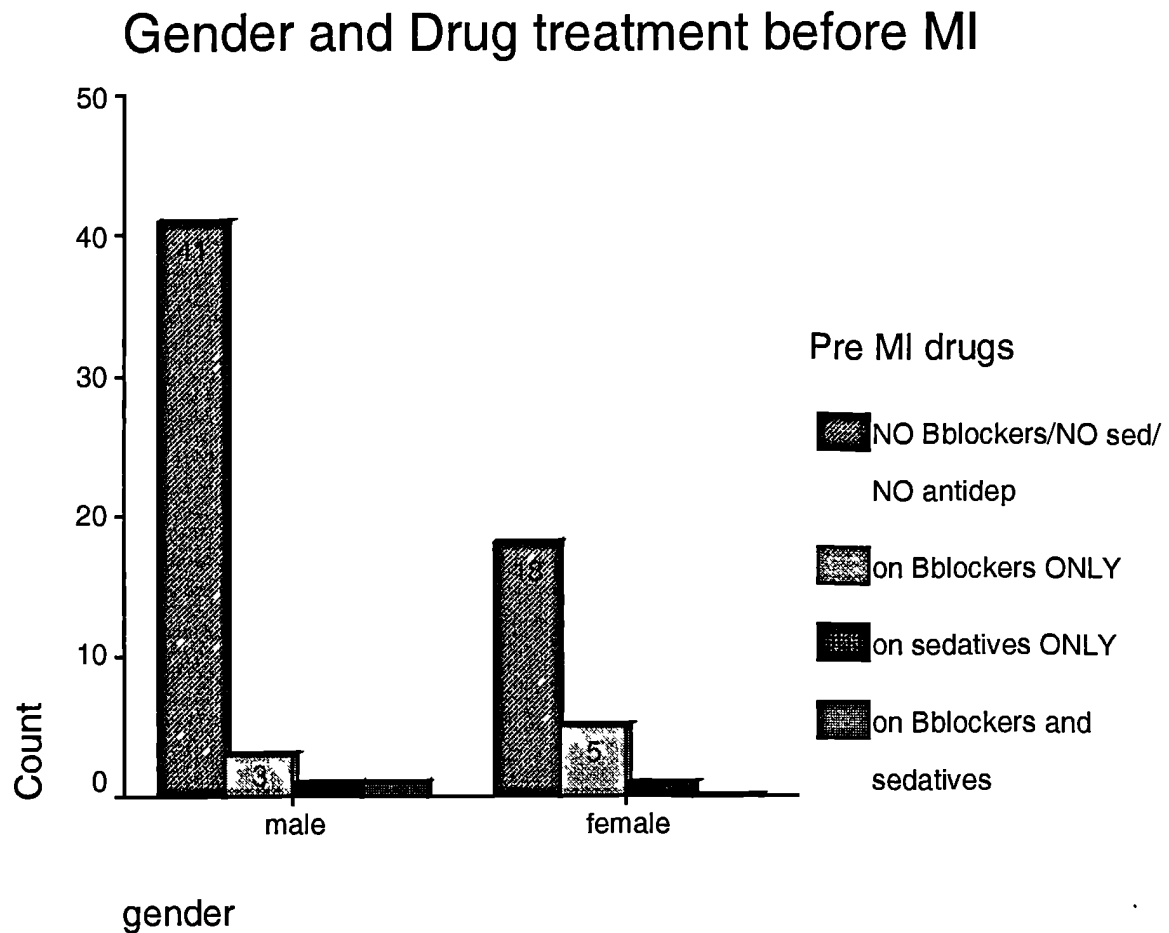


Figure 7.12.1 shows that the majority of patients before MI (84.3%, n=59) had no Beta blockers, sedatives or antidepressants. Only 11.4% of patients (n=8) were on Beta blockers. It is noted that two patients were excluded because they were on antipsychiatric drugs (Appendix K.2., Table K2.5. p.569).

Figure 7.12.2. Frequency of treatment with drugs which may influence mood states by gender on transfer to the medical ward (T2, n=63).

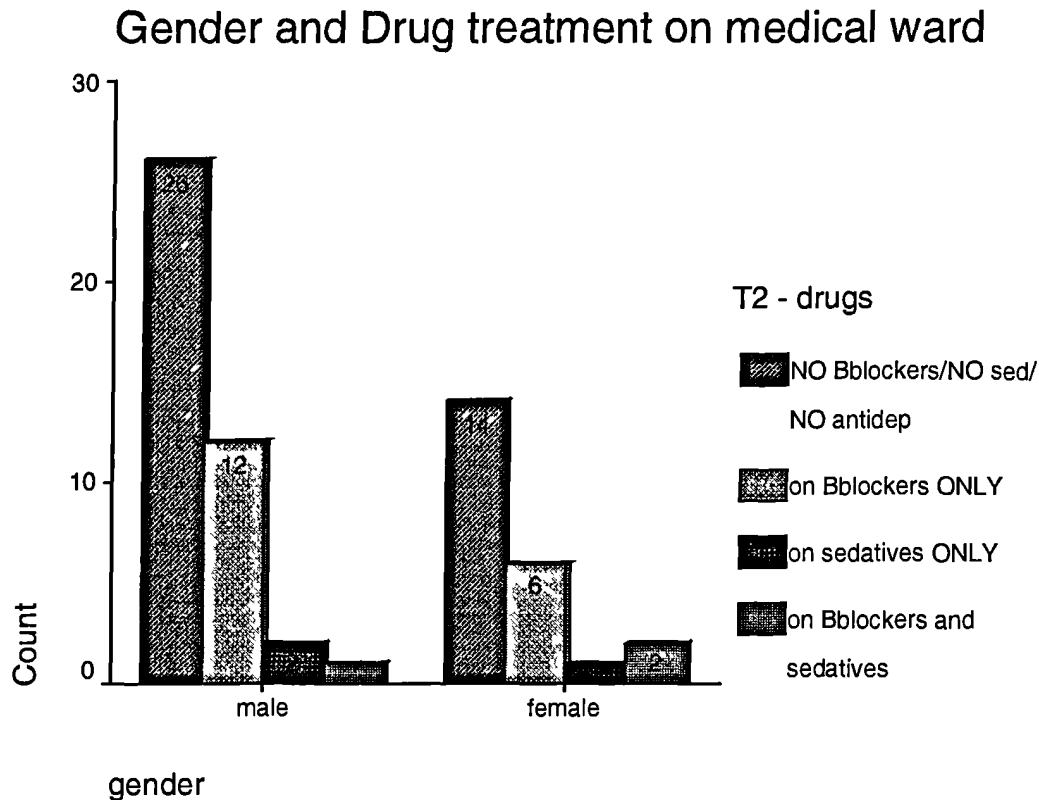


Figure 7.12.2. demonstrates a different picture following MI. The percentage of patients with MI who had no Beta blockers, no sedatives and no antidepressants decreased from 84.3% to 63.4%. Additionally, the percentage of patients on Beta blockers increased from 11.4% to 28.6 %. Therefore, according to the literature, these patients on Beta blockers tend to have lower levels of anxiety and depression than their counterparts, which may be associated with lower levels of SCS. However all these speculations about the relationships between the various personal characteristics and SCS will be clarified by the following inferential statistics. The subsequent discussion and comparison of results with the literature are included in the next three chapters discussing the three hypotheses.

Religious Affiliation : It is noted that all the patients (100%) were Roman Catholic. This high percentage is comparable with the Maltese population, of whom 95% were recorded as Roman Catholic (Gouder 2000).

2. Spiritual coping Strategies (SCS)

This section presents the findings and discussion, supported by comparison of findings with the dearth of published research in preparation for the three hypotheses testing. This section consists of the following four sub sections about the:

- themes and categories of the qualitative data.
- pattern of the SCS across time.
- specific fluctuations with individual differences of SCS across time. These are based on mean scores derived from Repeated Measures Analysis of Variance (RM ANOVA).
- ranking order of the first five SCS, perceived as most helpful by patients.

Due to the dearth of research on these relationships in MI, additional research on oncology and chronic illness was utilised to compare the findings with the published research.

2.1. Qualitative Data : Themes and categories of the use and helpfulness of spiritual coping strategies.

The qualitative data was derived from two face to face semi-structured interviews. The first interview, which was conducted on transfer to the medical ward (T2), identified baseline information about patients' definitions of the terms spirituality and spiritual well being

(SWB). To prevent bias in their responses, patients were interviewed about these definitions before the commencement of the subsequent self-rating questionnaires.

2.1.1. Definitions of Spirituality and SWB

Three themes emerged out of the definition of spirituality that is, a religious (S1) and two non-religious components (S2 and S3), as shown in List No.7.1.

List No 7.1. Themes emerged from the definition of the term spirituality

- **S1. Love and unity with God**
S1a Glorify God with one's actions and suffering
- **S2. A state of harmony in life**
S2a At peace with oneself and others
S2b An orderly life
- **S3. Self-awareness about one's strengths and limitations**
S3a Creative thinking to use one's strengths

The definition of SWB generated two themes oriented towards the religious dimension (SW1) and non-religious dimension (SW2).

List No 7.2. Themes emerged from the definition of the term spiritual well being

- **SW1. A state of harmony in life**
SW1a Peaceful relationship with oneself, others and God.
SW1b Coherence between spiritual / religious beliefs and behaviour
- **SW2. Finding meaning and purpose in life**
SW2a. Having hope in times of illness.

Both definitions indicated a religious orientation of patients, supported by harmony in life and finding meaning and purpose in life, while acknowledging one's potentials to cope with

the demands of illness and life. These definitions are parallel with the literature whereby the constituents of spirituality and SWB incorporate the following components namely:

- living according to beliefs and values (Mansen 1993, Clark et al. 1991, Stoll 1989), harmonious relationships with self, others, environment and/or God (Reed 1992, Stevens Barnum 1994, Hungelmann et al. 1985),
- unifying integrative and creative life force (McSherry 2000, Goddard 1995, Dreyer 1996),
- meaning and purpose in life (Frankl 1962, Clark et al. 1991, Burnard 1988), self-transcendence (Coward 1998, Reed 1991) and
- wholeness (Simsen 1988, Neuman 1995, Henderson 1967).

The two other components, found in the literature were concealed during the first interview, that is, experiencing self growth through life events (Burkhardt 1994, Bradshaw 1996) and positiveness in life (Pelusi 1997, Thomas 1989). This may be because the interview was held too soon following transfer from CCU. However, the second interview did reveal the positive effects of MI and their determination to change their lifestyle.

2.1.2. Patients' reasons for helpfulness of spiritual coping strategies (SCS)

The second interview was conducted on discharge home. This interview revealed retrospectively the patients' reasons for the SCS. Overall, six themes emerged, three from each factor that is, religious coping and non-religious coping . The three themes generated from the religious coping were acceptance of MI from the hands of God, self-transcendence to God and relief of stress. In addition, the three themes identified in non-religious coping

were strong will to live, SWB and acceptance of MI. Since the two common themes of acceptance of MI were integrated together, the following five themes were identified as depicted in (List No 7.3).

List No.7.3. Five themes emerging from the semi-structured interview (USCS) on reasons for helpfulness of spiritual coping strategies.

A. Acceptance of MI

- A.1. awareness of my dependence on God's help
- A.2. cooperation with God's loving plan (do my part)
- F.1. self-awareness about my capabilities and limitations
- F.2. optimism in life
- F.3. appreciate life better

B. Self transcendence to God

- B.1. resultant peace, feeling closer to God, source of life.
- B.2. feeling secure in the hands of a paternal God
- C.3. empowerment to cope with the demands of MI

C. Relief of stress

- C.1. resultant calmness
- C.2. positive outlook to future
- C.3. count my daily blessings (live life one day at a time)

D. Determination to change lifestyle (religious/health)

- D.1. reordering of priorities in life
- D.2. sustaining a strong will to live
- D.3. fulfill my role in family, instrument of unity

E. Maintaining SWB

- E.1. at peace with myself, others, God and nature/environment
- E.2. feeling a sense of completeness, holistic person.
- E.3. offering my sufferings to God for the benefit of others
- E.4. finding meaning and purpose in life

Various English translated quotations, based on these themes and categories, provide the patients' rationale for helpfulness of SCS during hospitalisation. The respective patient is identified by his/her personal code number, known only by the patient and me. The inclusion of qualitative data in this section is minimal as its objective was to help in the

interpretation of the possible two-way relationships between SCS and anxiety, depression and SWB in the subsequent chapters. The code number describes the patient's gender (F = female, M = male) and his/her age.

2.2. Patterns of spiritual coping strategies (SCS) across time, derived from the Helpfulness of Spiritual Coping Strategies (HSCS) scale.

Figures 7.13 – 7.15. exhibit the extent to which patients reported their retrospective use and helpfulness of SCS. The combined SCS are composed of the total scores of religious and non-religious coping strategies.

Figure 7.13. Mean level of (combined) spiritual coping strategies across time

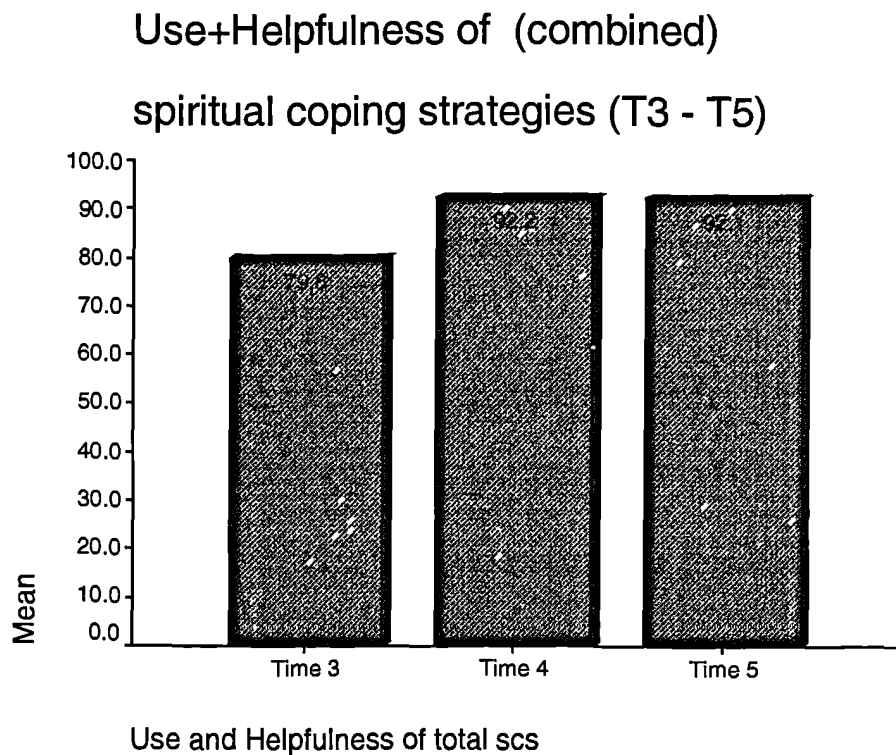


Figure 7.13. exhibits an increase of combined SCS between hospitalisation, that is during the patients' stay in CCU and medical ward (T3) and the first six weeks after discharge (T4) with a slight decline by the third month after discharge. Therefore it appears that both the religious and non religious coping strategies were used to cope with MI, such as prayers and relationship with family, as displayed in Figures 7.14 and 7.15.

Figure 7.14. Mean level of use and helpfulness of (religious) coping across time

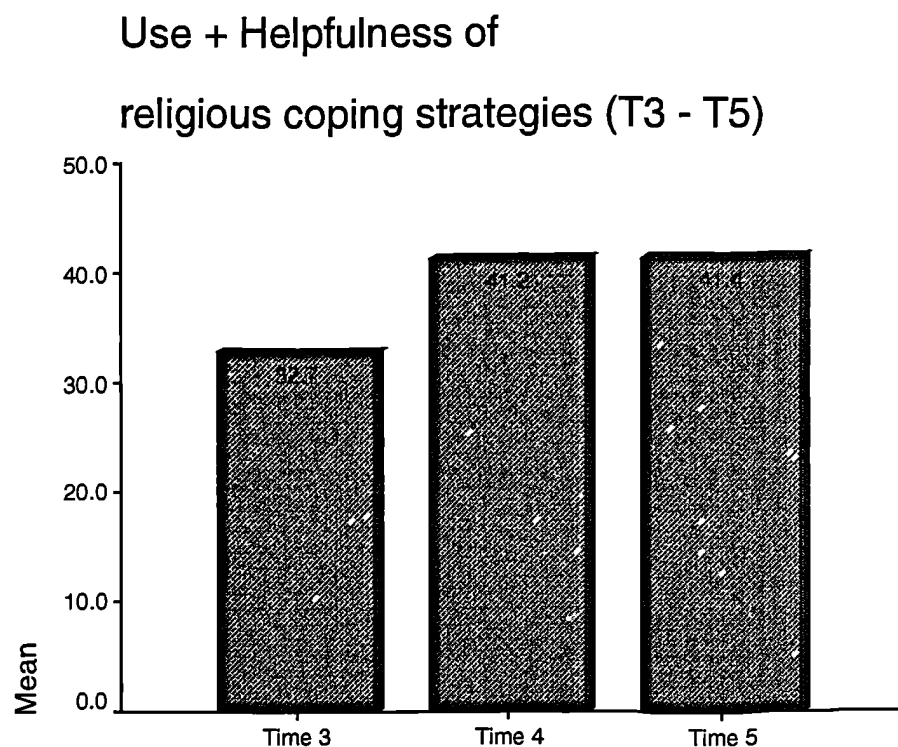


Figure 7.14. exhibits a remarkable increase in the mean scores of RCS between hospitalisation (T3) and the first six weeks after discharge(T4). This is accompanied by a slight increase in the third month after discharge (T5).

Figure 7.15. Mean level of use and helpfulness of (non-religious) SCS across time.

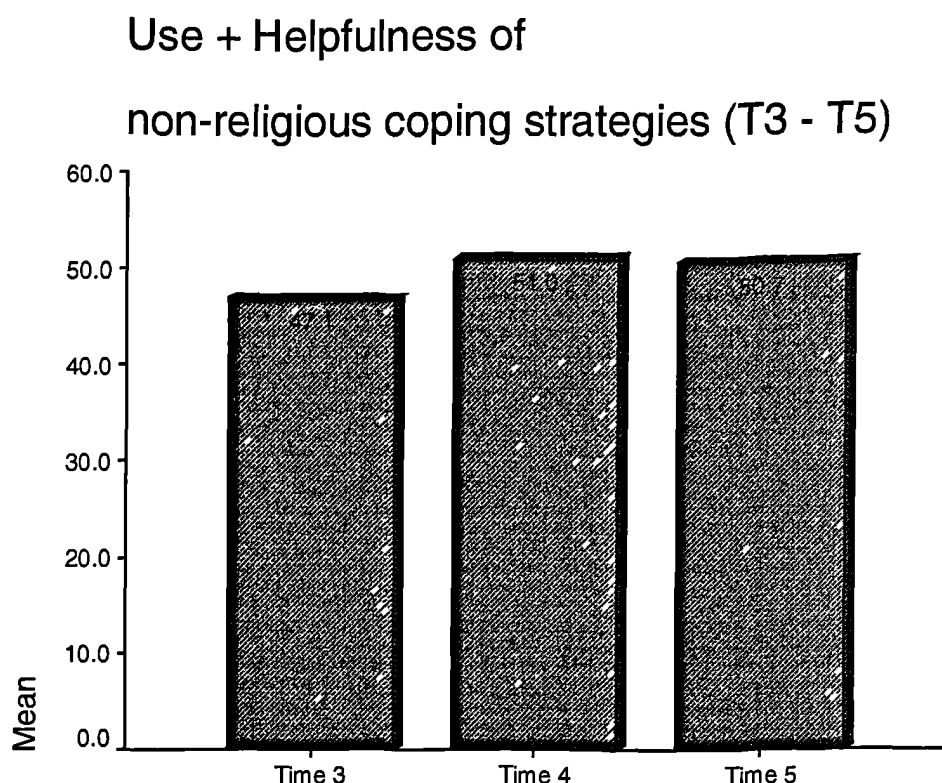


Figure 7.15. demonstrates an increase in the mean scores of the NRCS between hospitalisation (T3) and the first six weeks after discharge (T4) with a slight decline by the third month after discharge (T5). The findings in **Figures 7.13 – 7.15** suggest that patients increased the use of SCS during the first six weeks after discharge. However, the scores of the NRCS decreased by the third month after discharge (Figure 7.15) whilst the religious SCS mean scores increased slightly (Figure 7.14). This infers that religious practices, such as holy Communion, ranked first as most helpful during hospitalisation (T3), relationship with God, ranked first and second, during the first six weeks after discharge (T4) and trusting in God ranked first and second between the sixth and thirteenth week after discharge (T5) (Table 7.4.), may have provided them with security (Koenig 1988) and empowered them to fight against MI (Carson 1989). This is exhibited by the following patient saying:

‘I’m not very religious but I used to attend regularly at the Oratorio..... I feel I have a personal **relationship with God**. I regard God as a merciful Father who loves and looks after everybody. He is just and loving with everybody. So I believe that God helps me always, even in this heart attack, which has deprived me from my usual routine busy life.....I feel secure when I know that somebody up there loves me and takes care of me and my family’. (M4, 59 years)

‘I believe God gives us all the help we need. Yes, even if things don’t work out as planned. Christ came to earth for the sick. He cured the sick in body and soul....., likewise He will cure me if I have faith in Him and if it is beneficial to me. However, I should do my part, my duty to recover from my heart attack. I felt, in my simple and humble way, I must approach God and put my **complete trust in Him**. Knowing that Christ welcomed the sinner and the infirm, gave me the heart to turn to Him and trust Him to carry on with His plan for my life. I believe that if it’s God’s will, I’ll recover from my illness. Sometimes, I do feel guilty when I start to doubt this. Jesus wanted the weak to have faith in Him and I feel that this illness brought me closer to Him and increased my faith in Him’. (M15, 56 years)

Therefore, a personal relationship with God and trust in God appeared to provide them with security as they felt in the hands of a paternal God. Additionally, patient M15 considered the need of cooperation with God to adhere with rehabilitation regime and not simply resign himself to God in idleness.

Furthermore, non-religious coping, such as relationship with friends/relatives ranked second and third as most helpful during hospitalisation (T3), finding meaning and purpose to live through MI, first and second during the first six weeks after discharge (T4) and living day by day, ranked first and second between the sixth and thirteenth week after discharge (T5) may have helped them to overcome problems and participate in lifestyle changes (Acklin et al.1983). This is exhibited by the following three patients saying:

‘Family unity is close to my heart. My husband and I are always together. He came visiting me every day. Even my neighbours came here to see me..... My elder son and his girl friend used to come to me for long hours. Now that I've returned home, my son comes here in his lunch break. He tells me "Even if you can't do anything, it's good to have you here with us." I used to love having them visit. My younger son still needs me, poor him. The other one will get married next year.....(crying) I want to be there, at his wedding (crying)..... and I will be there.....(crying)..... It was good to see the unity of our family. I felt so much better with them around me. It encouraged me no end’.

(F1, 51 years)

‘My wife and I both love each other. She has always shown great respect to me. Although she’s getting on in years, she had learned to drive and does the shopping without having to rely on me. I would like to live on to see my son settled down and have a good life (crying). I would like to see him getting married, having a family but he doesn’t seem the type to be tied down. It helps me want to live. Although I feel fragile, I won’t lose heart. My wife is my treasure. How I long to stay alive....so that before I die, I can see him settled down!’

(M17, 74 years)

‘Today is ours but to-morrow never comes. However one has to think about it. When I was in hospital I expected to be discharged earlier. Then, one fine day the doctor told me that I needed some more investigations, which they did. So I need to take care of myself. I’ll take the medicine of course and stop smoking..... Then I’ll see what the will of God is on me. If I were to look at my life as a whole I would despair. Living day by day helps me to have a better future. I shall forget the past, otherwise I would surely despair thinking of the harm I caused myself with that heavy smoking. So I take this heart attack as a warning and try better for the future. When, I look at my daughter, who is only 14, our spoilt child, after losing three babies before her, I feel eager to see her settled in life. This encourages me to stop smoking because it will help me in the future.’

(M6, aged 56 years)

These quotations suggest that apart from meeting their demands of MI, the patients appeared to re-evaluate their lives and strive to change their lifestyle to achieve important goals in future. These goals were mainly oriented towards the family, a characteristic of the Maltese culture. Additionally, living day by day, may have helped them sustain their determination to look to the future with hope and fulfill their roles and goals in life.

Consequently, the increased scores of SCS throughout the recovery period, sheds light on the decline of anxiety and depression across time (Figures 8.1, 8.2) and the negative correlation between SCS and anxiety and depression (Tables 8.5 and 8.7). Furthermore, the stability in the scores of SWB across time (Figure 9.1.) and the positive correlation between SCS and SWB (Table 9.3.) lend support to the helpfulness of SCS in confronting MI.

2.3. Fluctuations of SCS and individual differences across time derived from the Helpfulness of Spiritual Coping Strategies (HSCS) scale.

Figures 7.13 – 7.15 demonstrate the mean scores of combined SCS, religious and non-religious coping strategies, the fluctuations of which are all significant across time, as shown by the following results of RM.ANOVA:

- **Figure 7.13.** combined SCS (n=51, F = 63.916, df=1, p =.000);
- **Figure 7.14.** religious SCS (n=51, F = 80.566, df=1, p =.000);
- **Figure 7.15.** non-religious SCS (n=51, F = 10.132, df=1, p =.003).

Table 7.2. Paired Samples' t-test identifying where the difference in SCS lies across time.

Time	n	df	T (2 tailed)	P value
Differences in (combined) spiritual coping strategies (SCS)				
T3 – T4	52	51	-8.648	0.000
T3 – T5	51	50	-7.995	0.000
T4 – T5	51	50	0.114	0.910
Differences in (religious) spiritual coping strategies (RCS)				
T3 – T4	52	51	-8.549	0.000
T3 – T5	51	50	-8.976	0.000
T4 – T5	51	50	0-.259	0.797
Differences in (non-religious) spiritual coping strategies (NRCS)				
T3 – T4	52	51	-4.068	0.000
T3 – T5	51	50	-3.183	0.003
T4 – T5	51	50	0.393	0.696

Comparison of times by paired sample t-test were significant at $p \leq 0.017$, which meets the criteria of the Bonferroni correction ($0.05/3 = 0.017$) to decrease chances of Type I error.

Table 7.2. demonstrates significant differences in mean scores of SCS between hospitalisation (T3) and the first six weeks after discharge (T4) and between the sixth and thirteenth week after discharge(T5). In contrast, no difference was identified between the first six weeks after discharge (T4) and the thirteenth week after discharge (T5) due to the stable scores of the three types of SCS.

2.4. Individual differences in scores of SCS across time derived from the Helpfulness of Spiritual Coping Strategies (HSCS) scale.

In an attempt to identify the individual differences in SCS across time, the difference in SCS scores of each patient were calculated and plotted against the original value on discharge home which reflects the duration in hospital (T3), as shown in scattergrams (Appendix K4. Figures K4.1. – K4.6. pp.579-584) and Table 7.3.

Table 7.3. Changes in levels of total spiritual, religious and non-religious coping across time, derived from the HSCS scale

Changes in scores	T4 – T3 n=53	T5 – T3 n=51
	%	%
Combined spiritual coping strategies		
No change	3.7	1.9
Decreased level	11.3	11.8
Increased level	84.9	86.3
Religious coping strategies		
No change	3.7	3.9
Decreased level	13.2	9.8
Increased level	83.0	86.3
Non-religious coping strategies		
No change	5.7	1.9
Decreased level	22.6	5.3
Increased level	71.7	62.7

Combined SCS : Table 7.3. indicates that 84.9% of patients (n=45) reported increased combined SCS six weeks after discharge (T4). The findings revealed that those patients who started off with extreme low scores in SCS on discharge home, that is during hospitalisation (T3), increased radically during the first six weeks after discharge (T4) between +4 and +28. Similarly, those patients who scored high in SCS increased their high scores. Additionally, 3.7% of patients (n=2) had no difference in SCS level whilst 11.8% (n=6) scored less, between -1 and -9 (Appendix K.4., Figure K.4.1. p.579).

Additionally, the increased scores were sustained by the third month after discharge (T5), as only 11.8% (n=6) had a decrease in SCS and another patient who remained with the same score. Furthermore, it was found that 86.3% (n=44) had an increase in scores of combined SCS when compared to the original score, that is during hospitalisation (T3). Therefore, both the ones who started off with high and low scores in SCS, sustained their scores in SCS by the third month after discharge (T5) (Appendix K4, Figure K.4.2. p.580).

This may explain the reason why the findings are inconsistent with the published research. Research provides evidence that anxiety and depression may peak on the sixth week (Thompson et al. 1987) which may subside by the third month after discharge (Havik and Maeland 1990, Wiklund et al. 1987). However Figures (8.1. and 8.2) showed persistent decline in anxiety and depression across time, which were inversely correlated to SCS (Tables 8.5 and 8.7). This may be due to the use and helpfulness of SCS, both religious and non-religious, such as prayer and accepting MI as a source of coping.

Religious coping strategies : Table 7.3. exhibits increased scores in the RCS during hospitalisation (T3) between +1 and +22. Once again, those patients with extreme low scores during in hospital reported higher religious coping. A minority of 3.7% (n=2) remained with the same scores whilst 13.2% (n=7) had a decrease in scores between -1 and -6 (Appendix K.4., Figure K.4.3., p.581).

Similarly, it was found that 86.3% of patients (n=44) had an increase between +1 and +21. Therefore, those patients who started off with extreme low scores in hospital kept their increased scores of RCS by the third month after discharge (T5). Additionally, 3.9% (n=2) remained with the same scores, whilst a minimum of 13.2% (n=7) had a decrease in scores between -1 and -6. Hence both the patients with extreme low and high scores persevered in their religious practices across time (Appendix K.4. Figure K.4.4., p.582).

Non-religious coping strategies: Table 7.3. shows an increase in scores of NRCS on discharge home in 71.7% of patients (n=38). This increase was between +1 and +16. Additionally, 5.7% (n=3) had the same scores, whilst 22.6% (n=12) had a decrease in scores during the first six weeks after discharge (T4) of -1 to -9 (Appendix K.4. Figure K.4.5., p.583).

Additionally, an increase in NRCS was found in 62.7% of patients (n=32) in the range of +1 and +16 between the sixth and thirteenth week after discharge. Also, a reduction is shown in 35.3% (n=18) between -1 and -10. Therefore, it appears that the number of patients reporting less NRCS (22.6%, Table 7.3) is higher than that reported at six weeks after discharge (T4) (5.3%, Table 7.3.) (Appendix K.4. Figure K.4.6., p.584).

On comparing the scores of RCS with NRCS, it appears that the patients sustained their increase in the religious coping more than the NRCS (Table 7.3). This may be because in illness, patients may turn to their religiosity to cope with the demands of MI, which may result in stronger faith (Koenig et al. 1988, Reed 1987) as stated by a younger patient:

‘I do have faith in God, but I can’t drum up much enthusiasm in religious things. Not only that, but I feel I’ve treated Him badly for so long that He might soon lose patience with me. However, this MI he sent me makes me think it’s only the beginning to a journey to change my way of lifeI must admit, I deserved this heart attack..... My father was always there for us. Likewise, I feel God sent me this warning because He loves me, and not to punish me for my sins. It makes me look upon God as an ever loving father, rather than a tyrant..... God is trustworthy and it pays to entrust everything to Him, because He is so like my father, who loved us dearly’. (M35, aged 44 years)

This was demonstrated by (Figures K.4.1. – K.4.6., Appendix K.4. pp. 579-584) which revealed that patients who started off with high scores during hospitalisation (T3) remained constantly high whilst those with extreme low scores increased the SCS on discharge home and constantly retained their high scores six weeks during the first three months after discharge (T5). Thus, it appears that the SCS measured in this study were perceived by patients as beneficial in coping with MI. Therefore, further experimental research is suggested on specific SCS, such as prayer and positive outlook to life, to assess their influence on the recovery period following MI.

The constant high scores of SCS may be due to the life threatening illness of MI which confronted the patients unexpectedly. Thus, according to Lazarus and Folkman (1984), on appraising the stressful situation, patients may use problem focused coping strategies to cope with stress, such as seeking more information and direct action, such as change of lifestyle. These strategies might not be new to the patient, as according to Lazarus and

Folkman (1984) every individual has his/her own repertoire of strategies from past experience. Additionally, affective coping strategies may be used, such as alienation techniques, which may deviate them away from the stressful situation for a short time. Additionally, the patient may turn to his religious beliefs to cope with stress (Lazarus and Folkman 1984, Reed 1986, Koenig et al. 1998, Otto 1950).

Otto (1950) claims that during appraisal of a threatening situation, the patient may feel self-insufficient to cope, which may lead to the *numinous* experience. Otto (1950) explains that during the *numinous* experience, the patient considers the nothingness of him/herself and longs to reach a higher power, that is God, as defined by the respective religion. Consequently, self-transcendence to God may help the individual to become empowered to cope with the stressful situation with the perceived assistance of God. This is exhibited by the following (Table 7.4) whereby patients found both specific religious and non-religious coping strategies which were perceived as most helpful.

3. Rank order of the five SCS, perceived as most helpful, derived from the Helpfulness sub scale of HSCS scale.

Table 7.4 demonstrates that during hospitalisation (T3), one NRCS (No 12) and five RCS (Nos 1, 2, 8, 18, 19) were perceived as most helpful to cope in the early stage of recovery (T3) of MI. It is noted that receiving Communion was ranked as the first most helpful during hospitalisation. During the first six weeks after discharge (T4), four NRCS (Nos 3, 9, 12, 17) and three RCS (Nos 2, 18, 19) were found most helpful to cope with their illness.

Table 7.4. Rank order of the first five SCS perceived as most helpful to cope with MI which were deduced from the helpfulness scale of HSCS scale.

Spiritual Coping Strategy and statement Number on H. S.C.S. scale	T3		T4		T5	
	During hospitalisation		First six weeks after discharge		6 th – 13 th week after discharge	
	Rank	Mean	Rank	Mean	Rank	Mean
*1. Personal Prayer	5 th 6 th	2.88			5 th 6 th	2.92
*2. Relationship with God	4 th	2.92	1 st 2 nd 3 rd	2.96	4 th	2.96
3. Relationship with friends / relatives	2 nd 3 rd	2.94	4 th 5 th 6 th 7 th	2.94	1 st 2 nd 3 rd	3.0
*8. Religious music / programme on radio / TV	7 th	2.80				
9. Living day by day, hoping that things will get better			4 th 5 th 6 th 7 th	2.94	1 st 2 nd 3 rd	3.0
12. Finding meaning and purpose in life	5 th 6 th	2.88	1 st 2 nd 3 rd	2.96	5 th 6 th	2.92
*15. Attending church for religious practices					7 th	2.91
17. Helping others as a means of giving love/peace to others			1 st 2 nd 3 rd	2.96		
*18. Trusting in God, hoping that things will get better	2 nd 3 rd	2.94	4 th 5 th 6 th 7 th	2.94	1 st 2 nd 3 rd	3.0
*19. Receiving Communion	1 st	2.96	4 th 5 th 6 th 7 th	2.94		

* classified as religious coping strategies (RCS) by Factor Analysis.

The shaded area exhibit the coping strategies ranked as most helpful across time.

The ties in the mean scores of SCS rendered the ranking order to have more than one SCS in each rank.

Table 7.4 demonstrates that between the sixth and thirteenth week after discharge (T5), three NRCS (Nos 3, 9, 12) and four RCS (Nos 1, 2, 18, 19) were reported as most helpful in their recovery. Furthermore, Table 7.4. shows two RCS (Nos 2, 18) and two NRCS (Nos 3, 12) which were rated as helpful across time. The relationship with God and trusting in God, hoping that things will get better (Nos 2, 18) were found helpful because God was viewed as a merciful, loving father who was perceived as being available to help them and instill hope in their future stating:

'I feel God in my life as a dear father who takes care of me and of everyone. He is everywhere. We cannot do anything without His help. I feel I'm living with God all the time. I talk to Him as my friend. So I feel that I'm praising God through my own life, even in this heart attack. I can trust Him that he gives me help to endure this illness and return to my normal life. However, I commit myself to His will, "What you want Oh Lord, I want it myself". This is how I relate to God as my father, ready to help me'.
(M70, 77 years)

This is supported by literature which suggests that a belief in a paternal God may help in coping with illness and relief of stress (Koenig 1998, Woods Smith 1995). Thus, it appears that when an individual perceives a particular spiritual coping strategy as helpful, the patient may identify the beneficial effect of the use of the respective SCS.

Additionally, the NRCS of relationship with friends and relatives (No 3) reflects the culture in Malta, regarding the support of friends and the closely knit family network in times of illness as described by this patient:

My family used to visit me regularly. I feel strongly satisfied that although I was in hospital, my family kept supporting me. My family is first priority in life..... Guess who came to see me in hospital? My brother and his wife, with whom we were not on good terms for a long time. I always advise my children as best as I can to know how to keep their family at peace and united. I appreciated the fact that my love to them was reciprocated while I was in need'.
(F54, 61 years)

Consequently, the older patients considered their role of using their wisdom and maintaining stability in their environment (Watson 2001) by advising their younger relatives and preserve family unity. The middle-aged patients who had younger children explained their role of nurturing them by their presence until they see them settled in life. This is comparable with the literature whereby supportive people, for example, family members, friends and support group enhanced adaptation to illness (Belcher et al. 1989,

Koenig et al. 1988). Furthermore, finding meaning and purpose in life (No 12) is congruent with the literature, whereby patients stated that this coping mechanism illuminated their experiences and integrated their recovery and life process (Sodestrom and Martinson 1987, Hungelmann et al. 1985, Acklin et al. 1983).

Furthermore, personal prayer (No 1), living day by day (No 9) and receiving Communion were rated as helpful over two time periods. Personal prayer and Communion were perceived as helpful during hospitalisation and during the sixth and thirteenth week after discharge, stating:

‘I prayed mostly to Our Lady and the Redeemer. During the day, even when I was in hospital, I often dialogue with God and regard him as a merciful Father. I pray for his help needed at the moment, especially now that I had this heart attack. Before I go to bed I praise Our Lady in thanksgiving for the graces I received during the day and to have a good night. I feel I live in the presence of God day and night. I feel united to God and rest assured that someone powerful is looking after me and gives me courage to keep going, even in this unexpected illness’.

(M48, 66 years)

This is substantiated by Carson (1987) who explains that through prayer and other rituals, such as Communion, the patient feels the power of God and adopts it to combat illness and overcome loneliness. Conversely, living day by day (No 12) was rated as helpful during both times in the first three months after discharge home. It appears that following the acute phase in CCU and the early stages in a step-down ward, the patient realised the preciousness of life and learnt to live the present and appreciated life better to overcome uncertainty of their future health status (Belcher et al. 1989, Hungelmann et al. 1985).

Furthermore, two coping strategies were reported as helpful once. Helping others (No 17) was reported as first, second and third most helpful coping strategy during the first six weeks after discharge (T4) stating:

‘I’m finding this interview of help, because for me personally I feel it a great comfort and also because due to this information, other patients can benefit..... When I was in hospital, I was like Florence Nightingale, helping the patients with their needs, speaking with them by their bedside, and even making them laugh. Poor people, weak in bed! I feel a great satisfaction helping others, I feel really at rest. If I were myself in their position, I would want persons to take care of me’. (F45, 82 years)

Religious music (No 9), rated as seventh during hospitalisation (T3), was considered helpful as it was associated with reciting the rosary to Our Lady in the evenings. Before the recital, the majority of patients enjoyed hearing the tune of Ave Maria, followed by the night prayer sung after the rosary. This music helped them to transcend to God and glorify Him for saving their life from MI.

This ranking order is supported by Smith Baldree et al. (1982) who, in a sample of 35 American patients on haemodialysis, found that the coping mechanisms used were, maintaining some control over the situation (ranked first), hoping that things would get better (ranked second), praying (ranked third) and looking at the problem objectively (ranked fourth). Worrying (ranked fifth), accepting the situation as it is (ranked sixth) and thinking through different ways of solving the problem (ranked seventh).

Consequently, the first four coping strategies most helpful were positive mechanisms followed by a negative one. Riley (1998) point out that negative coping may lead to adoption of maladaptive mechanisms, such as alcohol drinking, which inhibits recovery from illness. In contrast to the culture in Malta, family support was not prominent in this chronic illness of haemodialysis. This may be because the patients professed their uneasiness ` caused by the overprotection and excessive amount of attention to the illness (Smith Baldree et al. 1982).

Conversely, Koenig et al. (1988) found only 11.1% of older persons, aged between 55-80 years, who obtained family and friends support. Being of older age, they might have had fewer members of family and friends. Additionally, living in USA, the patients' family and friends may have not been within easy reach to help in stressful events. However, Maltese patients considered the preciousness of their spouse and family in their recovery. This may be due to the closely knit family network and the small distances on the island.

The helpfulness of SCS is supported by the following published research. Keckeisen and Nyamathi (1990), in a sample of 30 American patients with MI, of whom 83% were male, found after a month of MI, a positive relationship between psychosocial adjustment and increased problem focused coping, for example, talking to other patients with MI and seeking information. Thus, they were better able to cope with the demands of illness and adjust themselves with less difficulty. Similarly, Agarwal et al. (1994), in a sample of 70 male Indian patients with first MI, found a positive relationship between positive life orientation (PLO) and their perceived recovery. This led to an increased sense of personal control after a month with MI, supported by higher hopes for the future. Thus, it appears that optimism in life leads to adoption of healthy adaptive modes in the recovery period of MI.

Furthermore, religious practices appeared to play an important role in illness. Hungelmann et al. (1985) found that all the believers, in the sample of 31 older American persons, who were healthy or terminally ill, considered relationship with God through prayer and worship. Also, most of them had religious objects, such as Bible, prayer books and icons which were used for private prayers, leading to SWB by finding meaning and purpose in life. Acklin et al. (1983), in a sample of 44 American patients, 26 with malignancy and 18

with non-life threatening illness, found that the relationship between transcendent meaning and intrinsic religiosity was greater than that with extrinsic religiosity. Therefore search for meaning in life through prayer and relationship with God, appears to enhance coping with the uncertainties of cancer and other illness.

This is convergent with the findings of Sodestrom and Martinson (1987), Koenig et al. (1988), Saudia et al. (1991) who discovered that religious coping, such as a trustful relationship with God, personal prayer were found helpful in coping with the illness crises. In the light of these findings, research provides evidence about the positive impact of spiritual coping mechanisms, with or without religious strategies. This implies that assessment of patients' coping strategies is important in holistic care in order to facilitate these strategies to enable the patient meet his/her individual spiritual needs.

Summary

The findings revealed increased levels of SCS across time. R.M. ANOVA identified significant differences in the combined spiritual, religious and non-religious coping strategies across time. According to the Paired samples t-test, the differences lay in the combined spiritual, religious and non-religious coping strategies between hospitalisation (T3) and in both times after discharge that is, the first 6 weeks (T4) and between the sixth and thirteenth week after discharge (T5). However, no significant differences were exhibited between the first 6 weeks (T4) and the sixth to thirteenth week after discharge (T5) as the scores of spiritual coping strategies remained stable (Table 7.2).

Comparison with literature was impossible as no research was traced. According to Lazarus and Folkman (1984) an individual appraises the stressful situation as challenging, loss or threatening while evaluating the coping resources possible. Thus, the person may turn to his/her past coping mechanisms to manage stress or may turn to new ways of coping, depending upon his/her environment. Both the quantitative data and the qualitative data demonstrated the increased use of both the religious and non-religious coping strategies to cope with the demands of MI.

It was found that the Maltese culture played an important role in coping by family support and the use of religious coping strategies, being all Roman Catholic. According to Otto (1950) the *numinous* experience triggers the patient to self transcend to God by means of personal prayer and/or trustful relationship with God, resulting in empowerment to cope with stress. During this process, the individual keeps on evaluating the current situation and modifies the spiritual coping strategies accordingly. Consequently, the findings on individual differences across time revealed that those patients who started off in hospital with lower scores in spiritual coping strategies, including the religious, had increased scores after discharge. This is parallel with the published research, which suggests that patients may turn to their religiosity to cope with the demands of illness (Saudia et al. 1991, Koenig et al. 1998, Reed 1986).

CHAPTER EIGHT

Relationship between spiritual coping strategies and anxiety and depression

The aim of the study is to identify relationships between SCS and anxiety, depression, SWB and personal characteristics of Maltese patients with first MI from transfer to the medical ward to the first three months after discharge.

This chapter seeks to test Hypothesis No 1 stating:

- H1** There will be a **negative** relationship between SCS and anxiety and depression during hospitalisation and the first six weeks after discharge.

To achieve the aim of the study and test the hypothesis, the following objectives were achieved.

- measured the levels of anxiety, depression by HAD scale (Zigmond and Snaith 1983) and SCS by the HSCS scale,
- explored the patients' rationale for the helpfulness of SCS in relation to anxiety and depression,
- specified patterns and fluctuations of results, including individual differences in anxiety and depression across time,
- discovered any statistical correlations between SCS and anxiety and depression across time.

To enhance the flow of sequence of the above objectives, this dual chapter amalgamates the findings with the discussion, which is subdivided into following five subsections:

- Patterns of anxiety and depression across time,
- Correlation between scores of anxiety and depression across time,
- Specific fluctuations of anxiety and depression in mean scores of anxiety and depression across time,
- Individual differences between pairs of time periods,
- Statistical correlations between SCS and anxiety and depression.

The discussion of findings is supported by quotations from the patients' interview and compared with the published research. Additionally, the theoretical framework of stress and coping (Lazarus and Folkman 1984) and the *numinous* experience (Otto 1950) provide rationale for the result of Hypothesis No 1.

1. Patterns of anxiety and depression across time.

Figure 8.1. Mean scores of Anxiety across time

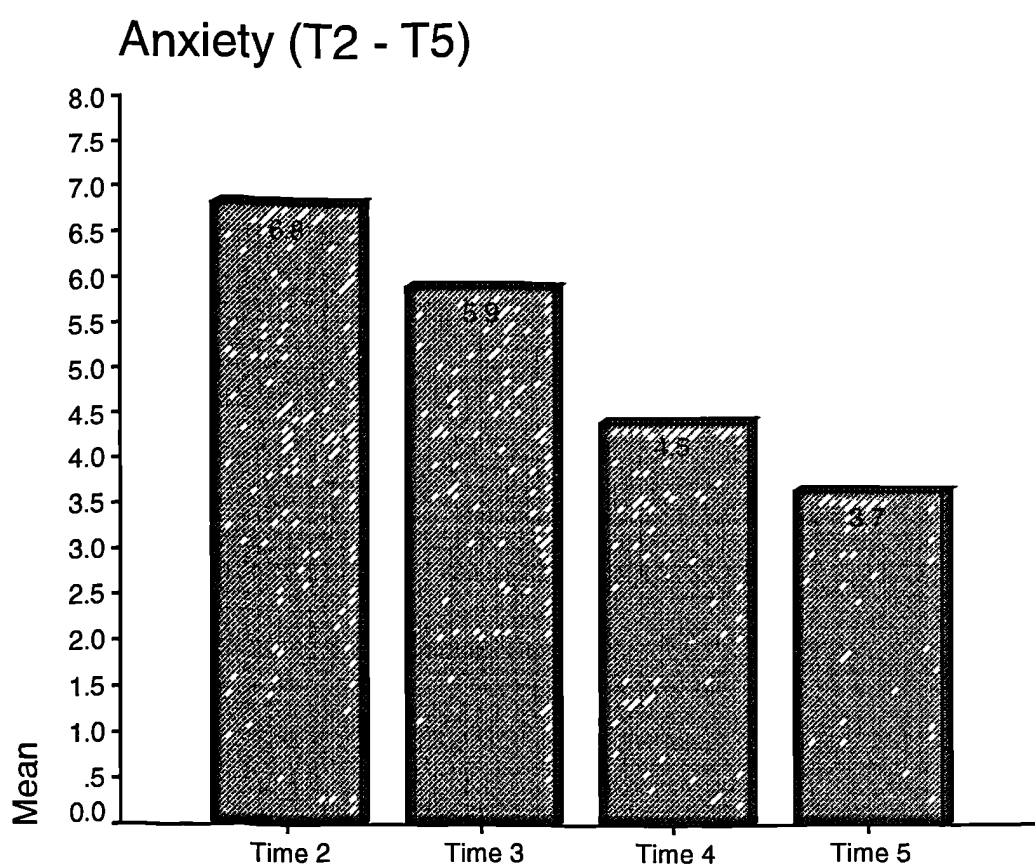
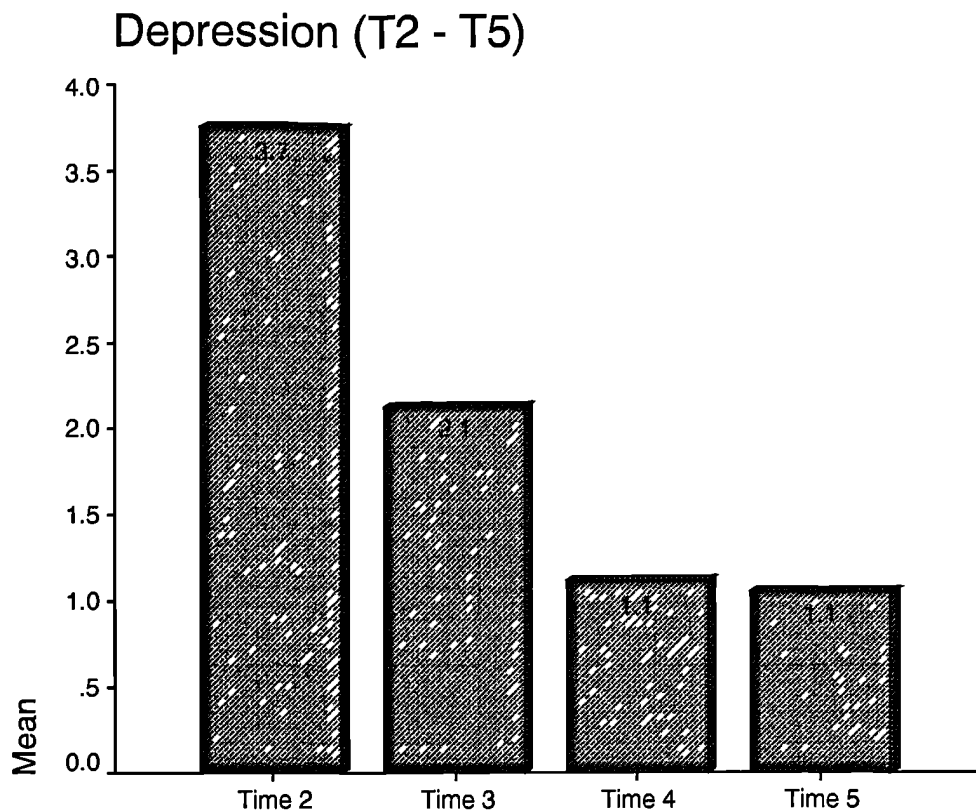


Figure 8.1. demonstrates a consistent decline of scores of anxiety across time. On comparison of anxiety and depression scores. Figure 8.2. exhibits a similar pattern of a consistent decline across time. However, anxiety scores are more pronounced than the scores of depression.

Figure 8.2. Mean scores of depression across time



DISCUSSION

The decline in anxiety and depression between transfer to the medical ward (T2), discharge home (T3) and the sixth week after discharge (Figures 8.1 and 8.2), is inconsistent with the published research. However, the return of patients' scores of anxiety and depression to normal levels by the third month after discharge (T5) is parallel with research which states that the increased levels may subside by the third month after MI (Havik and Maeland 1990 and Wiklund et al.1984).

Thompson et al. (1982) found a higher level of anxiety at six weeks after discharge in a sample of 20 English patients with MI. Similarly, Thompson et al. (1987), in a sample of 100 English male patients with MI, found low levels of anxiety prior to discharge home,

followed by an increased level of anxiety 6 weeks after discharge, which decreased to its lowest level at one year. In contrast, Wiklund et al. (1984), in a sample of 201 Swedish men with first MI, found a persistent high level of anxiety and depression on the eighth week and during the first year after discharge. This was associated with the event of MI as comparison with the reference healthy group revealed significant differences between the two groups in both times.

Moreover, Havik and Maeland (1990), in a sample of 252 patients with MI in Norway, found an increased level of anxiety during the first one to two weeks after discharge. Furthermore, Crowe et al. (1996) in Canada, found higher levels of anxiety and depression in both the experimental group with MI (n=201) on rehabilitation programme and the control group on usual care of MI (n=785). Both the scores of anxiety and depression decreased by the fourteenth week and remained low up to the fifty sixth week after MI. Thus, it appears that the experimental group, mean age of 55 years, was helped by the rehabilitation programme whilst the control group, mean age of 61 years, might have used other coping strategies, such as family and friends' support, and religious coping strategies (RCS), such as prayer to God, their source of life.

It is well documented that teaching programmes and counselling in the recovery periods are beneficial to the patients (Thompson 1989, Havik and Maeland 1990). Presently, patients with MI in the local general hospital in Malta are only visited once by a part-time occupational therapist who explains the rehabilitation leaflet to patients. Thus, it is recommended that patients with MI in Malta be supported more by official rehabilitation programmes comprising teaching, counseling and regular follow-up sessions after discharge. Additionally, further research is suggested on Maltese patients, by recruiting

reference groups for comparison purposes, such as healthy patients from community and patients with chronic diseases, such as Diabetes Mellitus, patients on haemodialysis and constant ambulatory peritoneal dialysis (CAPD).

Moreover, rehabilitation programmes may serve as a support group which appears to help in the recovery of MI. The benefits of rehabilitation programmes was a means of socialising with other patients with MI (Stewart et al. 2000) and improvement in the bio-psycho-social and spiritual well-being of patients with breast cancer (Rutledge and Rayman 2001). This improvement consisted of increased hope in a better future and finding purpose in life. In Malta, there are some active support groups, such as Mastectomy, Multiple Sclerosis and Diabetes support groups. Thus, further experimental research is suggested in Malta to identify the possible influence of support groups on the recovery of chronic disorders. This may lead to the initiative of founding a support group for patients with MI.

Overall, the published research revealed that anxiety and depression may increase on discharge (Havik and Maeland 1990) and may peak again at about six weeks post-discharge (T4) (Thompson et al. 1987, Thompson et al. 1982). This increase may subside by the third month (Havik and Maeland 1990, Wiklund et al. 1984) and may become to the lowest values by the first year after MI (Thompson et al. 1987). It was reported that the increased level of anxiety and depression after discharge was due to the loss of security from the assistance of the health care team (Terry 1992, Toth 1987). Additionally, uncertainty of the future, lack of information from the multidisciplinary team and the process of life style changes were considered as sources of anxiety and depression (Stewart et al. 2000, Rom 1994).

In contrast, Havik and Maeland(1990) found lower anxiety levels on discharge home due to a high or intermediate score of denial of patients who reported less anxiety and depression (Havik and Maeland 1990, McCorkle 1985, Malley and Menke 1988, Taylor and Ferszt 1984).

However, the patients were aware of the seriousness of MI as it was one of the set criteria.

This is exhibited by a younger patient saying:

‘I had a stomach upset and I was treated by antacids. However, the chest pain persisted. Then, when I vomited and had pain in my arm I realised that it could be related to my heart. In my village, I know of a man who had just retired and died all of a sudden due to a severe heart attack. I was fearful, so I went to the health centre. By then, the chest pain subsided. Once again, I was given antacids. Then, I could remember another 55 year old man who went diving and was found dead on the shore. This man was also certified as having died due to a heart attack..... I kept on thinking (*paused*)....and worrying...hoping that my pain was not a heart attack at my age of 40 years. Two days later, I sweated with chest pain again, but this time I came straight to hospital, as I had a funny feeling that it is something serious. Here I am certified also as having a heart attack like the two I mentioned. I was scared to death.....very disappointed indeed.....(*crying*). (M67, 40 years)

Figures 8.1 and 8. 2 exhibit that anxiety is more pronounced than depression. However, anxiety and depression are in a constant decline, which became stable by the third month after discharge. This inconsistency with the literature may be due to the culture of Maltese people, the small distances in the island, the residual sample, the use of SCS by patients and the researcher’s visit in hospital and at home. Firstly, discharge home in Malta may be equated with restored health and the renewal of a familiar life pattern in a family centred environment. Patients and spouses are often contented with a major reduction in activity on discharge following a severe illness and a curtailed activity schedule during the recovery phase.

Moreover, in times of illness, the patients in Malta may receive great support from the family, friends and / or neighbours. For example, two patients, one lived alone and the other with his wife, were discharged to their daughter's house for protection during the first weeks of recovery. Another female patient, who lived alone, although she went straight home, she was assisted closely by her neighbour and her married daughter, through telephone and frequent visits. Another female patient, whose husband worked on night duties, had a niece sent to her at night for security purposes. Thus it appears that family and neighbours' support may be a source of coping with MI and relief of anxiety and depression.

Secondly, medical assistance can easily be reached in the small island of Malta. This is because of the small distances on the island and the availability of the physicians, both in the nearby private clinics and district health centres. Thirdly, although the original sample on recruitment was a homogenous group, the ten patients lost between hospitalisation (T2) and discharge (T3) may have been more anxious than the rest. (Appendix K.2., Table K2.13. p.573) shows that the reasons for the loss of the ten patients were withdrawal from the study on personal reasons (n=3), development of complications of MI (n=2), death due to aortic aneurysm (n=1) and short listing for coronary artery bypass graft (CABG) within the first three months of data collection (n=4).

Fourthly, Maltese people tend to express their emotions with those in whom they can confide. Since, during illness, the Maltese family members feel obliged to pay a visit to their relative in hospital, including the work colleagues, the visiting time may be a source of relief of stress. This happens even when there is friction in relationships. For example, three patients stated that they reconciled their relationship with a brother or a sister which

had been broken for many years. A common statement was that this heart attack served to reunite the family.

Additionally, it is a common practice that in severe illness, such as MI, the work manager pays a visit to the patient and explores the possibility of tailoring the work according to his needs along the recovery phase. Therefore, Maltese patients may channel their anxiety to their visitors, family and colleagues. Hence, Maltese culture appears to make a difference in the findings of anxiety and depression levels from those studies conducted in other countries, such as Taiwan (Chiou et al. 1997), Sweden (Wiklund et al. 1984), Norway (Havik and Maeland 1990) and Australia (Terry 1992). Therefore, it is recommended that the daily fixed visiting times in the local general hospital be extended during the day to allow the patient more opportunity to allay his/her worries.

Fifthly, Malta is highly dominated by Roman Catholic Religion. Gouder (2000) states that 95% of the population are recorded as Roman Catholics. Additionally, the census in 1995 revealed that 63% of the Roman Catholics attend church for Holy Mass every week (DISCERN, 2001). Figure 7.11 shows that 82.9% of the sample reported attending church for religious practices *often* and *very often*. This higher percentage may be due to the nature of sample consisting of 57% (n=40) aged 60-89 years, who tend to be more religious (Reed 1986, Koenig et al. 1998, Kaczorowski 1989). Therefore, the use of RCS, such as prayer and relationship with God may have contributed towards the decline in anxiety and depression as demonstrated by a patient stating:

‘When I was in CCU I prayed spontaneously to God to help me in that poor state. In the meantime, my wife and I will be moving shortly to help my daughter who is expecting twins (*paused*)..... She had a great shock when she was told she was bearing twins, but I’m praying for her so that

she'll be able to keep up with them. We want to help her as well. So I prayed heartily to our Eternal Father and Our Lady to help me go through this situation patiently. I feel that this spontaneous dialogue "between Him and me" helps me a lot. The words of Christ "Without Me you can do nothing" drives me to turn to Him for help. Yes, I believe that without God, I am helpless. I believe that prayer guides my life. Then, when I was in the medical ward, fortunately, I happened to be in a single room..... I took this opportunity to read the Bible and praise God for saving my life. This heart attack came so much all of a sudden that I thought I was on the point of death.... This spiritual bonding with God kept me calm, thinking that I was in God's hands'. (M3, 66 years)

Furthermore, it is argued that other factors may have influenced such a decline in anxiety and depression, such as absence of symptoms of MI like chest pain and dyspnoea on exertion. Hence, further phenomenological research is suggested to explore the rationale for decreased levels of anxiety and depression.

Finally, the interviews revealed lack of information from the multidisciplinary team.

Therefore, the fact that I visited the sample in hospital and at home for qualitative data collection, may have rendered lower levels of anxiety and depression across time. This is because, at the end of my visit, I allowed time for their queries and also referred them to the respective contacts, such as dieticians, physicians and radiographers, as exhibited by five patients, one of whom said:

This interview helped me to talk about what I've been through. I'm a very sensitive person..... You helped to relieve my mind and soul. I never expected this heart attack, although I'm getting older (laughing).... The thing that it came all of a sudden, it disturbed my life. I still have a family of four at home, I'm always busy with cooking and cleaning the house all day. I worried a lot about my busy life. However, it was God's blessings that you chose me to take part in this study. You clarified many difficulties that I had. On the other hand, I feel of some use in this life by giving you information about my heart attack. Apart from that, it helped me understand the situation better and encouraged me to stop smoking and alcohol. (F53, 57 years)

Alternatively, although not expressed explicitly by patients, my home visits could have been a reminder of their bitter experience of MI. Eventually, I debriefed the patients before my departure by helping them to acknowledge their improvement in their recovery. Furthermore, since anxiety and depression were not measured in the acute phase in CCU (T1), the initial patients' levels are unknown. The qualitative data hinted that patients' transfer to the medical ward was a good sign of recovery, since they were on their way to discharge. Thus further research is suggested to include assessment of variables in CCU during the acute stage of MI.

Figure 8.3. Range of anxiety scores of patients across time.

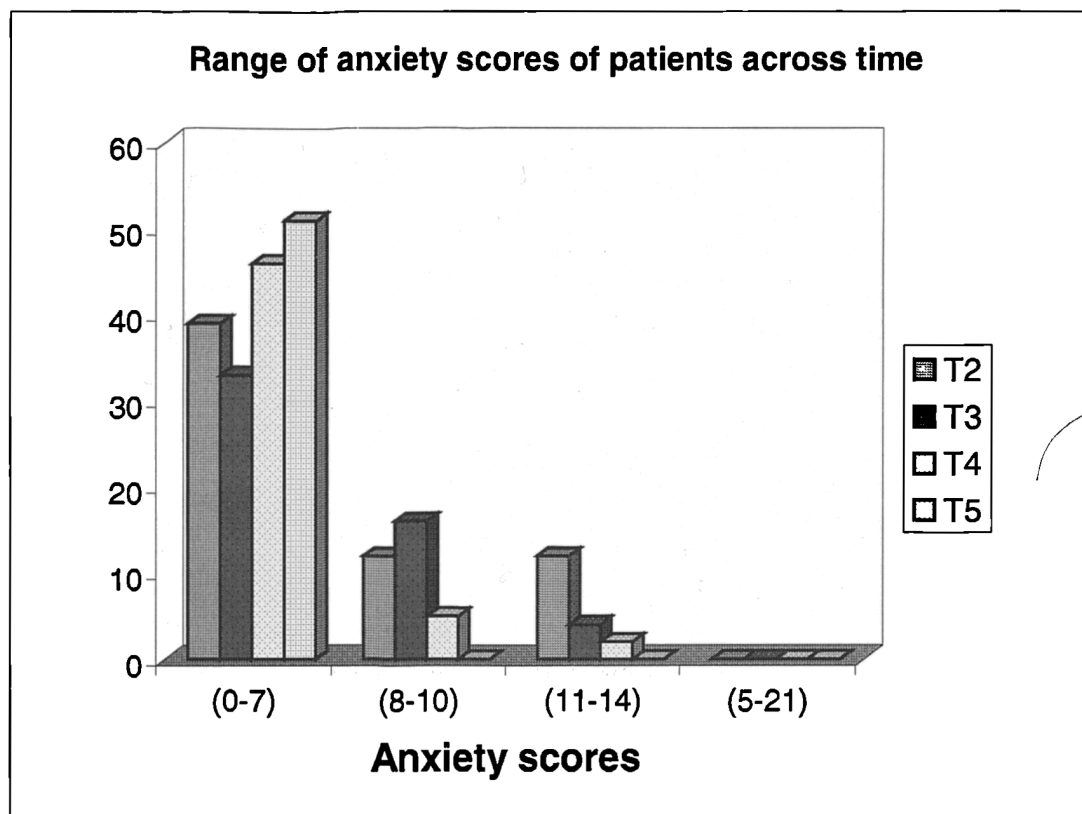


Figure 8.3 shows that on transfer to the medical ward (T2), 61.8% of patients (n=39) were found within the normal range of anxiety level (0-7). This was further sustained by 62.3% of patients (n=33), on discharge home (T3) and 86.8% (n=46) 6 weeks after discharge (T4), followed by all patients within the normal range, three months after discharge (T5).

Figure 8.4. Range of depression scores of patients across time.

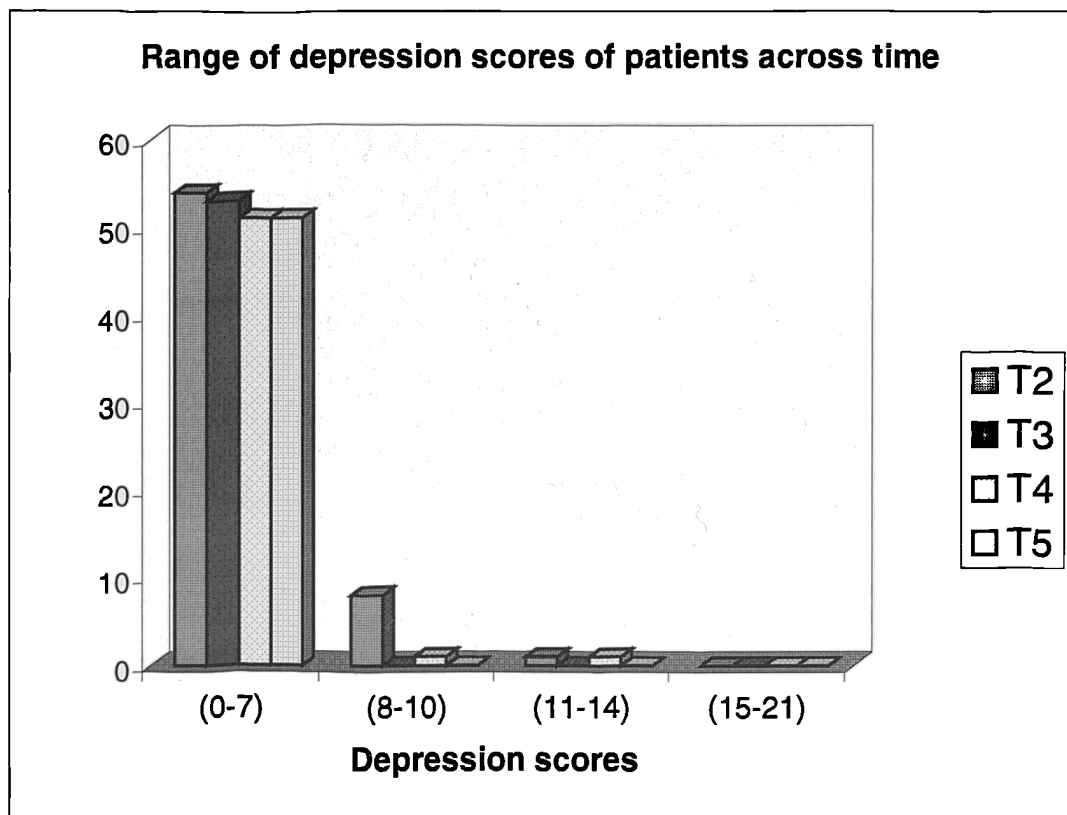


Figure 8.4 demonstrates that the majority of patients scored within the normal level of depression (0-7) across time. The exception lies only on transfer to the medical ward, whereby 12.7% of patients (n=8) scored mild depression (8-10) whilst 1.6% (n=1) rated moderate depression (11-14).

Figures 8.3 and 8.4 demonstrate that overall, the patients rated themselves within the normal (0-7) and mild (8-10) levels of anxiety and depression. This is congruent with the findings of Terry (1992) who found low levels of anxiety in a sample of 40 Australian patients with MI, mean age of 54.23 years. Also, Chiou et al. (1997) found low levels of anxiety and depression on the 3rd-5th day after transfer in her sample of 40 Taiwanese patients with MI. Chiou et al. (1997) explains that Taiwanese people tend to suppress their

distress with minimal expression of emotions as opposed to Maltese people who tend to express their feelings. This is in contrast with the results of Rom (1994) in the USA, whose sample of 155 patients with first MI was found moderately depressed 3-15 months after their MI.

Furthermore, Figures (8.1 and 8.2) show that anxiety levels were more pronounced than depression levels across time. This is parallel with Havik and Maeland (1990) who found that the overall scores of anxiety were higher than depression scores over the six times of data collection, that is, from admission up to one year after MI. The possible reason is explained by Havik and Maeland (1990) who defined anxiety as worries associated with threat whilst depression was oriented towards loss. Examples are loss of security on transfer to the medical ward and on discharge home (Terry 1992, Toth 1987). Additionally, threat is persistently oriented towards uncertainty about the cardiac health status and feelings of vulnerability. (Christman et al.1988, Stewart et al. 2000).

Therefore, it appears that the experience of threat exhibited by anxiety is more salient and permanent for patients with MI than the experience of loss. However, according to Bowman (2001), anxiety and depression may be considered as an effort to adjust to the situation. Thus, the decline in anxiety and depression may indicate signs of adaptation following the acute stage in hospital. However, further research is suggested to identify relationships between anxiety and depression and adaptation to MI and other chronic disorders, such as cerebral vascular accidents.

2. **Correlation of Anxiety and Depression across time derived from HAD scale (Zigmond and Snaith 1983)**

Table 8.1. Pearson's correlation between Anxiety and Depression across time.

Pearson's Correlation between Anxiety and Depression			
Time	n	Pearson's r	2-tailed P value
T2	60	0.559**	0.000
T3	53	0.299*	0.030
T4	52	0.415**	0.002
T5	51	0.192	0.178

Table 8.1 denotes a positive correlation between anxiety and depression on transfer to the medical ward (T2), on discharge home (T3) and at 6 weeks after discharge (T4). Hence, the positive correlation suggests that the higher the anxiety levels, the higher the depression scores. Additionally, those patients who have high scores of anxiety are likely to have also high levels of depression. The fact that the positive correlation does not appear on the third month after discharge indicates that both levels were within normal range (Figures 8.3 and 8.4). This is congruent with the findings of Chiou et al. (1997) who found a positive relationship between anxiety and depression on transfer to the medical ward.

However, this finding is not supported by Wiklund et al. (1984) who found a persistent picture of high depression in male Swedish patients, aged 32-60 years, on the second month and first year following MI. This discrepancy may be due to the younger age group of male patients with role responsibilities, such as parenting younger children. Figures 8.1. and

8.2. depict the consistent decline in both anxiety and depression in Maltese patients across time.

3. Fluctuations of Anxiety and Depression across time.

Figure 8.1. demonstrates a linear decrease in anxiety mean scores. RM. ANOVA identified a significant difference in mean scores across time ($n=51$, $F=45.023$, $df=1$, $p=.000$).

Figure 8.2. exhibits a linear decrease in depression mean level between transfer to the medical ward (T2) and 6 weeks after discharge home (T4), which remained constant at the third month (T5). This reduction in depression was found significantly different by RM. ANOVA across time ($n=51$, $F=45.59.711$, $df=1$, $p=.000$).

Table 8.2. Paired sample t-test identifying where the difference lies in anxiety mean scores in pairs of time periods

Time	n	df	T (2 tailed)	P value
T2 – T3	52	51	2.145	0.037
T2 – T4	51	50	5.044	0.000
T2 – T5	50	49	6.278	0.000
T3 – T4	52	51	3.847	0.000
T3 – T5	51	50	5.759	0.000
T4 – T5	51	50	2.516	0.015

Comparison of times by paired sample t-test were significant at $p \leq 0.008$, which meets the criteria of the Bonferroni correction ($0.05/6 = 0.008$) to decrease chances of Type I error.

Table 8.2 demonstrates that the significant difference lies constantly in anxiety mean scores across the four times, between transfer of patients to the medical ward (T2) and the first 3 months after discharge (T5).

Table 8.3. Paired sample t-test identifying where the difference lies in depression levels across time.

Time	n	df	T <i>(2 tailed)</i>	P value
T2 – T3	53	52	4.294	0.000
T2 – T4	52	51	6.959	0.000
T2 – T5	51	50	7.368	0.000
T3 – T4	52	51	3.563	0.001
T3 – T5	51	50	4.205	0.000
T4 – T5	51	50	0.319	0.751

Comparison of times by paired sample t-test were significant at $p \leq 0.008$, which meets the criteria of the Bonferroni correction ($0.05/6 = 0.008$) to decrease chances of Type I error.

Table 8.3. demonstrates significant differences in depression mean scores which lie across five paired time periods, between transfer to medical ward (T2) and the third month after discharge, except between the sixth week (T4) and third month after discharge (T5). This is because, the mean scores of depression in T4 and T5 are equal, both falling within the range of normal level (0-7).

Research suggests that since anxiety is related to threat, it may be persistent across time (Havik and Maeland 1990, Webb and Riggan 1994). This is because patients may become aware of the seriousness of MI as a life threatening illness with the possibility of another MI and impending death (Lidell et al. 1997, Rose et al. 1994, Bennet 1992, Christman et al. 1988). The fact that Maltese patients had a constant decline in anxiety which returned to normal level by the sixth week after discharge, indicates that SCS, such as talking to other patients with MI and family support, may have played an important role in this decline.

This was expressed by a female patient stating:

‘When I was in CCU, I was in a four bedded room and we used to pass the day sharing our bitter experience of this heart attack.... I never dreamt that I would have a heart attack at such a young age! We talked about the Angiogram and the Angioplasty, because I did not even know what they

consisted of. Although the doctor informed about my next week's appointment for angiogram, I did not know what he was talking about. By talking to each other, you know, we were in the same boat.... I learnt about the Angioplasty, because the doctors hardly explain what it is or is not. It is as if they take it for granted that we know what these things are. I learnt as well about the importance of not smoking.... I do smoke quite a bit. You know, they convinced me to stop this bad habit, which is ruining my health and my pocket..... It was a blessing that I met those persons as I felt at a loss when I was transferred to the medical ward, although I was in a two-bedded room. I knew no one there, so I passed all day in the foyer with my visitors. My family and friends kept on coming to me all day long. This year I passed my birthday in hospital.....*(laughing)* I received many cards and I displayed them in my room. This was of great support to me, it kept me going'. (F32, 40 years)

Thus further research is suggested to explore the possible impact of uncertainty on anxiety, depression and coping in the recovery following MI.

This is substantiated by Bennet (1993) who found a negative relationship between perceived availability of social support and uncertainty in a sample of 81 American patients with MI. Furthermore, Koenig et al. (1998), in a sample of 577 American older clients with medical illness, found a negative relationship between depression and religious coping, such as seeking support from clergy. Consequently, further research is recommended to explore the specific influence of social support in the recovery of patients with MI. Although these findings demonstrate a decline in both anxiety and depression, it is interesting to identify who are the patients influencing such a constant decline.

4. Individual differences in scores of anxiety and depression across time derived from HAD scale (Zigmond and Snaith 1983).

In an attempt to identify the individuals' differences in anxiety and depression across time, the difference in anxiety and depression scores of each patient were calculated and plotted against the original value of transfer to the medical ward (T2), as exhibited in Table 8.4.

Table 8. 4. Changes in levels of Anxiety and Depression across time

Change in Level	T3 – T2 n=53	T4 – T2 n=53	T5 – T2 n=51
	%	%	%
Anxiety			
No change	16.9	20.8	5.9
Decreased level	56.7	67.9	78.4
Increased level	26.4	11.3	15.7
Depression			
No change	15.1	22.6	23.5
Decreased level	60.4	64.2	66.7
Increased level	24.5	13.2	9.8

Table 8.4. indicates that 56.7% of patients (n=30) reported less anxiety between, -1 and -10. This implies that the patients who started off with a high level of anxiety reported a lower score on discharge home (T3). Additionally, 16.9% of patients (n=9) had no difference in anxiety level on discharge home, whilst 26.4% (n=14) scored higher, mainly between +1 and +6.

Moreover, Table 8.4. shows that 60.4% of patients (n=32) scored less in depression level on discharge home (T3), mostly between -1 and -9. Additionally, the scores of 15.1% (n=8) remained the same on T3, whilst 24.5% (n=13) scored higher, mainly between +1 and +3. This is parallel with the decline in anxiety levels shown in (Figure 8.2.)

Additionally, Table 8.4. demonstrates a decrease in depression level whereby the remaining sample (n=53) scored within the normal range (0-7) of depression on discharge home (T3).

Table 8.4. demonstrates a persistent decrease in the level of anxiety in 67.9% (n=36) of patients, between -1 and -11, six weeks after discharge. Additionally, 20.8% of patients (n=11) reported same level of anxiety, whilst only 11.3% (n=6) had a higher score, 6 weeks after discharge.

Moreover, Table 8.4. depicts a further difference at 6 weeks after discharge, whereby 64.2% of patients (n=34) scored less between -1 and -12. Additionally, 22.6% (n=12) kept the same level of depression whilst 13.2% (n=7) reported a higher score than the original value on transfer to the medical ward (T2). This is substantiated by Table 8.2, whereby 72.9% of patients (n=51), scored within the normal range of depression (0-7) at 6 weeks after discharge (T4), with only 1 with mild (8-10) and another with moderate (11-14) level of depression.

Table 8.4. demonstrates a persistent decrease in anxiety levels at three months after discharge, whereby 78.4% of patients (n=40) reported lower scores in depression, between -1 and -11. Furthermore, 5.9% (n=3) scored the same level as T2, whilst 15.7% (n=8)

scored higher, between +1 and +5. This is supported by Figure 8.3. whereby all patients (n=51) ended up with normal level of anxiety and depression, three months after discharge.

Similarly, Table 8.4 shows again that the 66.7% of patients (n=34) had a decrease in depression level at three months after discharge (T5), between -1 and -7. Additionally, 23.5% (n=12) remained constant, whilst 9.8% (n=5) had an increase in depression level of +1 to +5.

To recapitulate, Figures 8.3.– 8.4 and Table 8.4 manifest the persistent decline in the majority of patients' reported anxiety and depression levels. It was found that the majority of patients who started off with high levels of anxiety and depression on transfer to the medical ward (T2) manifested a sharp decrease across time. However, a minority of patients who started off with low levels of anxiety and depression had a minimal increase across time with some others having a decreased level. The reasons expressed by patients who reported an increase in anxiety and depression levels were because of lack of information, occupation, parenthood responsibilities, lifestyle changes, especially smoking cessation, diet, exercise and compliance with medical treatment.

Consequently, these findings are inconsistent with the published research which suggest that patients with MI who experience higher levels of anxiety and depression remain high persistently across time (Wiklund et al. 1984, Schleifer et al. 1989). It was found that patients who reacted badly at the beginning of their MI were found to continue to react badly by the end of the year (Schleifer et al. 1989, Wiklund et al. 1984). This inconsistency with the published research may be due to the Maltese culture, as exhibited in the following correlations between SCS and anxiety and depression (Table 8.5).

5. Correlation between SCS assessed by HSCS scale and anxiety and depression measured by HAD scale (Zigmond and Snaith 1983)

Table 8.5. demonstrates a negative significant correlation between scores of anxiety and combined SCS (M=91.5, $r = -.364$, $p = .008$) and NRCS (M=50.90, $r = -.387$, $p = .005$) at six weeks after discharge home (T4). It implies that the higher the SCS, the lesser the anxiety level. Therefore, the patients who use SCS are more likely to experience less anxiety levels at six weeks after discharge.

Table 8.5. Pearson's correlation between **anxiety** and spiritual coping strategies

Type of SCS	Time	n	Pearson r	2-tailed P value
Combined	T3	53	-0.136	0.330
	T4	52	-0.364**	0.008
	T5	51	0.088	0.537
Religious	T3	53	-0.026	0.855
	T4	52	-0.219	0.118
	T5	51	0.040	0.780
Non-religious	T3	53	-0.213	0.125
	T4	52	-0.387**	0.005
	T5	51	0.134	0.347

This inverse relationship between scores of anxiety and SCS provides the rationale for the patients' lower levels of anxiety six weeks after discharge, which is incongruent with the published research. This is exhibited by a patient who tried to look at his MI positively stating:

'I was astonished at the news of my heart attack, at my age. However, I thank God for keeping me alive. When the doctor told me about my heart attack, I remembered my two friends, who both died abruptly at the age of 45 and 48 years old. Both had a heart attack and died there and then. So the fact that I'm still alive, means that I'm getting back to normal. I still have two children to support financially, as they are still studying..... I used to smoke about 30 cigarettes a day. Once I tried to stop smoking, but after two months I started again. The environment I was in did not

help because everyone used to smoke. This heart attack, fearing that I'd pass through my friends' experience, made me decide to stop. So this attack served me a lesson and filled me with hope to persevere in my decision I'm a very optimistic person, looking at the brighter side of life'.
(M34, 43 years)

Table 8.6. William's t-test (1949) : Differences in correlations between anxiety and use and helpfulness of SCS across time

Time	t -value	df	P value (2 tailed)
Combined spiritual coping strategies			
T3 – T4	1.527	48	0.133
T3 – T5	1.359	48	0.181
T4 – T5	1.820	48	0.075
Religious coping strategies			
T3 – T4	1.245	48	0.219
T3 – T5	0.393	48	0.696
T4 – T5	1.654	48	0.105
Non-religious coping strategies			
T3 – T4	1.175	48	0.246
T3 – T5	2.165	48	0.035
T4 – T5	3.682	48	0.001

Table 8.6. shows a significant difference in correlations between the sixth week (T4) and the third month after discharge (T5). Table 8.5. shows that in T4, anxiety is inversely significant to combined SCS($r = -0.364^{**}$, $p = 0.088$), whilst in T5, a weak positive non-significant correlation is present ($r = 0.088$, $p = 0.537$). Additionally, Table 8.6 shows no significant difference across time in the correlations between anxiety and religious coping strategies (RCS). This is because the correlation values are relatively low across time (Table 8.5).

Furthermore, Table 8.6 demonstrates a significant difference in the correlations between anxiety and non-religious coping strategies (NRCS) between discharge home (T3) and the sixth to the thirteenth week after discharge (T5). Table 8.5. exhibits a weak negative non-significant correlation at T3 ($r = -0.213$, $p = 0.134$) whilst a weak positive non-significant

correlation is depicted in T5 ($r=0.134$, $p=0.347$). Additionally, Table 8.6. shows another significant difference between anxiety and NRCS between the sixth week (T4) and the third month after discharge (T5). This is because an inversely significant relationship exists between anxiety and NRSC ($r= -0.387^{**}$, $p= 0.005$), whilst in T5, a week positive correlation is present ($r= 0.134$, $p= 0.347$) (Table 8.5).

Table 8.7. Pearson's correlation between **depression** and use and helpfulness of SCS

Type of SCS	Time	n	Pearson r	P value 2-tailed
Combined	T3	53	-0.044	0.754
	T4	52	-0.192	0.173
	T5	51	-0.029	0.839
Religious	T3	53	-0.113	0.420
	T4	52	-0.005	0.972
	T5	51	0.091	0.528
Non-religious	T3	53	-0.195	0.163
	T4	52	-0.408**	0.003
	T5	51	-0.249	0.079

Table 8.7 demonstrates a negative significant relationship between depression and NRCS ($M=50.90$, $r=-.408$, $p=.003$) at the sixth week after discharge. This inverse relationship implies that the higher the use of NRCS, the lesser the depression levels. Hence, individuals who use NRCS, such as self-reflection and acceptance of MI, are more likely to have lower levels of depression. This is demonstrated by a patient stating:

‘Let be honest, the fact that I used to smoke cigarettes, I feel that this attack, I contributed to it myself, with the harm that I did due to cigarette smoking. There’s no other way, except to accept my condition...But I passed through a process. At first, I started to think, Never in a million time would I have thought that some time I would suffer a heart attack!..... First of all, I do a lot of sport, and secondly I’m still very young..... Before I completely accepted it, because at first I cried deeply,

I said to my wife “See what you can do, because I am very ill”. But I managed to accept the situation because my wife and I tried to adapt ourselves to the situation to prevent another one. Then when I heard about others, I plucked up courage and realised that I could make it and return to normal... I feel calm, I don’t have that fear any more.....The fact that I accepted it as part of my life, now I will do my best not to abuse myself and do everything possible to enjoy my health’

(M21, 44years)

Therefore, this patient acknowledged the reality of his situation and demonstrated his commitment to put into practice the valued smoking cessation in his lifestyle.

Table 8.8. William’s t-test (1949). Differences in correlations between SCS and depression.

Time	t -value	df	P value (2 tailed)
Combined spiritual coping strategies			
T3 – T4	0.918	48	0.363
T3 – T5	0.097	48	0.923
T4 – T5	1.121	48	0.268
Religious coping strategies			
T3 – T4	0.724	48	0.472
T3 – T5	0.144	48	0.887
T4 – T5	0.651	48	0.518
Non-religious coping strategies			
T3 – T4	1.402	48	0.167
T3 – T5	0.361	48	0.720
T4 – T5	1.163	48	0.250

Table 8.8 demonstrates no significant differences across time in the correlations between SCS and depression, even in the presence of the weak negative correlation between NRCS and depression at the 6th week after discharge (Table 8.7.). This may be because the scores of anxiety and depression of all patients fall within the normal range (0-7) by the sixth week after discharge (T4) (Table 8.1.) However, the mean scores of the combined SCS are the highest (M=92.08, SD 11.43) at the sixth week after discharge. Consequently, it appears that patients remained using the SCS, even when their anxiety lowered to their normal level. This is supported by Koenig et al. (1998) who found a positive relationship between

better physical health and NRCS, such as finding meaning and purpose in life and appreciating nature. This is shown by a patient stating:

‘From the medical ward I could see the Yacht Marina at Msida. I used to enjoy seeing the sea view, especially in the darkness when I could see the light reflecting on the sea..... Usually I strongly admire nature. I also love the agricultural environment, the moon reflecting onto the sea. I long to go back to my usual fields, turning over stones and finding snails, something living, although hiding under the stone. I like picking mint and during the daffodils season, I fill the house with them, they’re beautiful. I like walking in the countryside, I do it every day, early in the morning. I am also fascinated by minute wild flowers, with different colours..... those lovely colours make me adore God. I feel at peace in this wonderful environment, under the care of God. He takes good care of the birds and plants, let alone of me’.

(M47, 62 years)

Furthermore, Tables 8.5. and 8.7. indicate a negative significant relationship between NRCS (T4) such as, social support and positive outlook to life and anxiety and depression respectively. This is consistent with the published research. Agarwal et al. (1994), in a sample of 70 Indian male patients with first MI, found a negative relationship between positive life orientation, and anxiety and depression 4-5 days after MI and at one month after MI. It was reported that after a month the patients were found to have increased sense of personal control and perceived recovery.

Additionally, Rom (1994) found that the positive thinking way of coping, that is ‘count your blessings’ was the strategy mostly used by American patients with first MI, 3-15 months after MI. Additionally, patients preferred to face and solve their problems rather than using denial, which was the least preferred strategy. A similar picture was found in this study, whereby patients showed determination to change lifestyle, as stated by this patient:

'It had to be this heart attack. The attack of angina that I had five years ago, wasn't 't enough. The guilt feelings I have on the past..... I deserve worse! The past is worrying me. I was very greedy. I used to eat a lot and without precautions. My working hours were from 7.30 and to 7.30 p.m. for many, many years. At times my children, now grown ups, tease me saying, 'dad, we didn't see much of you in our childhood'..... I had been feeling tired and I had a funny feeling in my chest for 10 days before the attack. I felt I must go to the doctor but I ignored it..... Now I will keep my decision and find time for physical exercise and see to my diet, a change of life style with less stress. I believe that God saved my life. This attack helped me to keep my decisions to change my life style. It helped me to reconfirm the promise I made 5 years ago. Mind you, my family, especially my wife have been very supportive and she will help me to stick to the diet.
(M22, 58 years)

Family support, expressed by this patient is supported by Table 7.4. whereby Maltese patients who ranked SCS No. 3 '*relationship with friends / relatives*' as most helpful across time, that is second and third during hospitalisation (T3), fourth, fifth, sixth and seventh during the first six weeks after discharge (T4) and first, second and third between the sixth and thirteenth week after discharge (T5). Thus social support may have contributed towards the consistent decline in anxiety and depression levels. This is corroborated by Terry (1992) who found, in a sample of 40 Australian patients with MI, that anxiety was inversely related to supportive spouse. This is typical to the Maltese patients who found their spouse as their right hand in taking the responsibility to change lifestyles, such smoking cessation, as expressed by this patient:

'The person with whom I confided most of my feelings was my wife. She was of great support to me. She was of great support and of great courage to me because she was always ready with some solution in my difficulties, even when we were planning how to adapt myself, both at home, and also in my job. I'd confide in her the fear I had, due to the situation I found myself in. We would discuss whatever I was told by the nurses, the doctors and the Consultant. I'm at peace when I confide in her, knowing that at least I didn't have to carry the burden of my illness alone'
(M 31, 41 years)

However, a supportive spouse is contradicted by Toth (1987) and Smith Baldree et al. (1982) who their partner as a source of stress on discharge home. This is because the patients found a sense of uneasiness caused by their partner's overprotection and excessive amount of attention to their illness. This was found only in three patients who demonstrated this concern stating:

‘I'm used to self - problem solving. I'm used to face problems and find solutions through prayers. If I had to tell my wife about my problems, things would get worse because she aggravates things and worries about trivial things’
(M59, 73 years)

Therefore, it would be interesting to explore the experiences of both patients and spouses in this regard during the early recovery phase of patients with chronic illness.

Furthermore, SCS appear to instill hope and yield SWB which may reflect the impact on the consistent decline in anxiety and depression across time. This is supported by Kaczorowski (1989) who found a negative relationship between anxiety and SWB in a sample of 114 American patients with malignancy. Similarly, Fehring et al. (1997) found a negative relationship between SWB, hope and anxiety and depression in a sample of 100 American patients with malignancy. Hope is indicated by this patient:

‘This heart attack came unexpectedly, Anyhow, I took after my father. He had a heart attack at 56 years but outlived it. He is now 85. He came to see me in hospital. I cried for joy, seeing him by my bedside. I accept this taking after my father. His presence made me at peace with myself as I felt guilty too. I caused great trouble with the cigarettes. Look at my stained fingers and my brown teeth. Day and night smoking! Not only I accept this situation but I take it as a grace from God. However sometimes I'm tempted to say, ‘But there are so many that smoke, why me?.....’ There's nothing that I could do. Now that I'm still alive, I thank God for that. I hope that I'll live like my father did. I will try to live like him, stopping smoking and following his example. (M6, 56 years)

According to Herth (1990), hope incorporates an inner power directed towards the enrichment of self, envisaging the possibility of achieving a goal which is realistically possible and personally significant. Hence, it comprises a positive outlook to the future

(Nowotny 1989, Flemming 1997). Thus further research is suggested to identify relationships between SCS, negative mood states, hope and SWB in the recovery from illness.

6. Hypothesis Testing and Summary

Hypothesis No 1.

H1 There will be a negative relationship between SCS and anxiety and depression during hospitalisation (T3) and the first six weeks after discharge (T4).

The findings demonstrated negative significant relationships between combined SCS and NRCS and anxiety (Table 8.5) only at the sixth week after discharge (T4). At the same time, a negative significant relationship was found between depression and NRCS (Table 8.7). Therefore, although there is an indication of a negative relationship between SCS and anxiety and depression, but it is not proven across both times. Hence, **Hypothesis No 1 is rejected.**

Furthermore, it was found that SCS increased across time (Figures 7.13 – 7.15), including those patients who started off with low scores during hospitalisation (Figure K.4.1., Appendix K.4. p.579). However, the anxiety and depression scores declined to normal limits by the third month (Figures 8.1, 8.2). Thus, **a one-way relationship** was demonstrated between SCS and anxiety and depression, contrary to the plan proposed in the Analytic Model (Figure 6.2.). This infers that:

- the more the SCS, the less the anxiety and depression scores.

This is corroborated by Lazarus and Folkman (1984) who contend that both problem focused and affective coping strategies may be used to cope with stressful situations which

may bring emotional equilibrium in their efforts to achieve realistic goals. Therefore, no strategy should be considered inherently better or worse than any other. According to Otto (1950), the use of self-transcendence to God through prayer and trustful relationship with God may instill hope, sustaining coping efforts in confronting the most adverse stressful conditions.

Additionally, the qualitative data hinted that higher levels of anxiety and depression may trigger more use and helpfulness of SCS during hospitalisation. This was exhibited by those patients who started off with low scores and rated increased use and helpfulness of SCS during the phase of higher levels of anxiety and depression (Figures K.4.1.- K.4.6. Appendix K.4. pp.579-584). Hence, further research is recommended to identify the stressors of MI and their possible relationship with anxiety, depression and SCS during the acute phase of MI.

Furthermore, Table 8.5. shows a weak positive correlation between anxiety and combined SCS, RCS and NRCS on the third month after discharge (T5). Similarly, Table 8.7 shows a weak positive correlation between depression and RCS at the same time (T5). Hence, it seems that on the third month after discharge (T5), when the levels of anxiety and depression become within the normal range, patients appear to reduce the amount of SCS, which may yield a positive relationship. Therefore, it is recommended that this study be extended to identify possible relationships between SCS and anxiety and depression, two years after discharge.

Pearson's correlation between anxiety and depression revealed positive significant correlations across time, except on the third month after discharge (T5). This implies that

those patients who had higher scores of anxiety were liable to have high scores also in depression. Similarly, the higher the scores of anxiety, the higher the depression scores, whilst the lower the scores of anxiety, the lower the depression scores.

Furthermore, the findings demonstrated a constant decline in the scores of anxiety and depression across time, with the scores of anxiety being more pronounced than the depression scores. This may be because anxiety was persistently oriented towards threat, such as uncertainty about their future health status and life expectations, whilst depression consisted of temporal loss, such as loss of security from the health care team on discharge home (Havik and Maeland 1990).

Moreover, individual differences in anxiety and depression revealed that the majority of patients rated reduced scores across time. This led to the scores of anxiety and depression to fall within normal limits by the third month after discharge (T5). This constant decline across time was found incongruent with the research findings in MI conducted in different cultures, such as Taiwan (Chiou et al 1997), Sweden (Wiklund et al 1984), Norway (Havik and Maeland 1990), United Kingdom (Thompson et al 1987) and Australia (Terry 1992).

The published research revealed that anxiety and depression may increase on discharge (Havik and Maeland 1990) and may peak again at about six weeks post-discharge (T4) (Thompson et al.1987, Thompson 1982). However, the return of patients' scores of anxiety and depression to normal levels is parallel with research, stating that the increased levels may subside by the third month (Havik and Maeland 1990 and Wiklund et al.1984).

Finally, the quantitative data and the qualitative data showed that the Maltese culture may have played an important role in this decline due to the increased family support, ranked second and third as most helpful in hospital, the small distances in the island, whereby medical assistance can be reached quickly. Additionally, the patients' use of SCS, including the RCS and my visits to them in hospital and after discharge for data collection may have contributed towards a sense of security, possibly leading to spiritual well being as discussed in Chapter Nine.

CHAPTER NINE

Relationship between spiritual coping strategies and spiritual well being

The aim of the study is to identify relationships between spiritual coping strategies (SCS) and anxiety, depression, spiritual well being (SWB) and personal characteristics of Maltese patients with first MI from transfer to the medical ward to the first three months after discharge.

This chapter attempts to test Hypothesis No 2:

H1 There will be a **positive** relationship between spiritual (SCS) and (SWB) during hospitalisation and the first six weeks after discharge.

To achieve the aim of the study and test the hypothesis, the following objectives were accomplished.

- measured the levels of SWB by the use of JAREL SWB scale (Hungelmann et al. 1985) prospectively and SCS retrospectively by HSCS scale developed for this study,
- explored the rationale for the helpfulness of SCS in relation to SWB,
- specified patterns and fluctuations of results, including individual differences, in SWB across time,
- discovered statistical relationships between SCS and SWB across time.

For better flow of sequence, this dual chapter incorporates the findings and discussion together, subdivided into the following sections:

- Patterns of SWB across time,
- Specific fluctuations in mean scores of SWB across time,
- Individual differences between pairs of time periods,
- Statistical correlations between SCS and SWB.

The discussion of findings is supported by quotations from the patients' interview and compared with the scarce published research. No direct research was traced on SWB in myocardial infarction (MI), thus other research on oncology and chronic illness is applied. Since the recovery period of MI entails a chronic phase of recovery (Urden et al. 2002, Rose et al. 1994), the research which addresses SWB in chronic illness and malignancy is utilised.

The dearth of research on SWB, which is mostly cross-sectional in design, made me include studies on spirituality and spiritual health in an attempt to identify possible relationships between SWB and SCS. Finally, acceptance or rejection of the hypothesis tested in this chapter is supported by rationale from the theoretical framework of stress and coping (Lazarus and Folkman 1984) and the *numinous* experience (Otto 1950).

1. Patterns of spiritual well being across time, derived from JAREL SWB scale (Hungelmann et al. 1985).

The previous section on anxiety and depression referred to the findings of the published research which suggested a negative relationship between SWB and anxiety (Kaczorowski 1989, Fehring et al. 1997) and depression (Fehring et al. 1997).

Figure 9.1. Mean level of spiritual well being across time

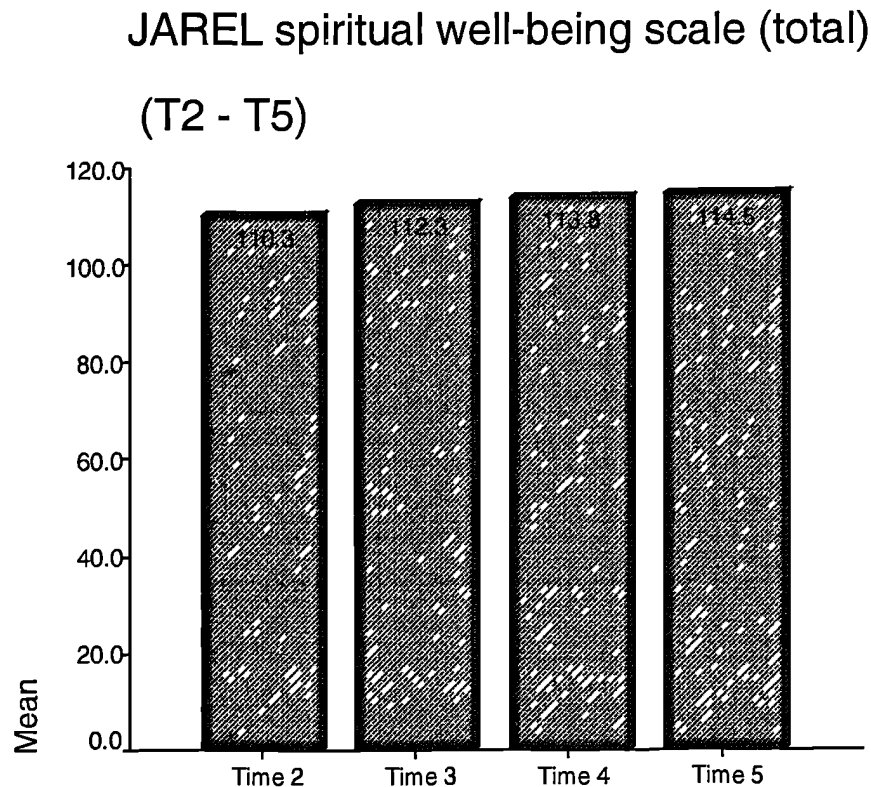


Figure 9.1 demonstrates a stable level of SWB with minimal linear increase across time. This is comparable with research whereby Belcher et al. (1989) found, in a sample of 35 American patients, that the onset of AIDS enhanced their spirituality. It was reported that when AIDS was viewed positively, they felt an increased sense of well being. This is because they considered AIDS as a challenge, a way to re-reorder priorities in life, appreciate themselves better, take better care of self, find peace with self, maintain a relationship with God and with supportive people, such as family members, friends, spouses and support groups.

In contrast, when AIDS was considered as a punishment, 'a daily smack in the face' they felt a decreased sense of well being. No direct comparison could be done with the scores of SWB before MI, however Figure 9.1. suggests that the scores of SWB were maintained

high across time. Thus, it appears that SWB is an internal resource of coping as suggested by (Thomson 2000, Riley 1998 and Landis 1996). Therefore, the stability in SWB appears to contribute towards the constant decline in anxiety and depression of the Maltese patients. The qualitative data showed that SWB may be yielded both by the RCS and NRCS. For example, seeing the positive side of MI was expressed by most of the patients stating:

‘As I already told you, my son seems to have no feelings. My wife and I did our best for his well - being but he seems not to take notice of our advice. He is still very young. But during my stay in hospital he became more close to me. This does not mean he doesn’t love me but he loves me in his own way. He stayed at home in company of his mother during my hospitalisation. He used his car to drive his mother to hospital and back. There, I felt he loved us, although he did not show it. It had to be this illness to get to know that he really respects us. Now I feel better, at peace, knowing that he respects us. This encouraged me a lot and helped me regain my health and hope to get back to normal’. (M64, 50 years)

‘I’m much, much better now. I could have had a more severe heart attack which could have left me dead. But with God’s help, I feel I’m getting stronger day by day. My only regret is that I spoiled my son’s holiday.... (*crying*). He’s the one who still lives at home with me..... I’m hoping to go home, at least to do the cooking for my husband and son...I would think that if the Lord let me live, He must have done so for a reason. So I would resign myself to his will....He knows about me (*smiling*)!’
(F51, 73 years)

Additionally, appreciating the beauty of arts had a dual role that is, recognising the talents of the artist and self-transcendence to God. This dual effect is achieved because ‘arts helps understanding of the transcendent in a perceptible form’ (Pipa 1972, p. 412) as described by this female patient:

‘In the corridor of the ward, there was a statue of the Sacred Heart of Jesus in a decorated corner. Whilst in my room there was a crucifix. I was fascinated to see the great details captured by the sculptor. They were painted with such beautiful colours. I admired the talent of the artist. I could see in the statue the image of Jesus and I would reflect on his sufferings while on earth. He suffered in order to do God’s will, for our benefit..... I could say that the statues encouraged me to bear my own suffering brought on by the heart attack, knowing that God can understand me and help me to overcome the obstacles in life’.
(F25, 55 years)

The impact of illness on SWB was also revealed by Ferrell et al. (1996) in a sample of 21 American women with breast cancer, who identified an increase in SWB in terms of signs of hope, altered priorities, altered life meaning, self transcendence and life after death. Therefore, it appears that illness may trigger increased level of SWB. This is substantiated by Woods Smith (1995) who found, in a sample of 172 American polio survivors and 80 non-polio healthy persons, that the polio survivors had a significantly increased spirituality than their healthy counterparts.

This may be due to the social support encouraging them to adapt to the situation. As discussed in Chapter 8, social support in Malta is prominent in times of distress.

Additionally, religious practices appear to contribute also towards high levels of SWB. This is reinforced by Reed (1986) in a sample of 114 American sample, 57 healthy group and 57 terminally ill, who found no significant difference in the sense of well being between the terminally ill group and the healthy group. However, it was found that the terminally ill group had significantly greater religiousness than the healthy group.

This is supported by Hungelmann et al. (1985) who found, in a sample of 31 American older persons, aged 65-85 years, that SWB of all the believers, healthy and terminally ill, was linked with their past experiences, future hopes and goals leading to personal integrative growth process and finding meaning and purpose in life. This is comparable with the study findings, whereby Maltese patients professed that the onset of MI stimulated them to re-evaluate their life and set their priorities right. Thus the life threatening illness of MI, appears to stimulate coping by religious coping strategies (RCS) and non-religious coping strategies (NRCS), which may lead to modification of lifestyle:

‘This attack was like a warning to me and made me evaluate my habits. On reflection, this heart attack made me persuade myself to give up smoking. I had given it up once before, but then, an English friend of mine came round, offered me one cigarette after the other, and I was soon hooked on them again. As I used to work in a cigarette factory, I was allowed to smoke, and cigarettes were freely available any time. There was no limit. We could smoke as much as we wanted. Now I’m adamant. I’ll never smoke again. This attack could have caused me much worse damage. Now I take it as a blessing because it helped me to give up smoking. Hopefully, I’ll make it and perhaps, I’ll succeed in helping my daughter to stop smoking also. She already had medical problems’.

(M63, 61 years)

It is noted that in order to persevere in his determination to stop smoking, this patient adopted avoidance behaviour by not frequenting the usual club where there was continuous smoking.

Furthermore, the findings of Reed (1987) and Koenig (1988) suggest that in illness, a person may turn to his/her religious coping, resulting in stronger faith. This is supported by the findings of the study whereby patients who started off with low scores in RCS during hospitalisation, such as the younger ones, had an increase across time stating:

‘I’m not so much religious. However, I regard God as a loving Father, always ready to pardon our sins. He governs all our life, so I feel I should trust Him because he always helps us in all circumstances. When I feel sick and helpless I feel the need to turn to Him for help. Now that I had this heart attack, I realised how vulnerable I am. Although I had my angioplasty and was told it was a success, it’s God who keeps things going on well. He knows me well, wishes me good, so I feel secure. This is like bringing up my children. I always looked after them and avoided them from danger as a father should do. I can say that living in the presence of God fills me with courage and security to face this new problem which cropped up all of sudden’.

(M 8, 57 years)

In a sample of 300 American persons, consisting of three groups, that is the terminal cancer, the non-terminal and healthy groups, Reed (1987) found that the terminally ill group reported greater spirituality in terms of stronger faith and meaningful prayer than the

other two groups. Additionally, the non-terminally ill group indicated also a change in spirituality consisting of stronger faith and frequent prayer. It was reported that this change may have been due to the current illness, an experience of death of a relative, old age and other crises in life which might have triggered spiritual growth. Therefore, it appears that apart from the illness itself, experiences prior to MI and demographic characteristics may contribute towards the change in SWB. This was echoed in this study, whereby the patients professed an improvement in their way of life, such as reordering of one's priorities. Therefore, the stable level of SWB in this study merits further research to identify other possible factors influencing this stability in the recovery period.

Moreover, the higher levels of SWB in the published research and this study are contradicted by Highfield (1992) and Fernsler et al. (1999). Highfield (1992) found a moderately high scores of spiritual health in a sample of 40 American patients with malignancy. However, it was reported that 70% of male patients considered spirituality as a private and personal experience. Hence, the males may have hesitated to disclose such information, rendering lower levels of SWB. Additionally, Fernsler et al. (1999) found that the sample of 121 American male and female patients with colorectal cancer had an overall low levels of SWB. Also, the low levels of SWB were significantly related to increased demands in illness.

Therefore, it seems that SWB may be influenced by several factors, such as awareness of the severity of illness, personal roles in life and ways of coping. Unfortunately, the lack of longitudinal design in research does not provide evidence about the patterns of SWB along the recovery period. Consequently, the stability in SWB demonstrated in Figure 9.1. is not comparable directly with the published research. Consequently, further longitudinal

research is recommended to identify possible influencing factors on SWB and fluctuations in SWB in patients with MI, comparing them with patients having chronic illness and healthy individuals.

2. Fluctuations of spiritual well being across time, derived from JAREL SWB scale (Hungelmann et al. 1985).

Figure 9.1. demonstrates a stable pattern with slight linear increase in mean scores of the total SWB across time. RM.ANOVA statistical analysis identified a significant difference in the mean scores of SWB across time ($n=51$, $F=33.787$, $df=1$, $p=.000$). Thus, in an attempt to identify where the difference lies across time, a series of paired samples' t-test were calculated as exhibited in Table 9.1.

Table 9.1. Paired sample's t-test: Differences in SWB between pairs of time periods.

Time	n	df	T (2 tailed)	P value
T2 – T3	53	52	-4.119	0.000
T2 – T4	52	51	-4.738	0.000
T2 – T5	51	50	-6.036	0.000
T3 – T4	52	51	-2.184	0.034
T3 – T5	51	50	-3.485	0.001
T4 – T5	51	50	-1.605	0.115

Comparison of times by paired sample t-test were significant at $p \leq 0.008$, which meets the criteria of the Bonferroni correction ($0.05/6 = 0.008$) to decrease chances of Type I error.

Table 9.1. demonstrates significant differences in the mean scores of SWB, across most of the pairs of time. The exception lies between the mean scores at the sixth week (T4) and third month after discharge(T5). Therefore, SWB appeared to be a constant means of coping during the recovery period. This may have helped the consistent decrease of both anxiety and depression levels across time. The lack of difference between the last two time

periods, T4 and T5, suggests their settlement in their health, supported by similar mean scores of SWB as a whole group and individually, as exhibited in the following section.

3. Individual differences in scores of spiritual well being across time, derived from JAREL SWB scale (Hungelmann et al. 1985).

Table 9.2. depicts the individual differences in SWB across time. This was achieved by calculating the difference in SWB scores of each patient by comparing them with the original value on transfer to the medical ward (T2).

Table 9.2. Changes in levels of spiritual well being across time

Change in scores of SWB	T3 – T2 n=53	T4 – T2 n=53	T5 – T2 n=51
	%	%	%
No change	9.4	9.4	5.9
Decreased level	9.4	15.0	11.8
Increased level	81.1	75.4	82.4

Table 9.2. shows that 81.8% of patients (n=43) scored higher on discharge home (T3) between +1 and +14. Additionally, 9.4% of patients (n=5) had no difference in total SWB level on discharge home, whilst another 9.4% (n=5) scored less, between -1 and -7.

Moreover, 75.4% of patients (n=40) had higher scores six weeks after discharge home (T4) between +1 and +14. Additionally, 9.4% of patients (n=5) had no difference in total SWB level on discharge home (T3), whilst another 15% of patients (n=8) scored less, between -1 and -11.

Table 9.2 exhibits an increase in scores of total SWB in 82.4% of patients (n=42) on the third month after discharge (T5) between +1 and +22. Additionally, 5.9% of patients (n=3) had no difference, whilst another 11.8% (n=6) scored less, between -1 and -6.

Consequently, Table 9.2 demonstrates that the majority of patients reported a stable level of SWB across time. This may be due to SCS which were increased also across time. This is in contrast with (Table 8.4) whereby the majority of patients had reduction in levels of anxiety and depression across time. Therefore, it appears that SWB may be inversely related to negative mood states as found by (Kaczorowski 1989, Fehring et al. 1997). Hence, further research is suggested to identify statistical relationships between SWB and anxiety and depression.

4. Correlation between spiritual coping strategies derived from the HSCS scale and SWB obtained by JAREL SWB scale.

Table 9. 3. Pearson's correlation between SCS and (total) SWB

Type of SCS	Time	n	Pearson's r	2-tailed P value
Combined	T3	53	0.394**	0.004
	T4	52	0.577**	0.000
	T5	51	0.642**	0.000
Religious	T3	53	0.520**	0.000
	T4	52	0.509**	0.000
	T5	51	0.564**	0.000
Non-religious	T3	53	0.154	0.272
	T4	52	0.318*	0.022
	T5	51	0.439**	0.001

Table 9.3. demonstrates a consistent positive correlation between SCS and SWB. SWB is significantly correlated with combined SCS and RCS across time. Moreover, SWB is

correlated with the NRCS on discharge home (T3) and first six weeks after discharge home (T4). Therefore, it appears that during hospitalisation, patients turned to their religiousness to cope with MI. This is supported by the ranking of SCS, whereby it was found that Communion, ranked first (Table 7.4) was perceived as the most helpful during hospitalisation as described by this patient saying:

‘I used to receive Holy Communion everyday. When the Holy host is in my hands, I can feel the love of God for me. I feel obliged to remain faithful to Him, keep on loving Him even during the sufferings He permits on me. I used to feel a special strength when I took Him in my hands. Daily Communion is an essential part of my life. I was brought up like that and I remained faithful. However, I wish that Communion was not distributed in such a rush’. (F13, aged 65years)

Therefore, Communion, described as being distributed routinely ‘in a rush’ could be a resource of coping. Hence, it is recommended that the time and way of distribution of Communion at the local general hospital, which is currently in the afternoon between 2.00 p.m. and 3.00 p.m., be reorganised in the local general hospital, to allow time for reflection and prayer as suggested by patients in the interview.

Additionally, trusting in God and relationship with friends and relatives were rated as second and third most helpful. Also, relationship with God was considered as the fourth most helpful (Table 7.4). Consequently, the findings indicate that RCS were used mostly to cope with MI across time. During hospitalisation, some patients filled the time by praying in a group or saying the rosary with the group on the religious Maltese radio, as stated by the following patient:

‘We used to recite the Rosary together and the thanksgiving after Communion, together as well. I used to read passages from the Bible to them too. We used to feel united together in prayers. This helped me to feel the presence of God within me and around me, feeling his readiness to help me. The word of the Bible had a personal message to each of us at that time of distress. Personally, I can say that it helped me in joining my

suffering with that of Christ for my daughter who is currently experiencing a family problem..... Thus I felt that my suffering is glorifying God and helping others also. I felt the burden of my heart attack lighter. You know, I live alone and it's worrying to have such a sudden heart attack. Despite this, I felt at peace and I was not afraid of going back home and live alone'. (F33, 70 years)

Additionally, the hospital chaplains currently distribute Communion daily and pay regular visits to patients for counseling and performance of religious services, such as the sacrament of reconciliation and prayers, as stated by the following patients:

'It's a good thing that a priest comes round, even though there may be patients who are not practising Catholics. Coming face to face with death, I felt the need to confess and get closer to God. When I went to confessions, I felt at rest and was prepared to receive Holy Communion. However, I suggest that there will be more privacy for these things in hospital. It's only when you go through such an experience of death, that you realise how helpful it is to receive Holy Communion and God's forgiveness and blessings'. (M43, 66 years)

'During my stay in hospital, I did go to Confession, even though I didn't commit any terrible crime! But finding myself in that situation, on the point of death as it looked to me, felt the urge to confess. The fact I poured out my sins to a priest, who forgave me in God's name, gave me inner peace and felt closer to Him. Through this experience of the heart attack, I can assure you that on my death bed I'd rather have a priest assisting me than a doctor'. (M42, 55 years)

Additionally, Holy Mass is also said daily in the chapel and at times, on the wards also as described by this patient,

'When I was on the medical ward, I used to go to the chapel for Mass daily. I felt that the Mass helped me to offer myself to God and take this illness from His hands. I felt the need of God and the need of adoring Him together with other patients for saving my life from this heart attack. The Mass helped me to reflect on the Word of God with a personal message from God. A message of encouragement, reminding me of God's constant assistance. It's quite difficult for me to suffer this heart attack while I'm on the verge of retirement. However, I believe that God will help me at this stressful stage of my life'. (M57, 59 years)

Furthermore, patients may be visited by voluntary lay persons, of whom one pays visits to patients on daily basis, saying short poems of courage, distributing prayer books and saying prayers with the patients.

‘When I was in hospital Mr X, a man who speaks to people in rhymes came near me, spoke to me and went around the other patients also. Mind you, his message is very simple but very helpful indeed during this time of suffering. He gave me a booklet about the Sacred Heart of Jesus and a holy picture of Rev. Gorg. That person is doing great good to sick people. Reading the book and saying the prayer of the holy picture, filled me with courage and hope to return to my normal life soon’.

(F27, 59 years)

These quotations shed light on the helpfulness of religious coping during hospitalisation which yielded peace and harmony in the stressful time of heart attack. Furthermore, the constant increase of both the RCS and NRCS following discharge appeared to maintain stability in the high scores of SWB across time.

It is noted that Table 9.3. lends support to the positive correlation identified in the Criterion-related validity testing between HSCS scale and JAREL SWB scale on nursing students, described in Chapter 5.

Table 9. 4. William’s t-test (1949). Differences in correlations between SWB and use and helpfulness of SCS.

Time	t value	df	P value (2 tailed)
Combined spiritual coping strategies			
T3 – T4	2.416	48	0.019
T3 – T5	3.286	48	0.002
T4 – T5	1.430	48	0.159
Religious coping strategies			
T3 – T4	0.140	48	0.889
T3 – T5	0.539	48	0.593
T4 – T5	0.742	48	0.462
Non-religious coping strategies			
T3 – T4	1.884	48	0.066
T3 – T5	3.344	48	0.002
T4 – T5	1.499	48	0.141

Table 9.4. shows that correlations between the RCS and SWB are constantly not significantly different across time. Additionally, no significant differences were found in the correlations between SWB and combined SCS and NRCS between the first six weeks (T4) and third month after discharge (T5). However, a significant difference was found in the correlations between combined SCS and SWB between hospitalisation (T3), and the first six weeks (T4) and third month after discharge (T5). Similarly, a significant difference was found in the correlation between NRCS and SWB between hospitalisation (T3) and the first 6 weeks after discharge (T4). Therefore, the stability of SWB across time (Figure 9.1.) appears to be maintained to a great extent by the RCS (Table 9.3.), since the Maltese patients were all Roman Catholic and tended to turn to religiosity during illness.

This is substantiated by Mickley et al. (1992) who, in a sample of 175 American women with breast cancer, of whom 88% were Christians, found a positive correlation between SWB and intrinsic religiosity, that is, living according to their religious beliefs. Thus meaningful religious practices may increase SWB in the recovery period. This is supported by Koenig et al. (1998) who found, in a sample of 577 older clients with medical illness, that poor health was positively related to increased religious coping, such as prayer and seeking spiritual support from clergy. It was reported that this may have been due to the high religious orientation of the sample who lived in the Bible belt. This is similar to Malta because of the dominance of the Roman Catholic religion.

However, this positive relationship was found also with the NRCS, such as social support and seeing the positive side of the situation, which is comparable with research. It appears that both religious and NRCS instill hope. This is substantiated by Carson et al. (1990) who found, in a sample of 65 American male patients with AIDS, that SWB was significantly

related to hope. Also, those patients with religious affiliation (n=51) scored significantly higher in SWB, which was due to the RCS, such as relationship with God, their source of strength and life. Carson et al. (1990) reported that the patients' trust in the medical team of the respective prestigious clinic for AIDS may have yielded increased levels of SWB and hope. Therefore, a trustful relationship with the multidisciplinary team, may contribute towards SWB. The qualitative data revealed the efficiency of the care received during the acute phase with some complaints regarding the dispersion of the group of patients with MI in the various medical wards following transfer from CCU. Thus patients suggested as follows:

‘When I was transferred from CCU to ward X, I was disappointed to be separated from the small group of patients with whom we shared our experiences and encouraged each other to change our bad habit of smoking. For me personally, those illnesses in that medical ward influenced me a lot. I used to pity so much those elderly persons with stroke, and especially that young patient who had stroke in the same room. Therefore, I suggest that those patients like me are transferred to a cardiac medical ward to continue supporting each other’. (M21, 46 years)

Thus, it is recommended that the hospital management considers the introduction of a step-down ward in the new hospital which may facilitate better rehabilitation before discharge home.

The qualitative data revealed that the patients appreciated the caring attitude of the health care team but complained about the reluctance of the health care team to equip the patients with adequate information in preparation for discharge. Consequently, further research is suggested to identify possible relationships between patient-health carers relationship and SWB of patients with MI across their journey during hospitalisation, that is during the Accident and Emergency department, angiosuite, CCU, medical ward and follow up in the outpatient's department. Due to the vulnerability of the patients during the acute phase, precautions are to be taken in designing the study to prevent further stress to patients.

Furthermore, the fact that the findings showed a stability in SWB (Figure 9.1), supported by consistent significant relationship with SCS across time (Table 9.3), suggest that SWB may be a means of adjustment to lifestyle changes. This is supported by Landis (1996) who investigated SWB as an internal resource of coping in a sample of 94 American community based clients with type I and II Diabetes Mellitus. It was found that as SWB increased, ability to adjust to illness increased and uncertainty decreased.

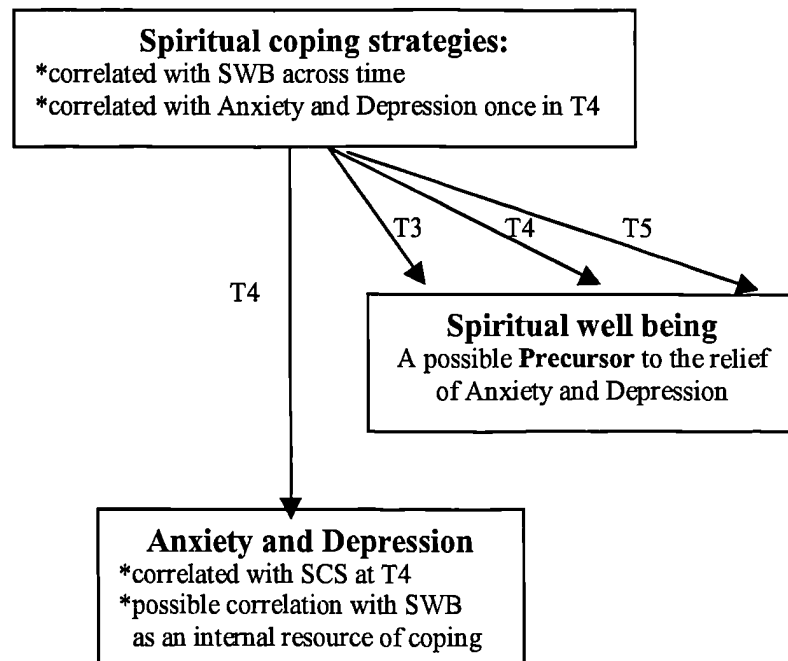
Furthermore, spiritual support, such as relationship with family, friends, support group, belief in God and prayer was found beneficial for adjustment. This is reinforced by Ferrel et al. (1996, 1997) and Rutledge and Rayman (2001) and Riley (1998) who found that such a spiritual support was considered of importance in confronting their illness. While considering the stability in the scores of SWB across time, it is recommended that further research be done to explore possible relationships between SWB and adaptation to illness.

Furthermore, research presents conflicting findings about the relationship between the personal characteristics and SWB (Riley 1998, Reed 1986, Koenig et al. 1988). This lack of consistency in results is derived from cross sectional designs which does not capture the differences across time. Thus further longitudinal research is suggested to identify differences in SWB between the subgroups of personal characteristics across time.

The findings suggest that stronger relationships were found between SCS and SWB (Table 9.3) than with anxiety and depression (Tables 8.5 and 8.7). Table 9.3. shows constant positive correlation between SCS and SWB across time, except in the NRCS during hospitalisation (T3). In contrast, Table 8.7. shows a negative correlation between the combined depression and NRCS at the sixth week after discharge (T4). Additionally, Table 8.7. exhibits a negative correlation between the NRCS and depression only at the

sixth week after discharge (T4). Therefore, the correlation of SCS with SWB is stronger across time than it is with anxiety and depression. This hints that SWB may be a precursor for the relief of anxiety and depression through the use and helpfulness of SCS as depicted in (Figure 9.2.)

Figure 9.2. SWB as a precursor to the relief of anxiety and depression.



The arrows indicate the time of correlation between SCS and the variables under investigation.

Figure 9.2. exhibits the possible process of relief of anxiety as suggested by the correlations between SCS and the anxiety, depression and SWB. The findings revealed that SCS is negatively, significantly correlated with anxiety and depression at the sixth week after discharge. However, a consistent positive, significant relationship between SCS and SWB was found across time. Therefore, it seems that SWB may have contributed towards the constant decline of anxiety and depression. This suggests that SWB may be a precursor to the relief of anxiety and depression. However, this preliminary speculation merits further research to identify the possible relationship between SWB and anxiety and depression, so interpretation is to be done with caution.

5. Hypothesis testing and Summary

Hypothesis No 2.

- H1 There will be a positive relationship between SCS and SWB during hospitalisation (T3) and the first 6 weeks after discharge (T4).

In the light of the above findings, whereby significant positive correlations were found between SCS and SWB across time, with the exception of the relationship between NRCS and SWB during hospitalisation (Table 9.3), the hypothesis No 2 is subdivided into three parts according to the type of SCS for analysis purposes.

Hypothesis No 2.1.

- H1 There will be a positive relationship between (combined) SCS and SWB during hospitalisation (T3) and the first 6 weeks after discharge (T4).

Table 9.3 demonstrates a constant positive correlation between combined SCS and SWB across time. **Thus hypothesis No 2.1. is accepted.**

Hypothesis No 2.2.

- H1 There will be a positive relationship between RCS and SWB during hospitalisation (T3) and the first 6 weeks after discharge (T4).

Table 9.3 demonstrates a constant positive correlation between RSCS and SWB across time. **Thus hypothesis No 2.2. is accepted.**

Hypothesis No 2.3.

- H1 There will be a positive relationship between NRCS and SWB during hospitalisation (T3) and the first 6 weeks after discharge (T4).

Table 9.3 demonstrates a positive correlation between NRCS and SWB during the first six weeks (T4) and at the third month (T5) after discharge. However, no correlation was identified during hospitalisation (T3). Thus hypothesis No 2.3. is rejected. Therefore, it implies that the RCS appear to have contributed more towards the stability of SWB across time than the NRCS.

Finally, the findings demonstrated that SCS increased across time (Figures 7.13 – 7.14) whilst the scores of SWB increased from hospitalisation (T3) to the first 6 weeks (T4) and remained stable on the third month after discharge. Thus, a two-way relationship was exhibited between SCS and SWB as planned in the Analytic Model (Figure 6.2).

This implies that,

- the more the use and helpfulness of SCS, the higher the SWB.
- the higher the SWB, the higher the scores of SCS

Individual differences in SWB revealed that the majority of patients had increased scores across time (Table 9.2.). The stability in the scores of SWB across time suggests that SWB may be considered as an internal resource of coping (Thomson 2000, Riley 1998, Landis 1996). Thus, these findings propose that in times of distress, individuals may be in a state of harmonious relationship between self, others, nature and God, resulting in finding meaning and purpose in life (Hungelmann et al. 1985).

This is corroborated by Lazarus and Folkman (1984) who explain that, the threatening illness may yield negative emotions, parallel to the positive emotions derived from the challenging stimulus of the same illness to one's well being. These two opposing emotions may form a strange harmony of contrasts (Otto 1950). This may be because, in times of

suffering, the individual transcends his/her suffering and hopes to live peacefully through suffering by the perceived assistance of his/her paternal God (Pope Paul II, 2000).

Finally, the correlations found between SCS, including the NRCS and SWB are congruent with the scarce research whereby a positive correlation was found between religiosity and SWB (Mickley et al. 1992, Koenig et al. 1998, Riley 1998) and non-religious coping, such as, family relationships and support groups (Rutledge and Rayman 2001, Landis 1996).

It is noted that apart from the rationale given by patients and the speculations included during discussion of the above findings, other possible factors may have been responsible towards the stability of SWB across time, such as the various personal characteristics discussed in the Chapter Ten.

Username: **nsm8db**

Name: **D.Baldacchino**

Date/Time: **Thu May 9 17:25:09 2002**

Notification to: **D.Baldacchino@nursing.hull.ac.uk**

Printer: **centre7**

Hostname: **huprinting2.ucc.hull.ac.uk**

Quota_(before this job): **140 pence**

PLEASE NOTE: Any misuse of the quota system will be treated as theft, and offenders dealt with severely.

CHAPTER TEN

Relationship between spiritual coping strategies and personal characteristics

The aim of the study is to identify relationships between spiritual coping strategies (SCS) and anxiety, depression, spiritual well being (SWB) and personal characteristics of Maltese patients with first MI, from transfer to the medical ward to the first three months after discharge.

This chapter intends to test Hypothesis No 3:

Ho There will be no differences across time in SCS between the subgroups of the personal characteristics of gender, age, marital status, past history of ischaemic heart disease (IHD), history of angina, education, class/occupation, location of residence, living alone/with others, relationship with God, church attendance before MI, drug treatment which may influence mood states.

This chapter incorporates the findings followed by the discussion of the respective personal characteristic. Each characteristic is described by a set of three line-graphs depicting similarities and differences in combined SCS, religious coping strategies (RCS) and non-religious coping strategies (NRCS). For comparison purposes, the RCS and NRCS line graphs are presented on the same page following that of combined SCS. The twelve characteristics are discussed as follows:

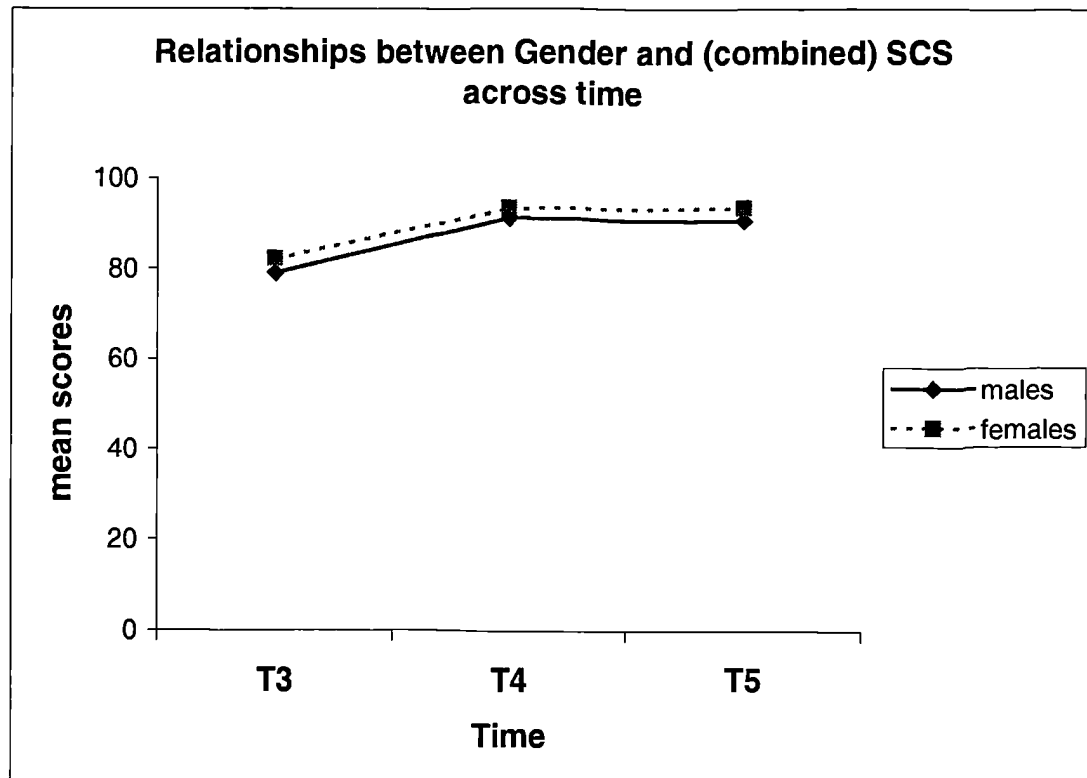
- Patterns and fluctuations of SCS of the groups within the personal characteristics across time. These are supported by the results of Repeated Measures analysis of variance (RM ANOVA) which identify the presence of significant differences in SCS across time.
- Results of Student t-test and one-way analysis of variance (ANOVA) in order to identify the possible statistical differences between the subgroups across time, that is on discharge home (T3), the sixth week (T4) and the third month after discharge (T5).

The paucity of research based literature on SCS by patients with MI does not allow direct comparison of findings with research. Thus, additional research is used which was conducted on chronic illness and oncology. The theoretical framework of Stress and Coping (Lazarus and Folkman 1984) and the *numinous* experience (Otto 1950) are used to support the acceptance or rejection of the hypothesis tested. It is noted that the discussion is backed up by the mean scores of anxiety, depression and SWB in an attempt to provide rationale for the presence or absence of significant differences between the subgroups of personal characteristics and SCS.

This section depicts the mean scores of the SCS between the groups within the personal characteristics across time. Statistical differences between the groups of patients are identified by means of Student t-test and one-way analysis of variance (ANOVA) which are estimated at $p \leq 0.05$ significance level.

1. Differences in SCS within the subgroups of gender across time.

Figure 10.1.1. RM.ANOVA : Differences in mean scores of relationships between groups of Gender and (combined) SCS across time.

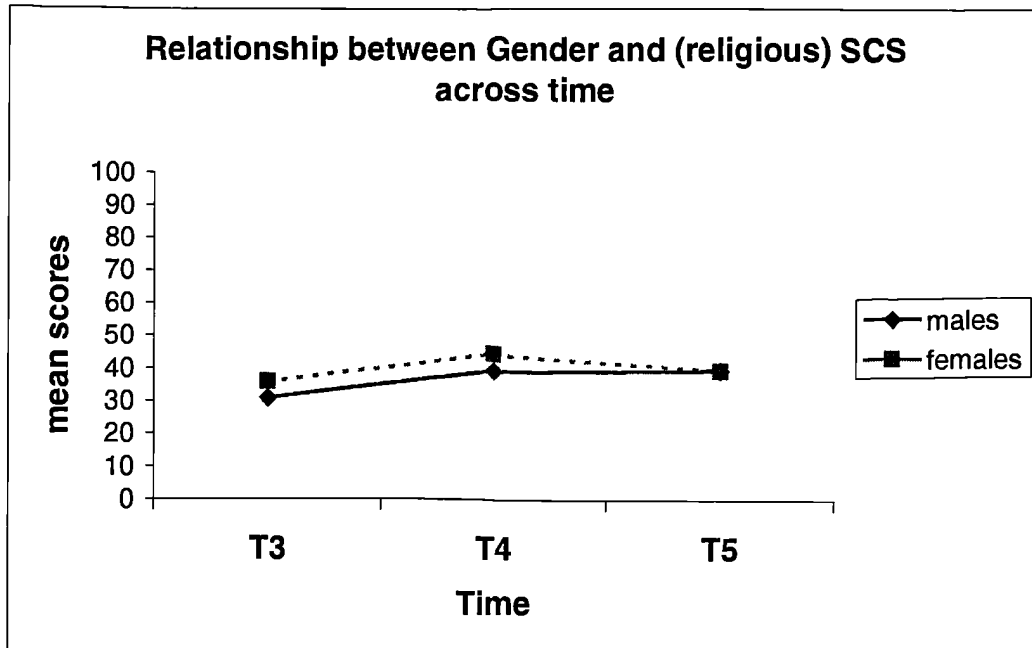


R.M. ANOVA ($F = 0.202$, $p = 0.655$)

Figures 10.1.1., Figure 10.1.3. and Table 10.1. demonstrate no significant differences in gender and **combined** SCS / NRCS across time.

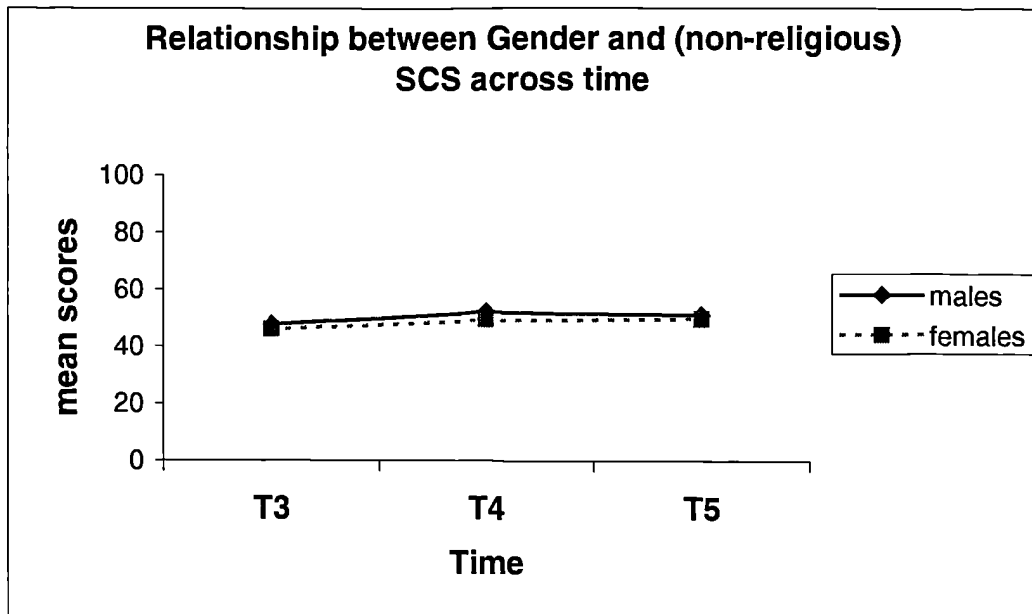
Figure 10.1.2. shows no significant differences in gender and **RCS** across time. However, Table 10.1 shows significant differences between males and females during hospitalisation (T3) and during the first 6 weeks after discharge home (T4).

Figure 10.1.2. RM.ANOVA : Differences in mean scores of relationships between groups of Gender and (religious) coping strategies across time.



R.M. ANOVA ($F = 0.093$, $p = 0.762$)

Figure 10.1.3. RM.ANOVA : Differences in mean scores of relationships between groups of Gender and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 0.934$, $p = 0.339$)

Table 10.1. Student t-test : Comparison of **Gender** with SCS derived from HSCS scale.

Type of SCS	Time	Group	n	t	df	P
Combined	T3	1 2	33 20	-1.29	51	0.200
	T4	1 2	33 19	-0.902	50	0.371
	T5	1 2	32 19	-0.821	49	0.415
Religious	T3	1 2	33 20	-2.35	51	0.023
	T4	1 2	33 19	-2.43	50	0.019
	T5	1 2	32 19	-1.748	49	0.087
Non -Religious	T3	1 2	33 20	0.864	51	0.392
	T4	1 2	33 19	1.829	50	0.073
	T5	1 2	32 19	1.083	49	0.284

Group No : 1 = male, 2 = female

DISCUSSION.

Table 10.1. shows a significant difference in religious coping strategies (RCS) during hospitalisation (T3: $t = -2.35$, $p = 0.023$) and during the first six weeks after discharge (T4: $t = -2.43$, $p = 0.019$), whereby the females (T3: $M=35.55$, $SD=7.13$), (T4: $M= 44.37$, $SD= 6.37$) scored higher than the males (T3: $M=30.39$, $SD=8.10$), (T4: $M=38.43$, $SD=11.26$).

Additionally, although not significant, it is worth noting, that the females tended to have higher scores in the combined SCS and RCS across time whilst the males had higher scores in the NRCS than the females. This may be because females tend to be more spiritual and / or religious. This is comparable with research, whereby Rom (1994), in a sample of 115

patients with first MI, found that females used religious coping significantly more than the males. This is supported by Fernsler et al. (1999), Reed (1986) and Highfield (1992) who found higher scores of spirituality and spiritual well being (SWB) in females in times of illness.

However, Highfield (1992), in a sample of 40 oncology patients found that 70% of the males reported that they considered spirituality as a private and personal experience. Hence, the lower scores in males might have been due to lack of disclosure of information.

However, the data was collected by a self-reporting questionnaire (HSCS), which may enhance reporting about sensitive and private issues (Spector 1994 and Oppenheim 1992).

Moreover, this difference may be due to the higher percentage of females in the sample who attended church (95.9% *often* and *very often*) against (79.5%) males (Figure 7.11). Thus, patients who attend church for religious practices *often* and *very often* are more likely to obtain higher scores in RCS. In addition, age might have contributed to this difference. Figure 7.2 exhibits a higher percentage of older females (70.8%) than the males (45.7%) between the age of 60 – 89 years. According to research, older clients tend to be more religious (Reed 1986,) with higher spirituality or spiritual well being (Highfield 1992, Woods Smith 1995, Fernsler et al. 1990).

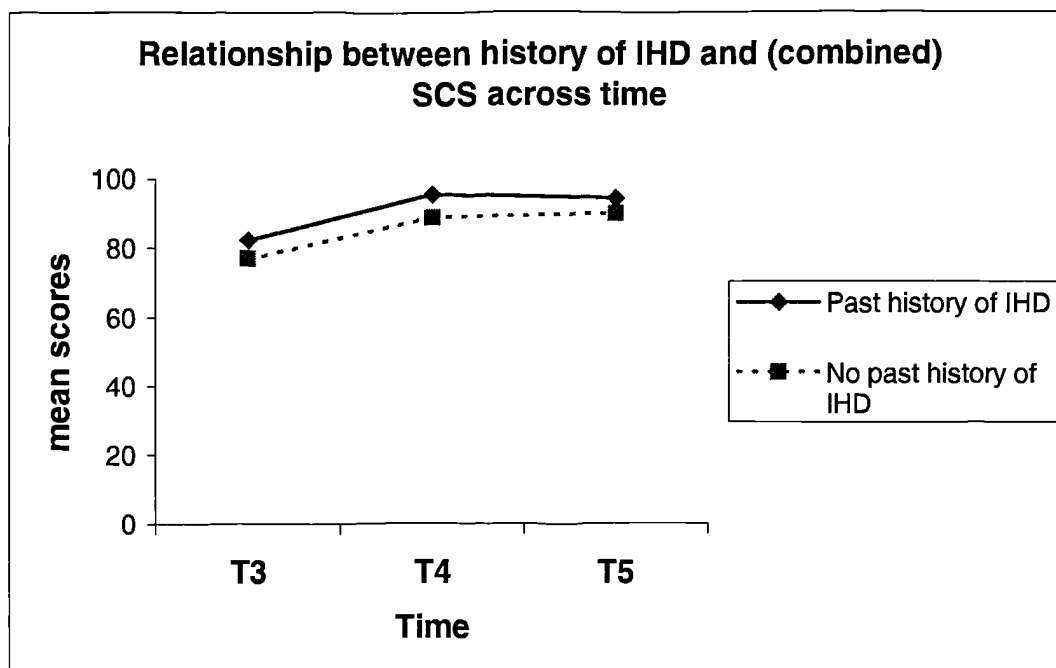
Furthermore, this significant difference in RCS during hospitalisation (T3) and the first six weeks after discharge (T4) may be due to the higher anxiety levels reported by females ($M = 7.8 - 4.2$) than the males ($M = 6.3 - 3.4$) across time. Similarly, females reported higher scores in depression ($M = 4.2 - 1.5$) than the males ($M = 3.5 - .8$). This is parallel to the findings of Koenig et al. (1998) who, in a sample of 577 older clients, found a positive

relationship between RCS and poor health. Thus the poorer the health, individuals tend to use more RCS, such as seeking support from clergy and religious forgiveness. This is supported by Koenig et al. (1998, 1992) and Reed (1986) who found that in illness patients may turn to their religious practices which may result in stronger faith

On considering the complexity of the above possible reasons for the significant differences between gender and the use and helpfulness of SCS, further longitudinal quasi-experimental designs are suggested to identify the possible influence of RCS in illness. Additionally, further correlational studies are suggested to identify possible relationships between gender and anxiety, depression and SWB in the recovery period of MI.

2. **Differences in SCS within the subgroups of history of ischaemic heart disease (IHD) across time.**

Figure 10.2.1. RM.ANOVA : Differences in mean scores of relationships between groups of IHD and (combined) SCS across time.

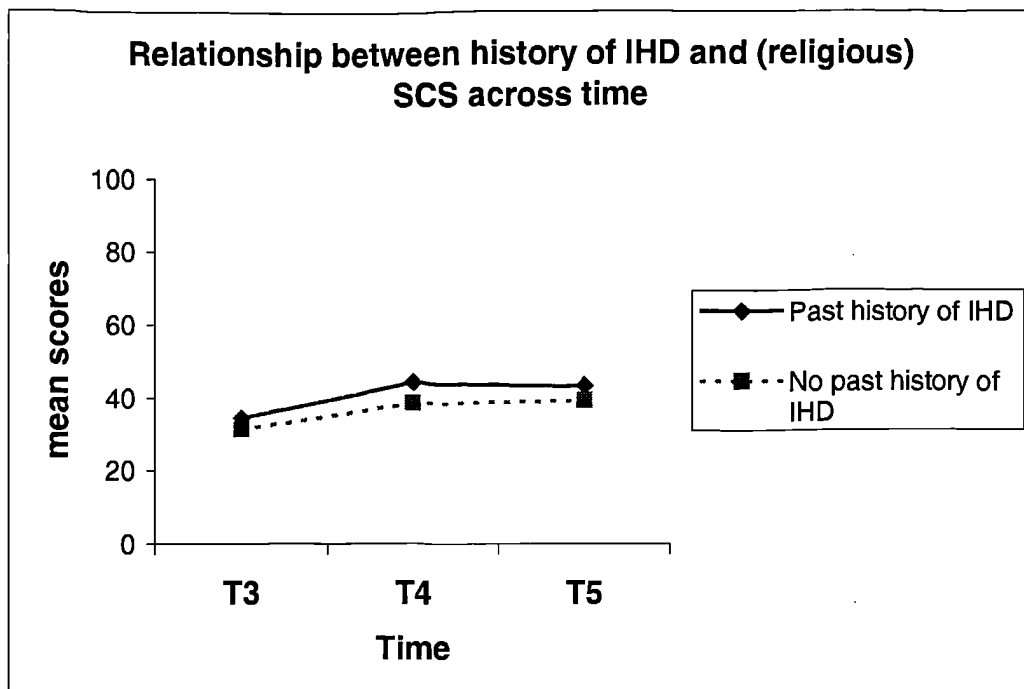


R.M. ANOVA ($F = 0.903$, $p = 0.347$)

Figures 10.2.1., 10.2.2. exhibit no significant difference in past history of IHD and combined SCS / RCS across time. However, Table 10.2 shows significant differences in combined SCS / RCS between the two groups during the first six weeks after discharge (T4).

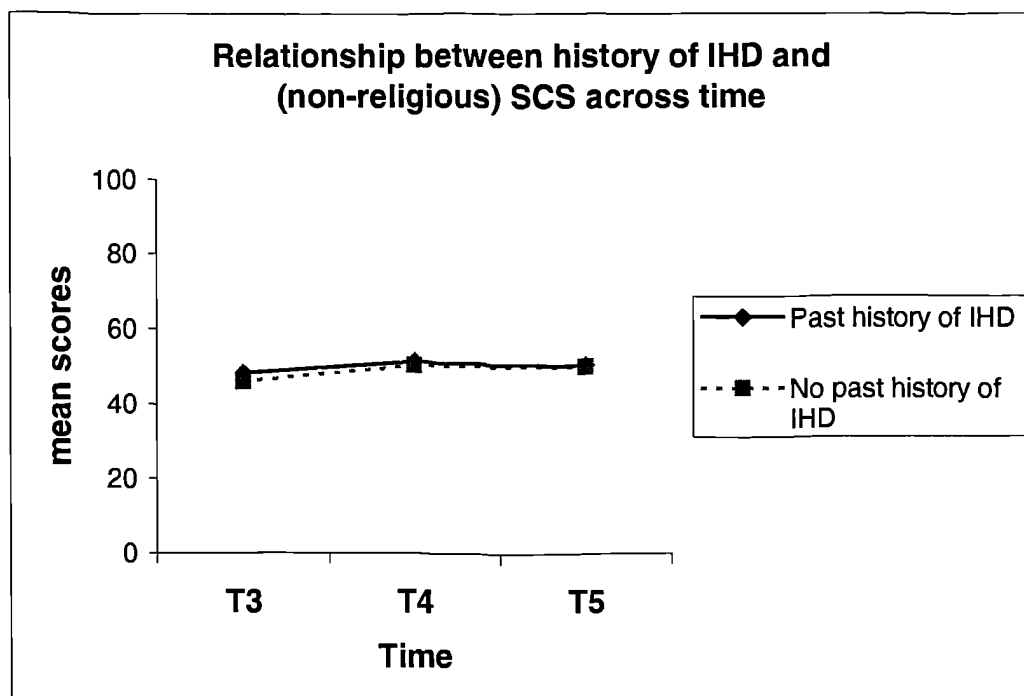
Figure 10.2.3. demonstrates no significant difference in past history of IHD and NRCS across time. Similarly, Table 10.2 shows no significant differences between the two groups across time.

Figure 10.2.2. RM.ANOVA : Differences in mean scores of relationships between groups of IHD and (religious) coping strategies across time.



R.M. ANOVA ($F = 2.594$, $p = 0.114$)

Figure 10.2.3. RM.ANOVA : Differences in mean scores of relationships between groups of IHD and (non-religious) SCS across time.



R.M. ANOVA ($F = 0.046$, $p = 0.831$)

Table 10.2. Student t-test : Comparison of ischaemic heart disease (IHD) with SCS derived from HSCS scale

Type of SCS	Time	Group	n	t	df	P
Combined	T3	1 2	24 29	0.013	51	0.989
	T4	1 2	24 28	2.47	50	0.017
	T5	1 2	24 27	1.37	49	0.179
Religious	T3	1 2	24 29	1.698	51	0.096
	T4	1 2	24 28	2.505	50	0.016
	T5	1 2	24 27	1.529	49	0.133
Non-religious	T3	1 2	24 29	1.110	51	0.272
	T4	1 2	24 28	0.720	50	0.475
	T5	1 2	24 27	0.294	49	0.770

Group No : 1 = Past history of IHD, 2 = No history of IHD

DISCUSSION.

Table 10.2. demonstrates a significant difference during the first 6 weeks after discharge (T4) in the combined SCS (T4: $t = 2.47$, $p = 0.017$) and RCS (T4: $t = 2.505$, $p = 0.016$). The patients who reported past history of IHD in the combined SCS (T4: $M = 95.71$, $SD = 12.03$) scored higher than those who did not report IHD (T4: $M = 87.89$, $SD = 10.82$).

Similarly, in the RCS, the patients who reported past history of IHD (T4: $M = 44.21$, $SD = 8.87$) scored higher than those who did not report IHD (T4: $M = 37.50$, $SD = 10.23$).

Both significant results occurred during the first six weeks after discharge (T4). It appears that this time was a time when they faced the reality of MI, which may have triggered increased SCS. It is interesting to note, although not significant, that the patients with past history of IHD scored higher than their counterparts in the combined SCS, RCS and NRCS across time. Therefore, RCS, such as prayer, may have helped them to transcend to God, seeking help from a higher power. Additionally, NRCS such as talking to other patients with MI and seeking more information, may have sustained their efforts to persevere in their coping efforts.

The qualitative data revealed that patients with past history of IHD blamed themselves for the non compliance with their regime, such as non compliance with hypotensive drugs, lack of exercise, imbalance in diet and heavy smoking before MI. According to the attributional research, patients who blamed themselves for illness were found to initiate coping methods more than those who attributed their illness to luck or other people's fault. (Bulman and Wortman 1977, Lowery and Jacobsen 1985). However, it could be argued that during the patients' efforts to adapt to MI, the patients may have experienced self-insufficiency during the process of coping and acceptance of MI which may have caused negative emotions, such as fear, sadness, anger and depression (Bowman 2001, Kubler Ross 1969).

This is reflected in the mean values of depression on the sixth week after discharge (T4: M= 1.3) which is higher than that of their counterparts (T4: M= 0.8). However, Kim et al. (2000) found no significant differences between scores of anxiety and past history of IHD. It is noted that Kim et al. (2000) collected data during the acute phase of MI, that is on the first 72 hours after admission to hospital, the results of which may differ from the anxiety levels during the first six weeks after discharge.

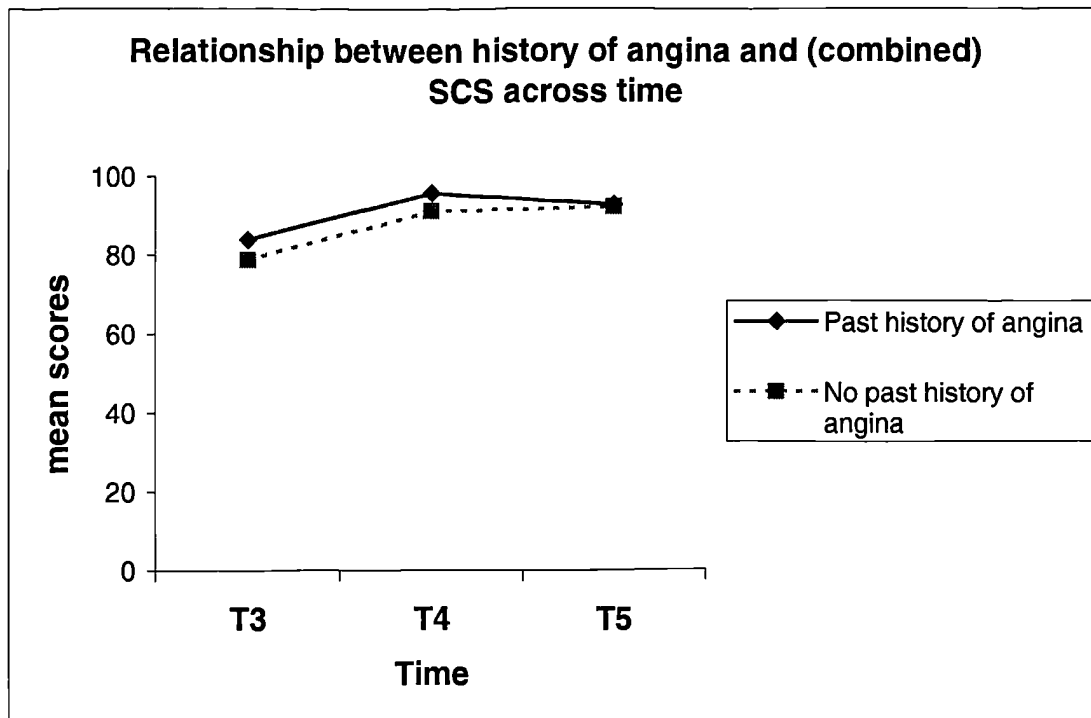
Furthermore, the level of SWB on the sixth week after discharge (T4), of patients with past history of IHD (T4: M= 113.2) was found lower than the ones without history of IHD (T4: M=114.5). This may be due to negative religious coping, such as considering MI as a punishment from God. This is supported by Koenig et al. (1998) who found, in a sample of 577 older clients, a positive relationship between religious coping and depression.

The findings of Fehring et al. (1997) who found a negative significant relationship between SWB and depression, in a sample of 100 older clients with malignancy, lends support to the lower levels of SWB of patients with past history of IHD. Another possible reason is that the group with past history of IHD consisted of a greater number of older patients between 60-89 years (n=25) than their counterparts (n=13), who tend to be more religious (Reed 1986, 1987).

No direct research was traced on the possible relationship between past history of IHD and spiritual coping in MI. Therefore, further research is suggested, supported by qualitative data in order to explore the experiences of patients with past history of IHD during the recovery period following MI.

3. Differences in SCS within the subgroups of history of angina across time.

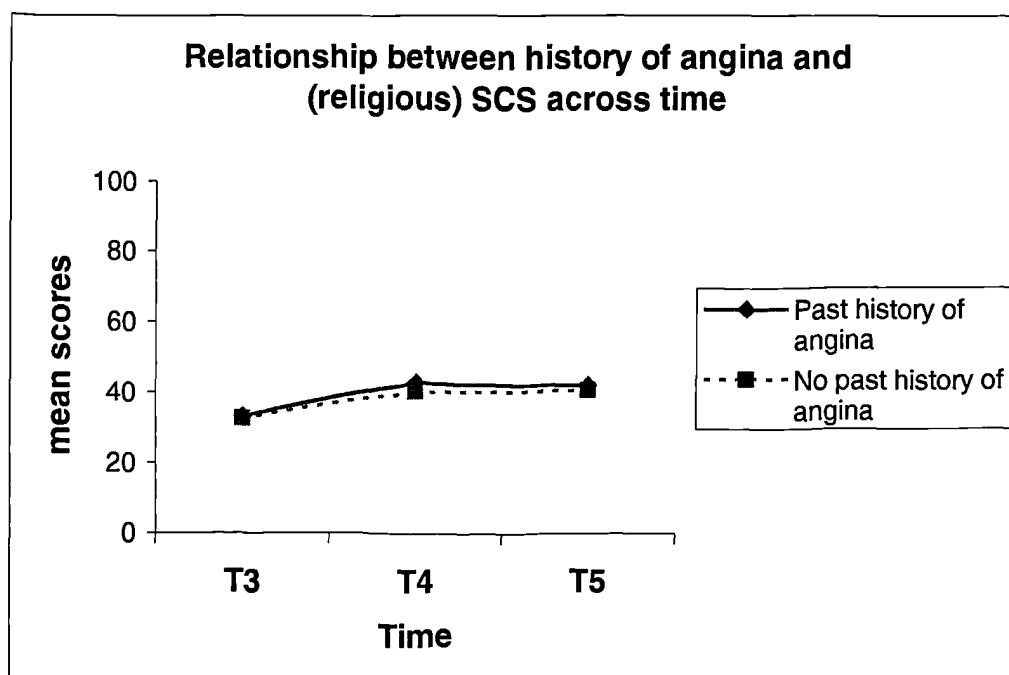
Figure 10.3.1. RM.ANOVA: Differences in mean scores of relationships between groups of Angina and (combined) SCS across time.



R.M. ANOVA ($F = 0.523$, $p = 0.473$)

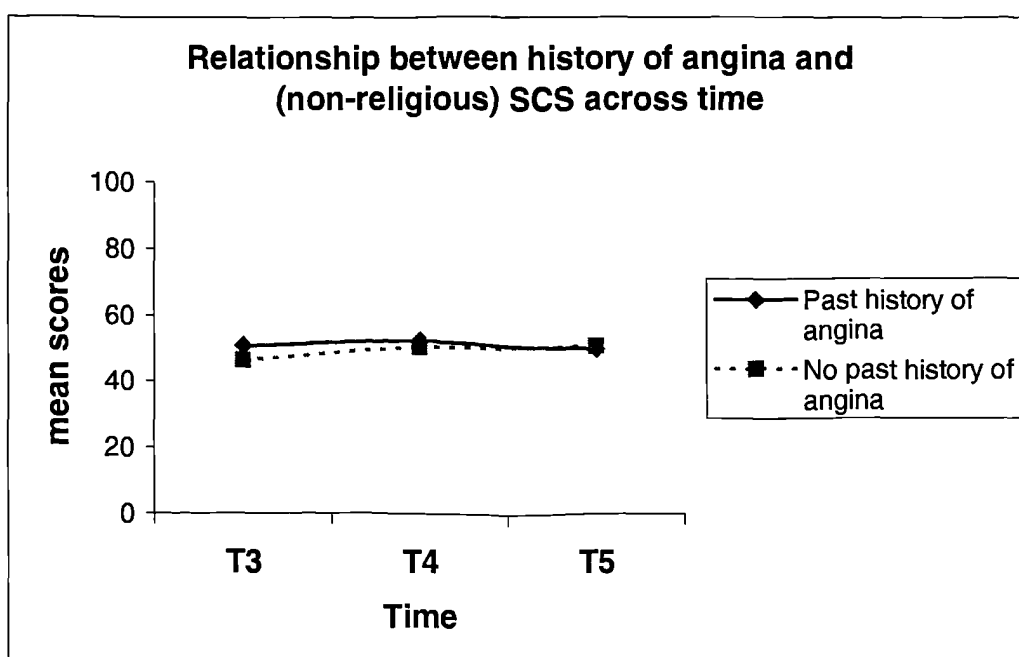
Figures 10.3.1. – 10.3.3. reveal no significant differences in past history of angina and combined SCS, RCS and NRCS. Similarly Table 10.3 demonstrates no significant differences in the three types of SCS between the two groups across time.

Figure 10.3.2. RM.ANOVA : Differences in mean scores of relationships between groups of **Angina** and (religious) coping strategies across time.



R.M. ANOVA ($F = 0.788$, $p = 0.379$)

Figure 10.3.3. RM.ANOVA: Differences in mean scores of relationships between groups of **Angina** and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 0.025$, $p = 0.875$)

Table 10.3. Student t-test : Comparison of **Angina** with SCS derived from HSCS scale

Type of SCS	Time	Group	n	t	df	P
Combined	T3	1 2	10 43	1.638	51	0.106
	T4	1 2	10 42	1.305	50	0.198
	T5	1 2	10 41	0.159	49	0.953
Religious	T3	1 2	10 43	0.414	51	0.681
	T4	1 2	10 42	0.940	50.	0.352
	T5	1 2	10 41	0.446	49	0.658
Non -Religious	T3	1 2	10 43	1.672	51	0.101
	T4	1 2	10 42	1.086	50	0.283
	T5	1 2	10 41	-0.493	49	0.624

Group No: 1 = History of Angina, 2 = No history of Angina

DISCUSSION.

Table 10.3. shows no significant differences between past history of angina and SCS across time. However, although not significant, patients with past history of angina scored higher in combined, religious and NRCS across time. The only exception lies on the third month after discharge (T5) in the NRCS, whereby patients who reported past history of angina had slightly lower scores (M=50.83, SD=4.76) than their counterparts (M=50.00, SD=4.81).

Patients with past history of angina reported higher scores of anxiety across time (M= 7.1 – 4.0) against the other group (M= 6.8 – 3.6). Similarly, depression scores were higher in patients with history of angina across time (range: M= 4.8 – 1.2) than their counterparts

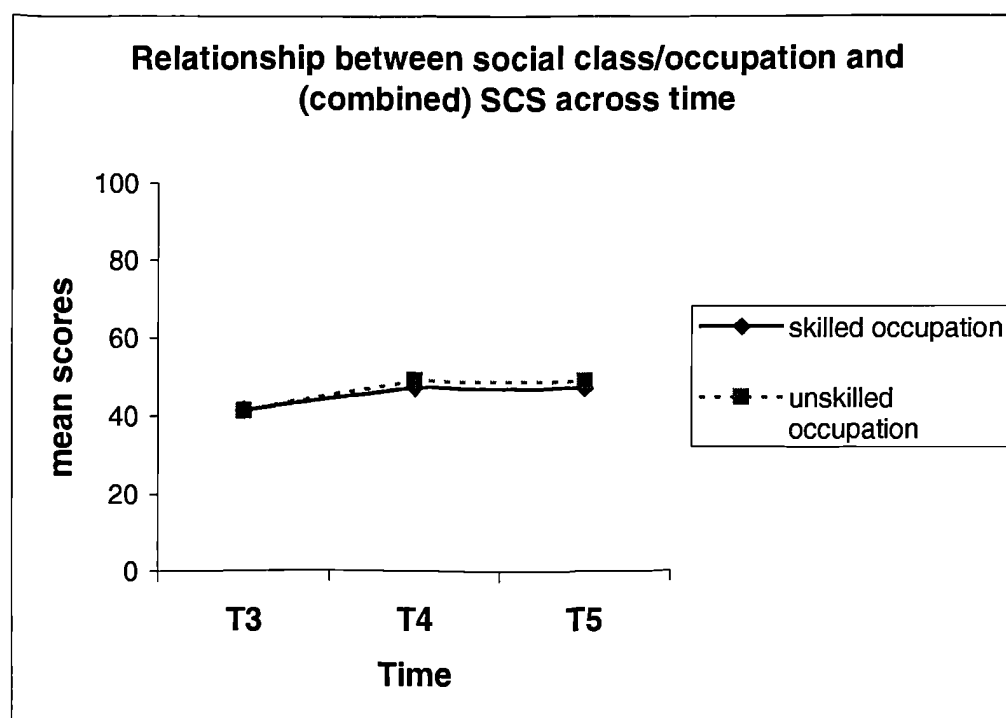
(range : $M = 3.5 - 1.0$). The lack of significant difference indicates that both groups of patients may have been concerned of the present circumstances of the heart attack, such as disabling pain, using SCS to overcome the current stressful situation. Additionally, it is argued that the past history of angina does not account for all the reported scores of anxiety and depression. Therefore the patients, on understanding the severity of illness, may experience uncertainties about their health and life expectations in future.

This is comparable with the findings of Webster and Christman (1988) who found, in a sample of 20 patients with MI, that patients with past history of MI or angina reported signs of higher levels of uncertainty which was positively related to anxiety and depression. Also, increased uncertainty was positively related to increased use of affective-focused methods, such as religious coping (Lazarus and Folkman 1984) Thus, it appears that recurrence of illness may increase uncertainty and anxiety and depression. While acknowledging the small size of the sample, the findings shed light on the possible impact of recurrence of illness in MI. Thus further research is suggested to explore the experiences and use and helpfulness of SCS of patients with recurrent coronary heart disease with comparison with other illness, such as pulmonary disease.

Finally, it is worth noting that patients with past history of angina had a higher range of mean scores of SWB across time ($M = 111.2 - 114.3$) than the other group ($110.0 - 114.6$). The fact that there is no statistical significant difference, it appears that both groups used SCS, which together with SWB, may have contributed towards the consistent decline in anxiety and depression by the third month after discharge.

4. Differences in SCS within the subgroups of social class/occupation across time.

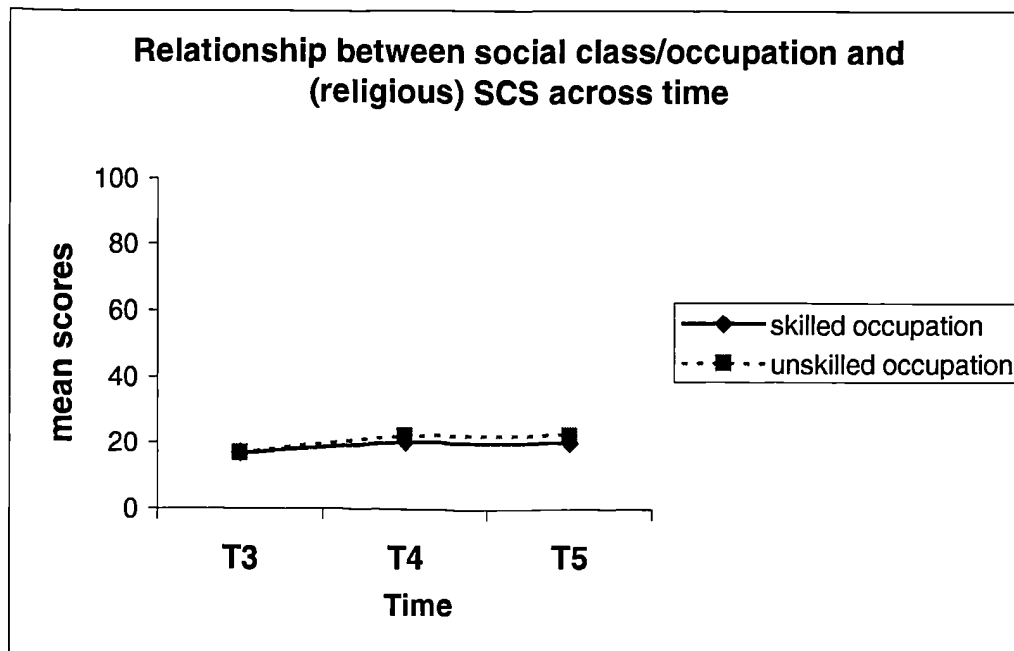
Figure 10.4.1. RM.ANOVA : Differences in mean scores of relationships between groups of social class/occupation and (combined) SCS across time.



R.M. ANOVA ($F = 0.752$, $p = 0.390$)

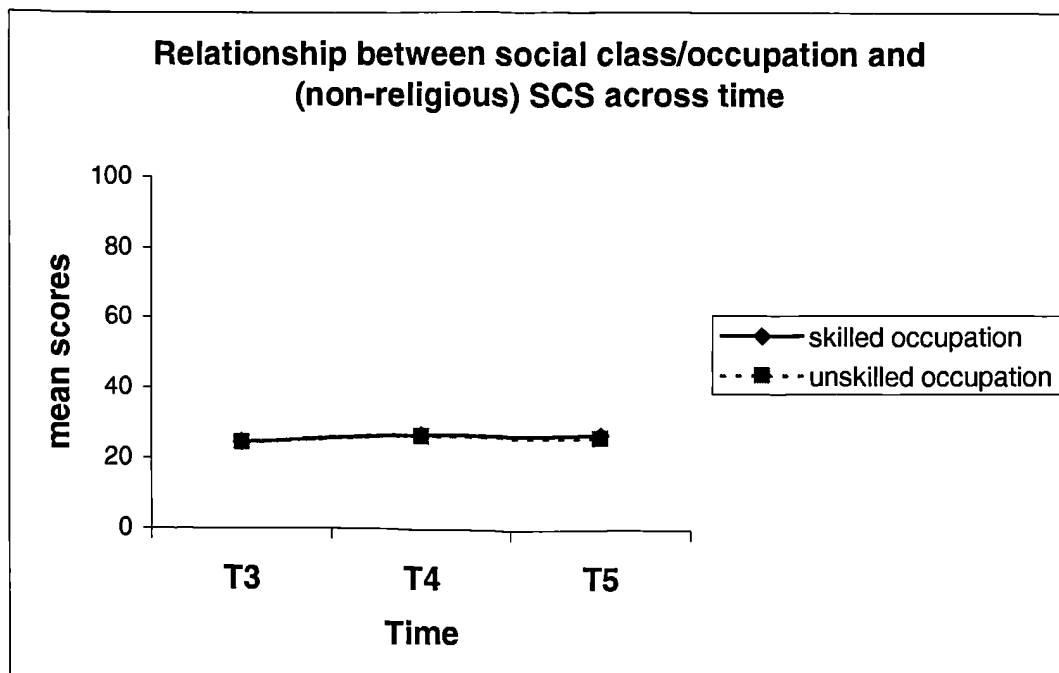
Figures 10.4.1. – 10.4.3. exhibit no significant difference in social class/occupation and combined SCS, RCS and NRCS. Similarly, Table 10.4 shows no significant differences between the two groups in the three types of SCS across time.

Figure 10.4.2. RM.ANOVA : Differences in mean scores of relationships between groups of social class/occupation and (religious) coping strategies across time.



R.M. ANOVA ($F = 0.973$, $p = 0.329$)

Figure 10.4.3. RM.ANOVA : Differences in mean scores of relationships between groups of social class/occupation and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 0.057$, $p = 0.812$)

Table 10. 4. Student t-test : Comparison of **class/occupation** with SCS derived from HSCS scale

Type of SCS	Time	Group	n	t	df	P
Combined	T3	1 2	22 31	-0.092	51	0.927
	T4	1 2	22 30	-1.228	50	0.225
	T5	1 2	21 30	-0.911	49	0.367
Religious	T3	1 2	22 31	-0.358	51	0.722
	T4	1 2	22 30	-1.822	50	0.079
	T5	1 2	21 30	-1.651	49	0.109
Non - Religious	T3	1 2	22 31	-0.239	51	0.812
	T4	1 2	22 30	0.923	50	0.361
	T5	1 2	21 30	1.271	49	0.210

Group No: 1 = skilled occupation; 2 = unskilled occupation

DISCUSSION.

Table 10.4. reveals no significant differences between social class/occupation in combined SCS, RCS and NRCS. However, it is noted that the unskilled group tended to score higher than the skilled in the three types of SCS across time. Thus, it seems that the unskilled group might have felt less sufficient to cope with the demands of MI. This may be the reason why the unskilled group rated higher mean scores in anxiety ranging between (M=8.0 – 3.9) against the skilled group (M=5.2 – 3.3). Similarly, the unskilled group had higher mean scores in depression ranging between (M= 4.2 – 1.3) against the skilled (M=3.1 -0.8).

This is substantiated by Rom (1994) who, in a sample of 155 patients with first MI during the first 3-15 months after MI, found higher levels of depression in the unskilled workers, who tended to use avoidance, positive thinking and religiosity more than their counterparts.

Apparently, these coping strategies have helped in the scores of SWB which, although both the skilled and unskilled groups had stable scores of SWB across time, the unskilled group ended up with higher scores in SWB by the third month after discharge (T5: M=114.8) whilst the skilled had (T5: M= 114.1). The stability in SWB scores is supported by research, whereby (1998), in a sample of 216 patients with amputation, post-polio, spinal cord injury, breast/prostate cancer, found no significant relationship between SWB and employment. Thus further research is suggested to identify possible relationships between SWB and social class/occupation in patients with MI.

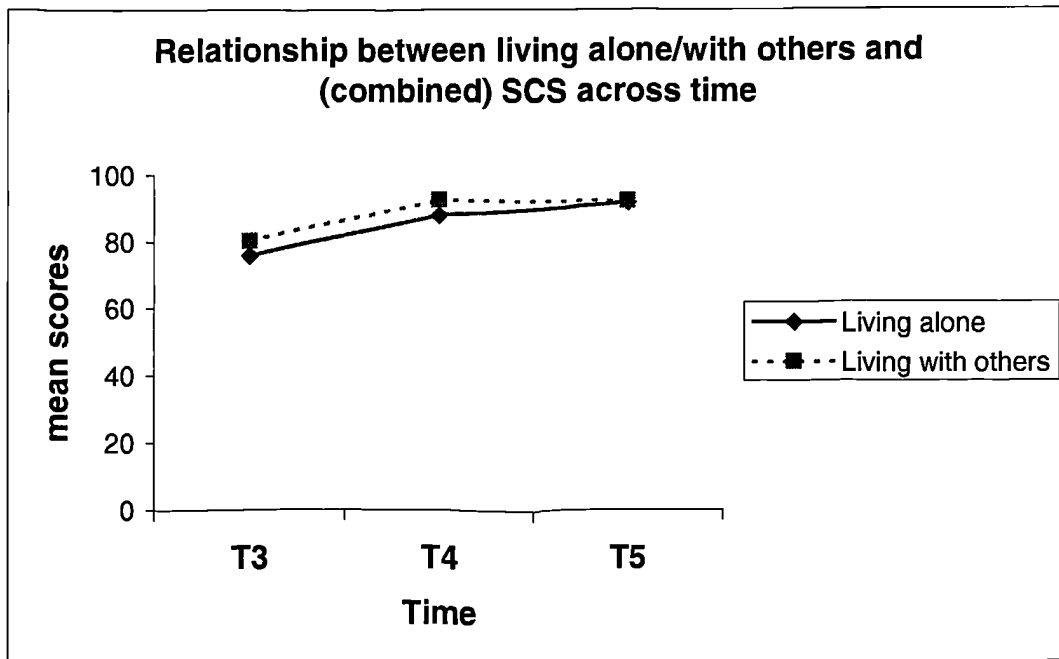
Furthermore, the findings showed that the unskilled group were less educated, having 4-7 years (n=26) and 8-12 years of education (n=15). In contrast, the skilled group had higher education, that is, 4-7 years (n=4), 8-12 years (n=15) with an additional 13-20 years (n=10). Thus the skilled group might have equipped themselves with more health information, rendering themselves more self-sufficient to cope with MI, leading to less use of SCS.

Additionally, the unskilled group were older aged 60 – 89 years (n=24) than their counterparts (n= 14) which may explain the higher scores in SCS, including the RCS. This is corroborated by Webster and Christman (1988) who found, in a sample of 20 patients with MI, that lower social class tended to use more affective-focused mechanisms, such as religiosity.

Furthermore, Figure 7.7. exhibits a higher number of skilled males (n=24) than the females (n=5). Also, the unskilled group had a higher number of *often* and *very often* church attendance (n=37) than the skilled group (n=21) which may have yielded higher religiosity in the unskilled group. Research suggests that the older, the less educated and females tend to be more spiritual (Highfield 1992, Reed 1987) and are likely to use more RCS (Reed 1986, Koenig et al. 1998, 1992). Therefore, age, education and gender may have been parallel with lower social class /unskilled occupation in scoring higher in SCS.

5. Differences in SCS within the groups of living alone / with others across time.

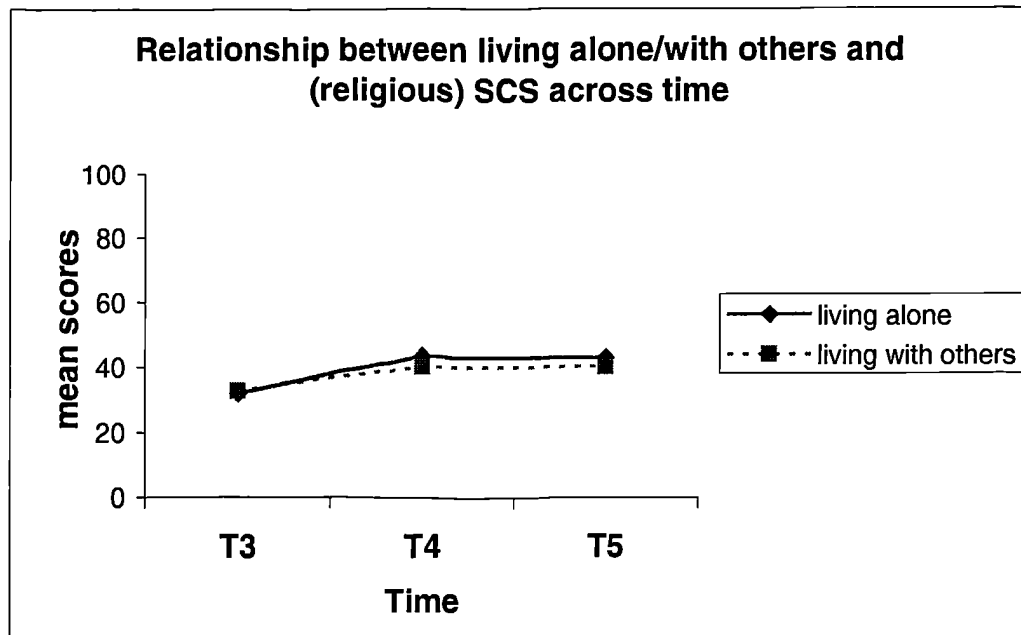
Figure 10.5.1. RM.ANOVA : Differences in mean scores of relationships between groups of living alone/with others and (combined) SCS across time.



R.M. ANOVA ($F = 0.247$, $p = 0.622$)

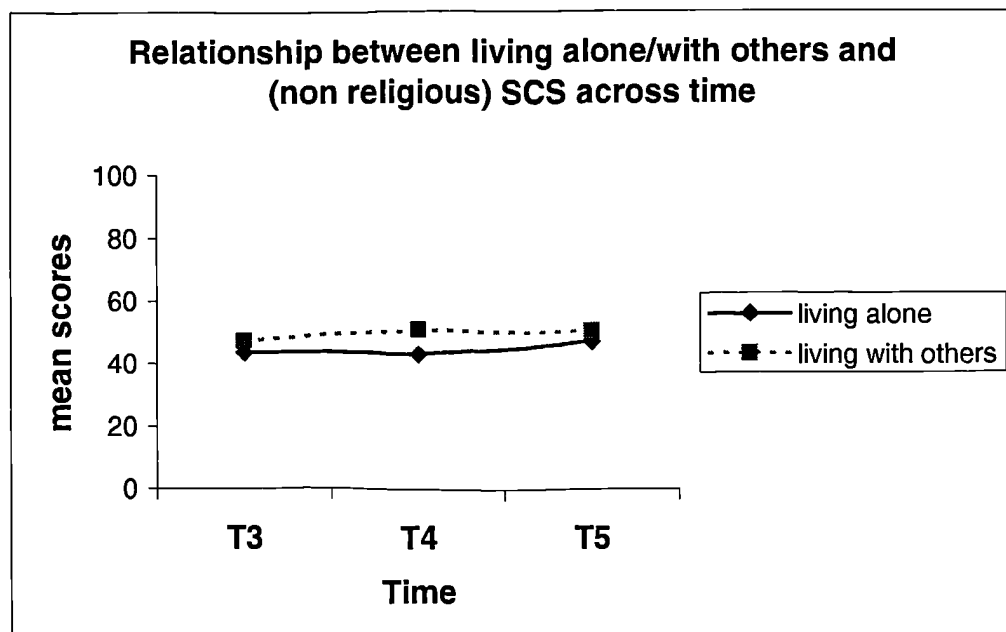
Figure 10.5.1. demonstrates no significant differences in living alone/with others and combined SCS, RCS and NRCS across time. Similarly, Table 10.5 shows no significant differences in combined SCS and RCS between the two groups across time. However, a significant difference is exhibited in NRCS during the first six weeks after discharge (T4).

Figure 10.5.2. RM.ANOVA : Differences in mean scores of relationships between groups of living alone/with others and (religious) coping strategies across time.



R.M. ANOVA ($F = 0.670$, $p = 0.417$)

Figure 10.5.3. RM.ANOVA : Differences in mean scores of relationships between groups of living alone/with others and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 2.49$, $p = 0.121$)

Table 10.5. Student t-test : Comparison of **Living alone/with others** with SCS derived from HSCS scale.

Type of SCS	Time	Group	n	t	df	P
Combined	T3	1 2	3 50	-0.935	51	0.353
	T4	1 2	3 49	-0.519	50	0.606
	T5	1 2	3 48	-0.064	49	0.949
Religious	T3	1 2	3 50	-0.074	51	0.941
	T4	1 2	3 49	0.656	50	0.515
	T5	1 2	3 48	0.492	49	0.625
Non -Religious	T3	1 2	3 50	-0.745	51	0.460
	T4	1 2	3 49	-2.46	50	0.017
	T5	1 2	3 48	-1.135	49	0.262

Group No: 1 = Living alone, 2 = Living with others

DISCUSSION.

Table 10.5. shows a significant difference in living alone/with others and NRCS during the first six weeks after discharge (T4: $t=-2.46$, $p=0.017$). It was found that those patients living with others (Group 2) scored higher in NRCS. This may be because of the Maltese culture which is supportive by family members. Thus, family support may have helped the patients to find meaning and purpose in life, which was ranked as first, second and third as most helpful (Table 7.4). The qualitative data revealed that the patients' goals in life were family oriented, such as being an instrument of unity in the family and working hard to live long enough to see their younger sons and / or daughters settled in life.

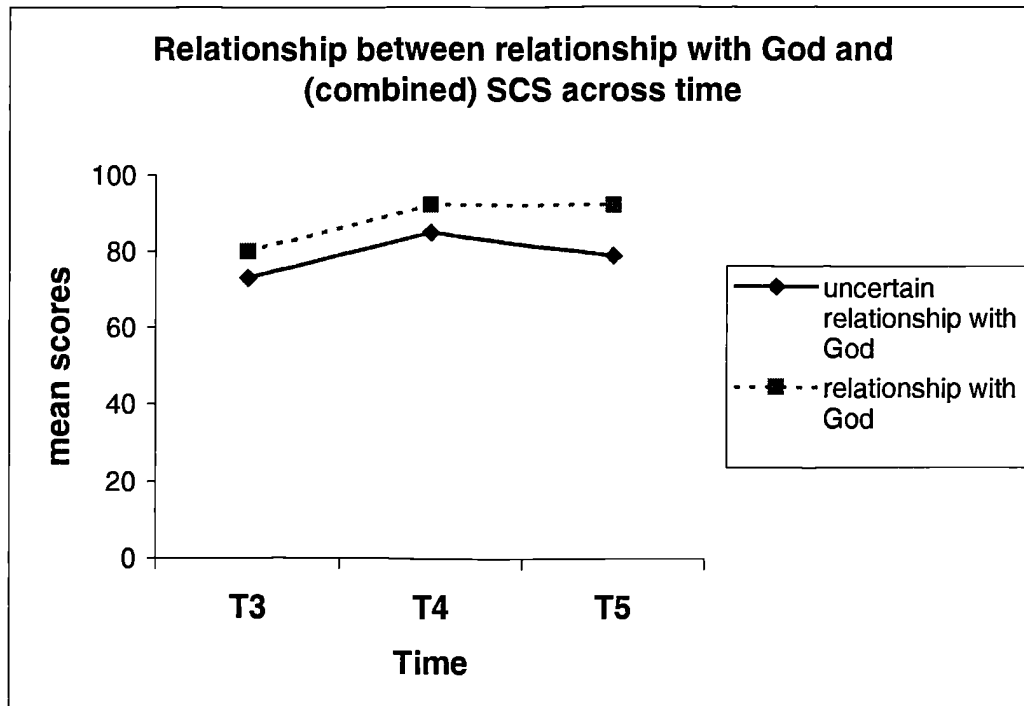
Furthermore, Table 10.5. patients living with others scored higher in combined SCS, whilst those living alone scored higher in the RCS. Since these patients were living alone, although they may have been supported by their neighbours and family, they might have had less outings in the countryside or by the seaside to appreciate nature as a means of relaxation.

The findings demonstrate that patients living with others scored lower in anxiety during the first six weeks after discharge (T4: M=4.4.) than the other group (T4: M= 4.7). Similarly, less depression scores were obtained by the patients living with others (T4: M=1.1.) than the other group (T4: M= 2.6). This is accompanied by higher scores in SWB in the patients living with others during the first six weeks after discharge (T4: M=114.1) than the other group (T4: M=108.0).

Similarly, Riley (1998) found no significant relationship between spiritual well being and living alone/with others. Therefore, since the number of patients living alone is very small, interpretation of findings is to be done with caution. Similarly, comparison of research is limited due to the very small sample and the dearth of research on living alone/with others. Thus further research with larger samples is suggested to compare spiritual coping, anxiety, depression and spiritual well being in the recovery from illness between these two groups.

6. Differences in SCS within the subgroups of relationship with God across time.

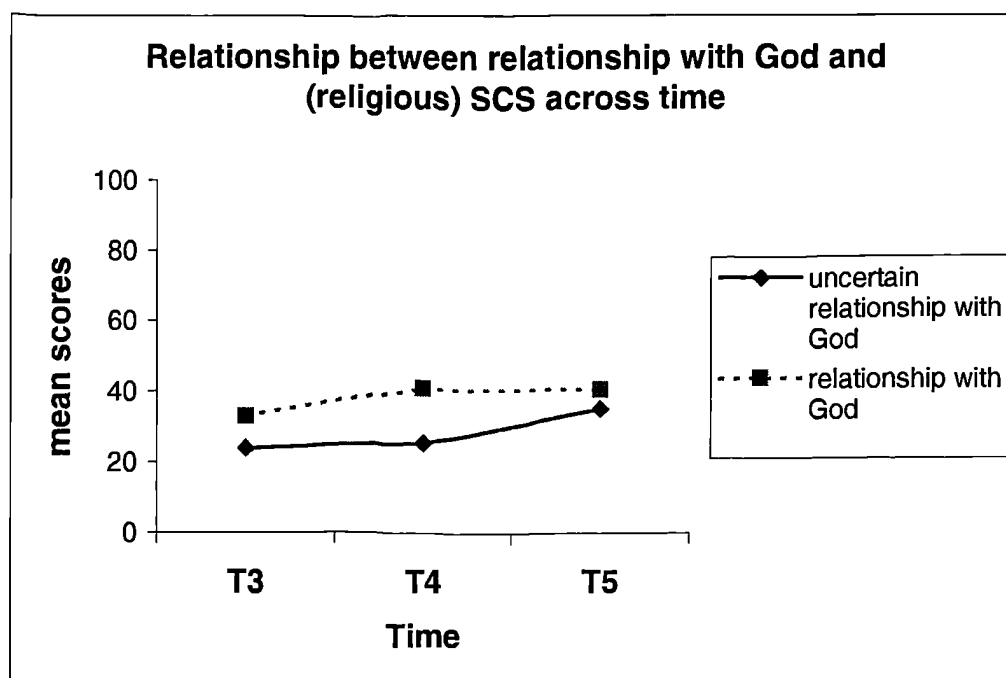
Figure 10.6.1. RM.ANOVA : Differences in mean scores of relationships between groups of relationship with God and (combined) SCS across time.



R.M. ANOVA ($F = 0.164$, $p = 0.688$)

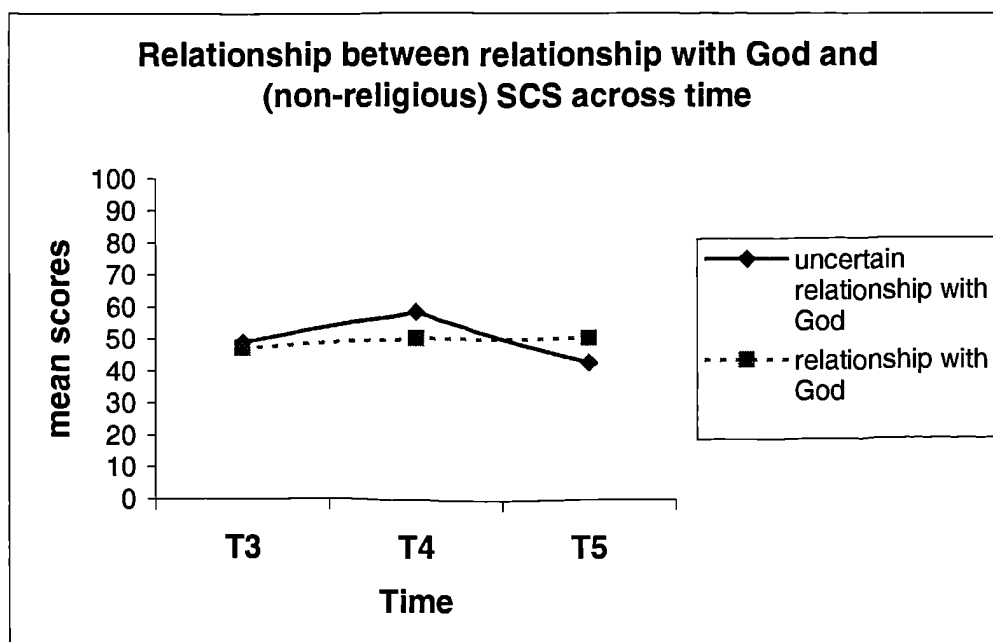
Figures 10.6.1. – 10.6.3. and Table 10.6 illustrate no significant difference in relationship with God and combined SCS, RCS and NRCS across time and between the subgroups of relationship with God.

Figure 10.6.2. RM.ANOVA : Differences in mean scores of relationships between groups of relationship with God and religious coping strategies across time.



R.M. ANOVA ($F = 3.164$, $p = 0.081$)

Figure 10.6.3. RM.ANOVA : Differences in mean scores of relationships between groups of relationship with God and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 6.07$, $p = 0.017$)

Table 10.6. Student t-test : Comparison of **Relationship with God** with SCS derived from HSCS scale.

Type of SCS	Time	Group	n	t	df	P
Combined	T3	1 2	1 52	-0.930	51	0.356
	T4	1 2	1 51	-0.546	50	0.588
	T5	1 2	1 50	-1.160	49	0.252
Religious	T3	1 2	1 52	-1.043	51	0.302
	T4	1 2	1 51	-1.474	50	0.147
	T5	1 2	1 50	-0.583	49	0.563
Non -Religious	T3	1 2	1 52	0.263	51	0.793
	T4	1 2	1 51	1.504	50	0.139
	T5	1 2	1 50	-1.65	49	0.102

Group No: 1 = Uncertain relationship with God, 2 = Relationship with God

DISCUSSION.

Table 10.6. shows no significant differences between relationship with God and use and helpfulness of SCS. Additionally, the group with a relationship with God tended to have higher mean scores in the combined SCS and RCS across time. This higher score is found again in the NRCS on the third month after discharge. Sodestrom and Martinson (1987), in a sample of 25 oncology patients, found that 88% of patients found their meaning and purpose in life through their belief in God and relationship with God. According to the findings of Hungelmann et al. (1985) derived from a sample of 31 older persons,

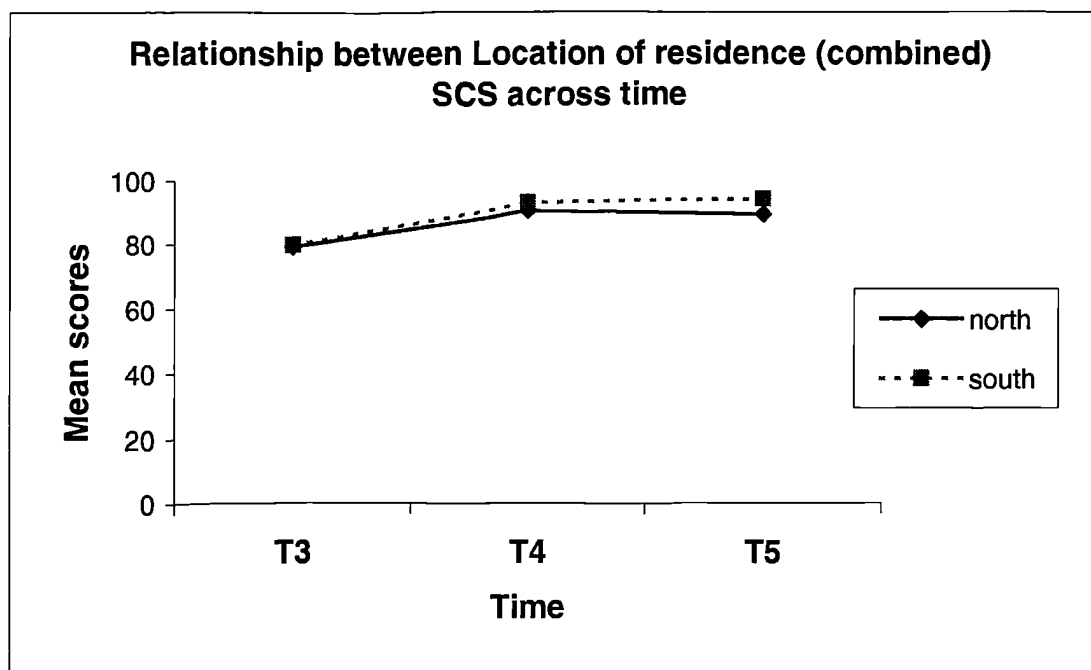
relationship with God is considered in terms of love and trust in God. This may be achieved through prayer and worship.

Therefore, a positive relationship with God may be a means of relief of stress, such as perceiving God as a caring paternal figure, which was found beneficial by patients in coping with polio (Woods Smith 1995). In contrast, Koenig et al. (1998) found, in a sample of 577 older clients, a positive relationship between depression and negative religious coping, for example, seeing God as a punitive father.

Since there is only one person who classified himself as having an *uncertain* relationship with God, comparison between these two groups is impossible. Thus further research is suggested with larger samples which enables comparison between the believers and the non-believers. This is difficult in Malta. Thus comparison of Maltese people with other countries, such as the United Kingdom may facilitate this comparison.

7. Differences in SCS within the subgroups of location of residence across time.

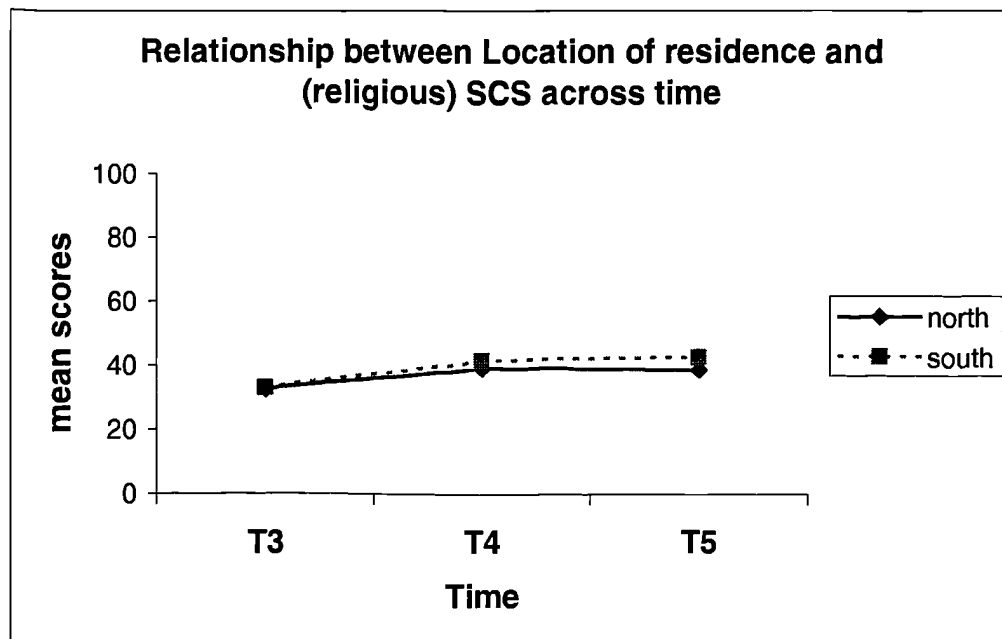
Figure 10.7.1. RM.ANOVA : Differences in mean scores of relationships between groups of location of residence and (combined) SCS across time.



R.M. ANOVA ($F = 0.011$, $p = 0.915$)

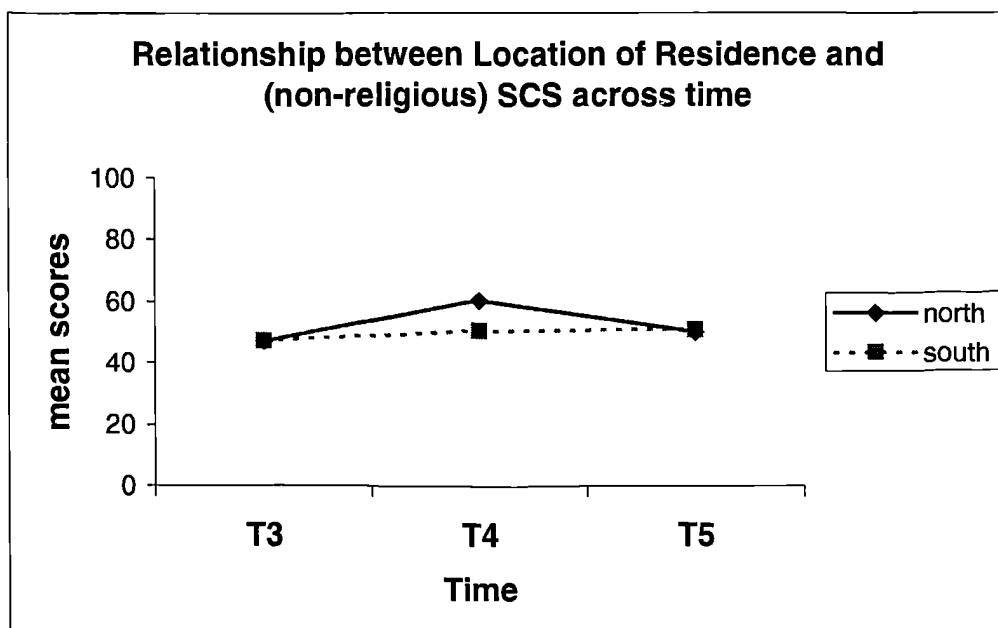
Figures 10.7.1. – 10.7.3 demonstrate no significant differences in location of residence and combined SCS, RCS and NRCS across time. Table 10. 7 reveals no significant differences in the three types of SCS between the two groups across time.

Figure 10.7.2. RM.ANOVA: Differences in mean scores of relationships between groups of location of residence and (religious) coping strategies across time.



R.M. ANOVA ($F = 0.023$, $p = 0.88$)

Figure 10.7.3. RM.ANOVA : Differences in mean scores of relationships between groups of location of residence and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 0.095$, $p = 0.760$)

Table 10.7. Student t-test : Comparison of Location of residence in Malta with SCS derived from HSCS scale.

Type of SCS	Time	Group	n	t	df	P
Combined	T3	1	27	-0.216	51	0.829
		2	26			
	T4	1	27	-1.130	50	0.264
		2	25			
	T5	1	26	-1.516	49	0.136
		2	25			
Religious	T3	1	27	-0.410	51	0.683
		2	26			
	T4	1	27	-1.296	50	0.202
		2	25			
	T5	1	26	-1.559	49	0.127
		2	25			
Non -Religious	T3	1	27	-0.016	51	0.987
		2	26			
	T4	1	27	-0.120	50	0.905
		2	25			
	T5	1	26	-0.608	49	0.546
		2	27			

Group N : 1 = North, 2 = South

DISCUSSION.

Table 10.7. demonstrates no significant differences between location of residence in Malta and SCS across time. However, although not significant, it is noted that the south group scored higher in the combined SCS, RCS and NRCS than the north group. The absence of significant differences infers that both groups may have felt insufficient to cope with the demands of MI, rendering the use of SCS across time, no matter where they inhabited.

Additionally, the findings suggest that the south group scored less anxiety across time, ranging between (M= 6.3 – 3.6) against the north group (M= 7.3 – 3.8). Additionally, the south group scored lower in depression across time (M= 3.3 – 1.0) than the north group

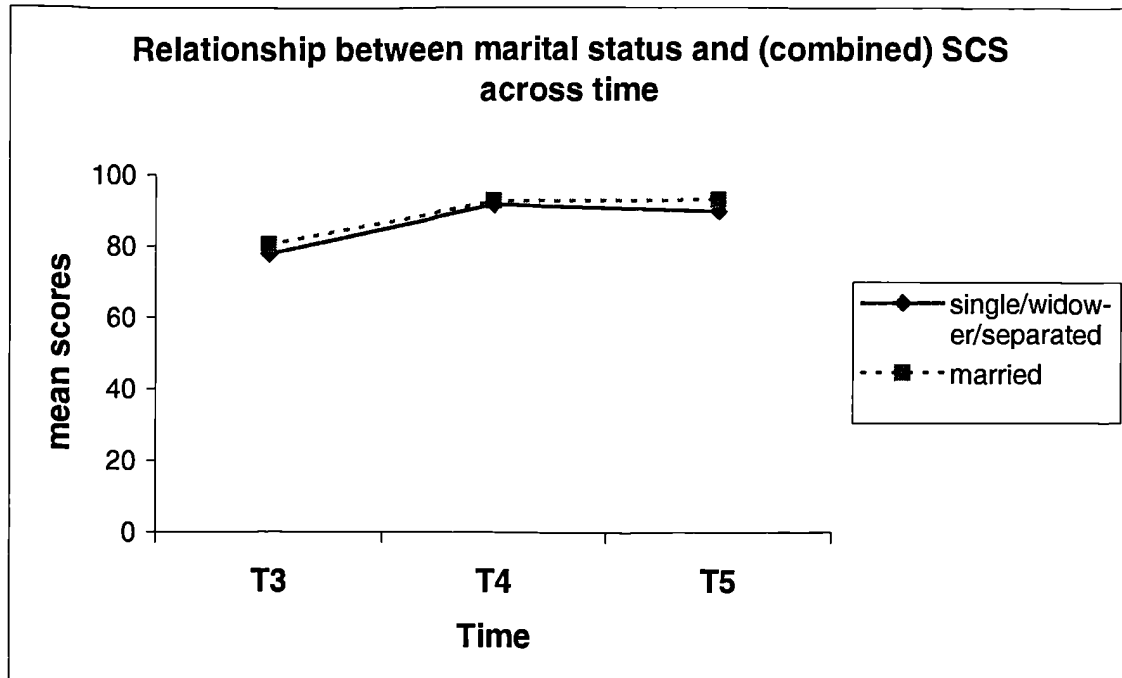
($M = 4.2 - 1.1$). The stable scores in SWB suggest slightly higher scores in the south group ranging between ($M = 111.2 - 114.9$), whereas the north group scored between ($109 - 114.2$).

Although not significant, it is interesting to find why the south group scored higher across time. Firstly, the younger age group of 40-49 years was greater in the north ($n=7$) than in the south group ($n=4$). Research suggests that the younger, the less spiritual / religious (Reed 1986, 1987, Fernsler et al. 1990). Secondly, the unskilled group scored higher than the skilled group across time in the three types of SCS. Findings revealed that the south group consisted of a higher number of unskilled occupation ($n=24$) than the north group ($n= 17$). This imbalance may have contributed towards the higher scores of SCS in the south group across time.

Since no research was traced on location of residence in Malta, no direct comparison is possible to support the constant higher scores in SCS. It is noted that the census in 1995 discovered a higher percentage of attendance to Sunday Mass in Gozo which is in the north (83.45%) than in Malta (61.74%) (DISCERN 1998). Thus further research is suggested to identify possible differences in SCS between patients from Malta and Gozo.

8. Differences in SCS within the subgroups of marital status across time.

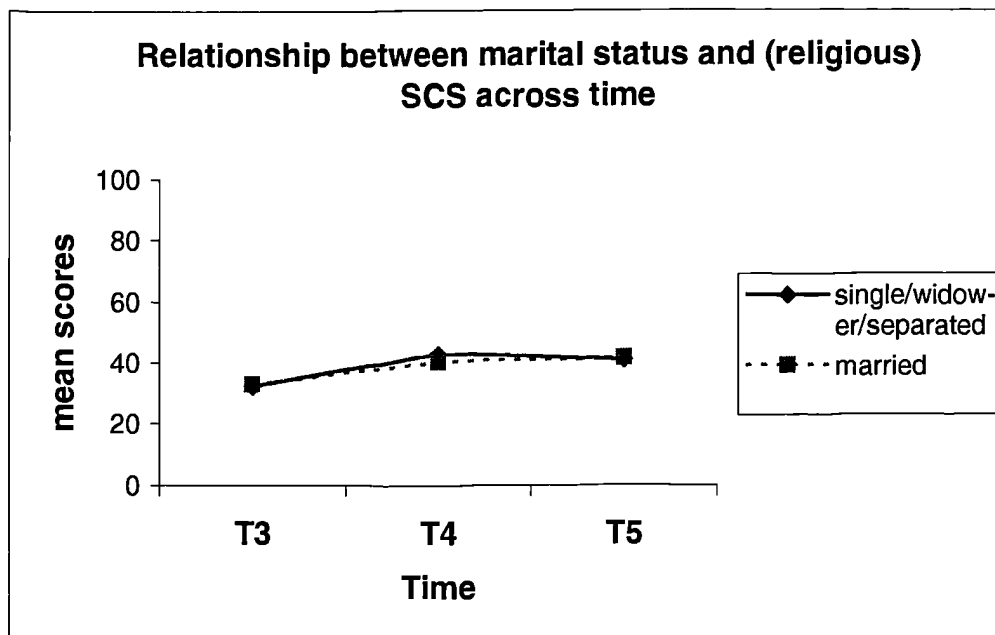
Figure 10.8.1. RM.ANOVA : Differences in mean scores of relationships between groups of marital status and (combined) SCS across time.



R.M. ANOVA ($F = 0.508$, $p = 0.479$)

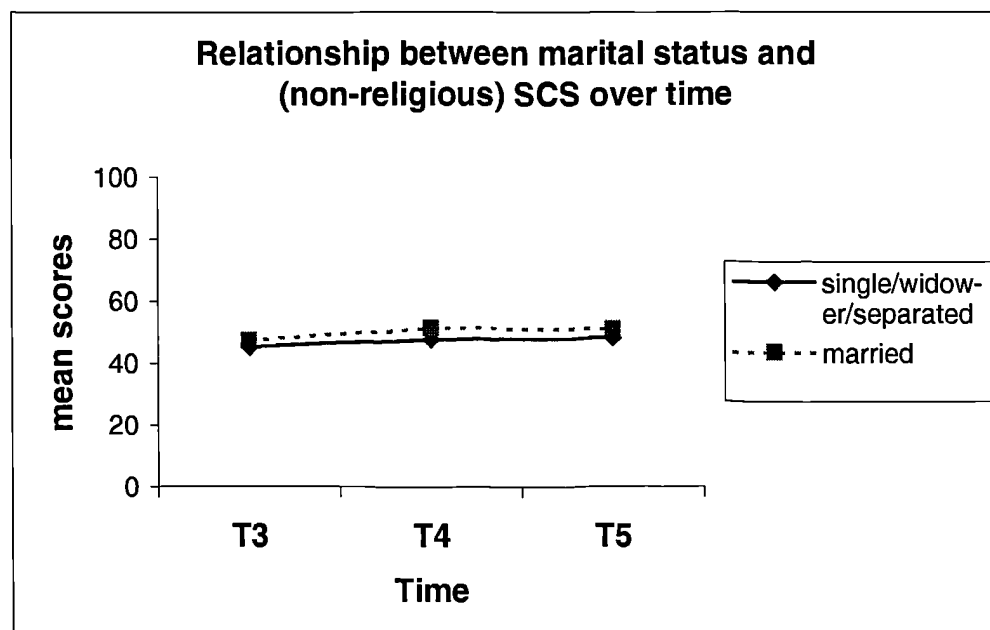
Figures 10.8.1. – 10.8.3. exhibit no significant differences in marital status and combined SCS, RCS and NRCS across time. Similarly, Table 10.8. shows no significant differences in the three types of SCS between the two groups across time.

Figure 10.8.2. RM.ANOVA : Differences in mean scores of relationships between groups of marital status and (religious) coping strategies across time.



R.M. ANOVA ($F = 3.213$, $p = 0.079$)

Figure 10.8.3. RM.ANOVA : Differences in mean scores of relationships between groups of marital status and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 0.524$, $p = 0.473$)

Table 10.8. Student t-test : Comparison of **Marital Status** with SCS derived from HSCS scale.

Type of SCS	Time	Group	n	t	df	P
Combined	T3	1	9	-0.177	51	0.860
		2	44			
	T4	1	9	-0.046	50	0.966
		2	43			
	T5	1	9	-0.759	49	0.452
		2	42			
Religious	T3	1	9	-0.004	51	0.997
		2	44			
	T4	1	9	0.891	50	0.377
		2	43			
	T5	1	9	-0.145	49	0.886
		2	42			
Non-religious	T3	1	9	-0.628	51	0.533
		2	44			
	T4	1	9	-1.777	50	0.082
		2	43			

Group No : 1 = Widowed /separated /single, 2 = Married

DISCUSSION.

Table 10.8. shows no significant difference between marital status and SCS. The married group tended to score higher in the combined CSC, RCS and NRCS across time. The exception lies during the first six weeks after discharge (T4), where the married group scored lower in the RCS. Since there is no significant difference, it infers that spiritual coping, including the religious, were adopted similarly by both groups across time.

Furthermore, the findings showed that the married group scored lower in anxiety across time between ($M = 6.6 - 3.7$) than the other group ($M = 7.9 - 3.6$). Similar findings were found in the depression scores, whereby the married group scored lower ($M = 3.4 - 0.9$) than the other group ($M = 5.3 - 1.7$). This is inconsistent with the findings of Kim et al. (2000)

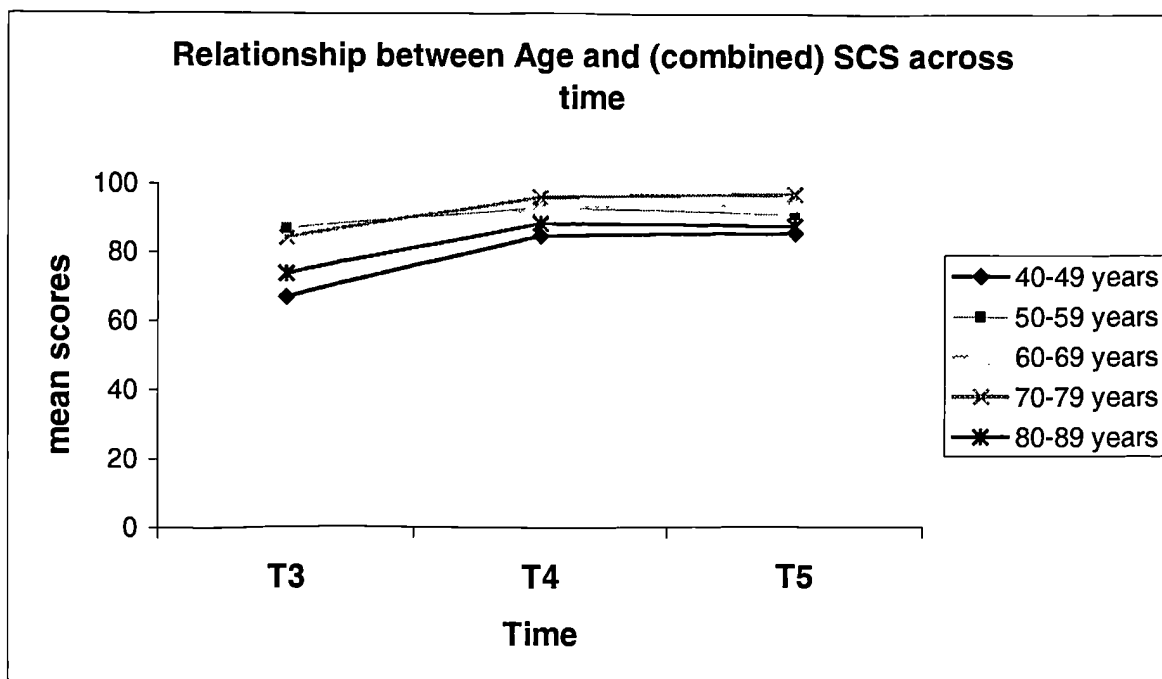
who found that married women had higher anxiety than the single and the widowed females. On the other hand, married men had lower anxiety than the single males. This may be due to the lower income of the women during the first 72 hours after admission with MI. Therefore higher anxiety levels may trigger increased use of SCS as demonstrated by this study.

Conversely, the SWB scores were higher in the married group ranging between (M= 110.2 – 115.0) than the other group (M= 110.4 – 112.3). Thus it appears that the higher scores of SCS may have contributed towards lower levels of anxiety and depression and higher scores in SWB in the married group. The scarce research does not allow direct comparison with these findings on marital status and SCS. However, Riley (1998) found no significant relationship between marital status and SWB in a sample of 216 patients with surgical and oncology disorders.

The higher scores in the SCS in the married group may have been due to the female spouse, since the majority of the sample were males (n=46). According to research the females tend to be more spiritual (Highfield 1992, Reed 1987) and religious (Reed 1986, Koenig et al. 1998). Furthermore, the married group consisted of a greater number of unskilled (n=31) who tended to have higher scores of SCS and RCS (Table 10.4). Thus, further research is suggested to identify possible relationships between marital status and spiritual coping in MI with comparison with other acute and chronic disorders.

9. Differences in SCS within the age groups across time.

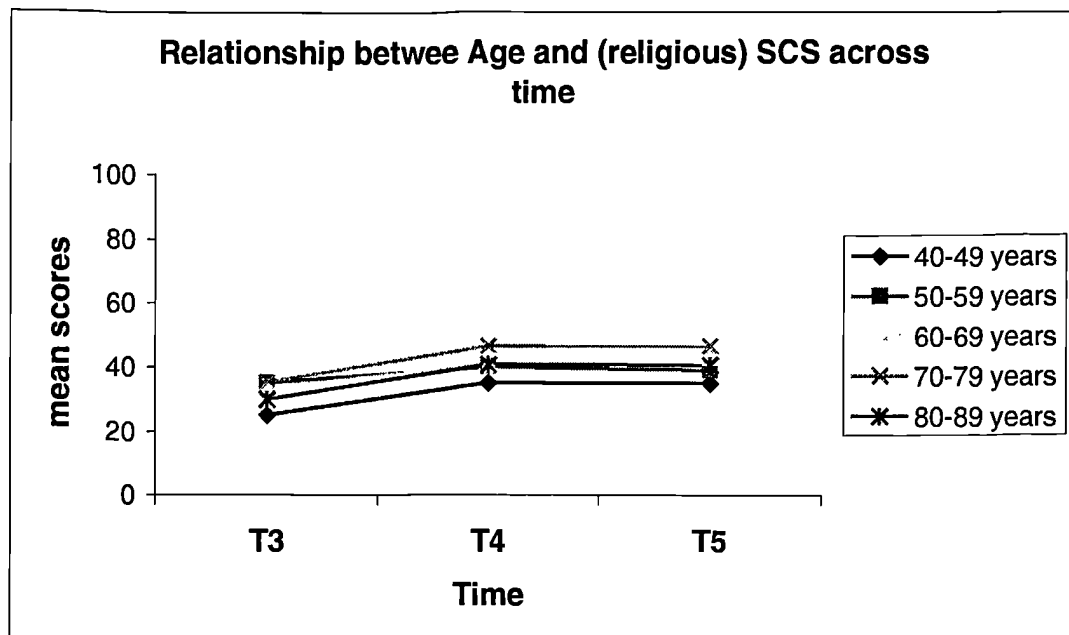
Figure 10.9.1. RM.ANOVA : Differences in mean scores of relationships between age groups and (combined) SCS across time.



R.M. ANOVA ($F = 0.611$, $p = 0.657$)

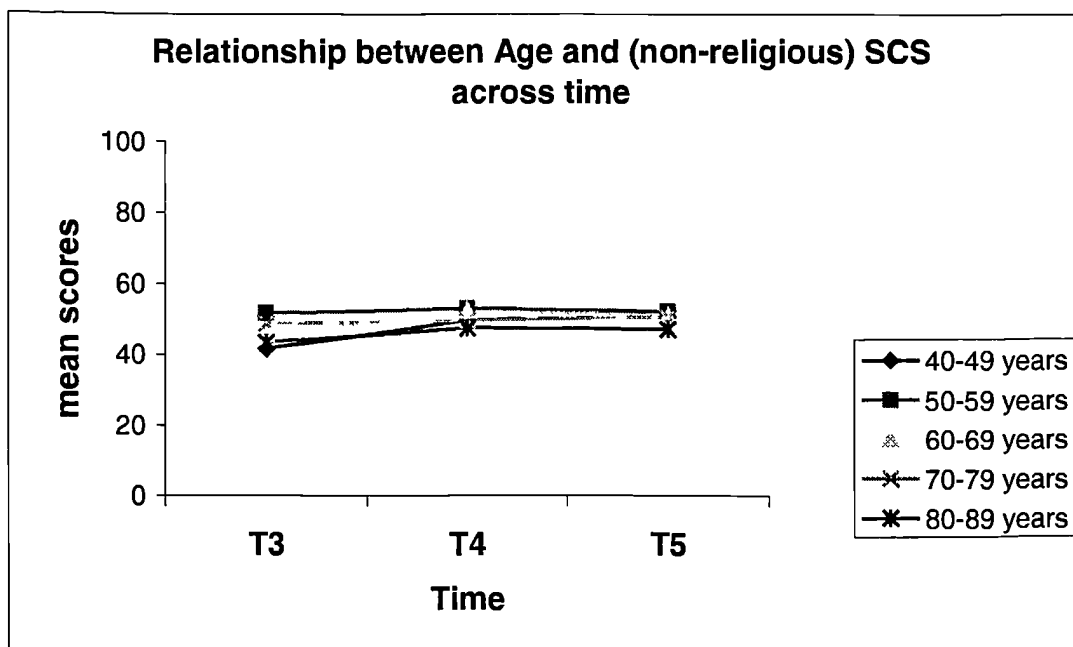
Figures 10.9.1. – 10.9.3. demonstrate no significant differences between age and combined SCS, RCS and NRCS across time. Similarly, Table 10.9 shows no significant differences in the three types of SCS between the age groups across time.

Figure 10.9.2. RM.ANOVA : Differences in mean scores of relationships between age groups and (religious) coping strategies across time.



R.M. ANOVA ($F = 1.047$, $p = 0.393$)

Figure 10.9.3. RM.ANOVA: Differences in mean scores of relationships between age groups and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 1.637$, $p = 0.181$)

Table 10. 9. One – way analysis of variance (ANOVA) : Comparison of Age with SCS derived from HSCS scale.

Type of SCS	Time	n	F	df	P
Combined	T3	53	1.33	52	0.268
	T4	52	2.33	51	0.070
	T5	51	1.46	50	0.229
Religious	T3	53	3.83	52	0.009
	T4	52	2.88	51	0.033
	T5	51	2.15	50	0.090
Non-religious	T3	53	2.51	52	0.054
	T4	52	1.63	51	0.182
	T5	51	1.14	50	0.349

Comparisons by one-way analysis of variance (ANOVA) were significant at $p \leq .01$, which meets the criteria of the Bonferroni correction ($0.05/5 = 0.01$) to decrease chances of type I error.

Group No : 1 = 40-49 years, 2 = 50-59 years, 3 = 60-69 years,
4 = 70-79 years, 5 = 80-89 years

DISCUSSION.

Table 10.9. demonstrates no significant differences between age and SCS across time.

Figures 10.9.1 –10.9.3. demonstrate lower scores in combined SCS, RCS and NRCS across time in the youngest (40-49 years) and oldest age groups (80 – 89 years). In contrast the older group (70-79 years) had the highest scores across time.

Moreover, the findings revealed that the youngest and the oldest groups had higher scores in anxiety, having the youngest scoring between ($M= 8.9 - 4.7$) whilst the oldest had mean scores between ($M= 8.7 - 2.7$). However, the depression scores were highest in the oldest group ($M=5.2 - 1.7$) as opposed to the 50-59 year old age group who had the lowest scores ($M=1.8 - 0.6$). Higher scores in the youngest may be due to the unexpected onset of the life

threatening illness of MI, who also may have the responsibilities of parenthood. Therefore, patients may be worried about their life expectations, such as work resumption, with consequent loss of status and financial difficulties. Alternatively, higher scores in the oldest may be due to lower social support and poorer health.

Moreover, the lower levels of SCS in the 70-79 year old age group suggest that they may have already developed other chronic illnesses, and hence they may have been less surprised with MI. Past illness experience may have yielded greater trust in medicine and acceptance of MI, with the hope of returning to normal life as they had succeeded in their previous illnesses. However, it is worth noting that all the groups had a constant decline of anxiety and depression across time. This may be due to the culture of Malta which provides support from family, friends, neighbours and church peer groups, together with personal use of SCS. It is noted that this rationale is based on speculations which can only be confirmed through further research which enables exploration of other concealed factors.

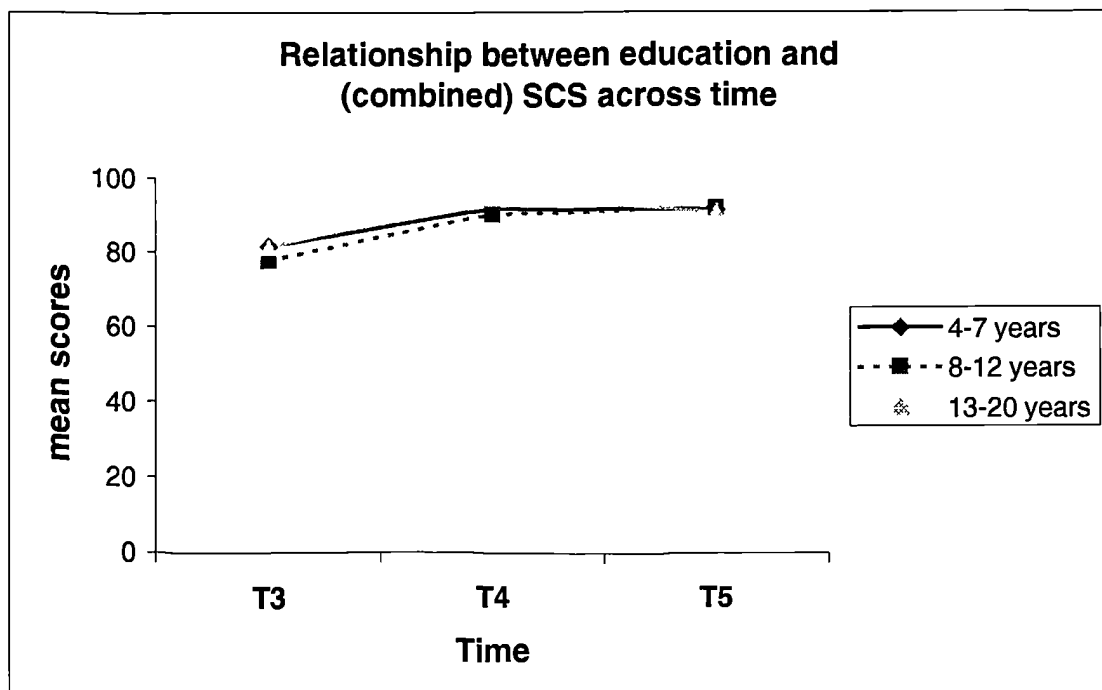
The lack of significant difference between age and SCS indicates that all the age groups used the SCS, including the RCS across time to cope with MI. Thus, it appears that, despite the positive relationship between age and SWB (Highfield 1992, Woods Smith 1995, Fernsler et al. 1990) and religiousness (Reed 1986, Koenig et al. 1998, 1992), these findings infer that the actual event of MI seems to have triggered the increase in SCS in all age groups, rather than the variable of age itself.

This is supported by Koenig et al. (1998) who found a positive relationship between poor health and SCS such as peer group support and RCS, such as Communion and religious forgiveness. This is supported by Reed (1986, 1987) who found significantly greater

religiousness in illness. This is supported by the findings whereby younger patients who started off with lower scores in SCS, including RCS during hospitalisation, had a linear increase across time. Similarly, the older patients who started off with high scores during hospitalisation sustained it across time (Appendix K.4., Figures K.4.3., K.4.4., pp. 581-582).

10. Differences in SCS within the subgroups of education across time.

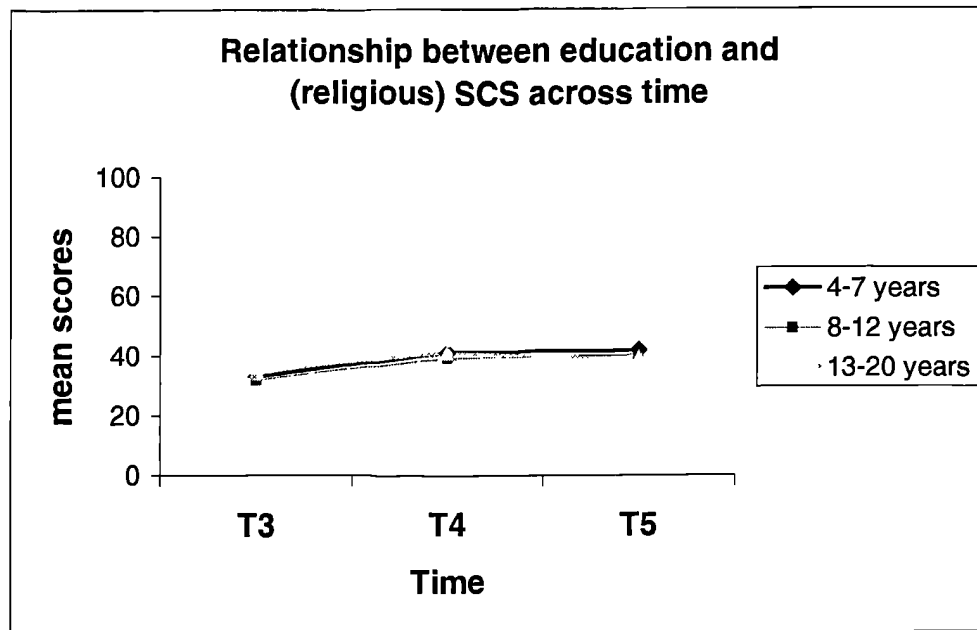
Figure 10.10.1. RM.ANOVA : Differences in mean scores of relationships between groups of education and (combined) SCS across time.



R.M. ANOVA ($F = 0.732$, $p = 0.486$)

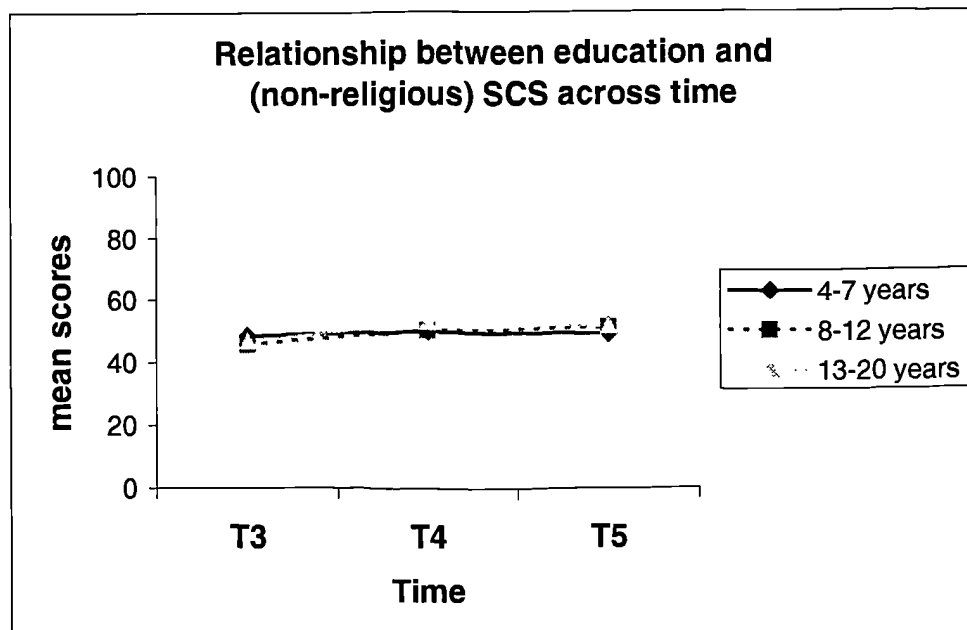
Figures 10.10.1. – 10.10.3 illustrate no significant differences between education and combined SCS , RCS and NRCS across time. Similarly, Table 10.10 revealed no significant differences between the education groups across time.

Figure 10.10.2. RM.ANOVA : Differences in mean scores of relationships between groups of **education** and (religious) coping strategies across time.



R.M. ANOVA ($F = 0.242$, $p = 0.786$)

Figure 10.10.3. RM.ANOVA : Differences in mean scores of relationships between groups of **education** and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 0.825$, $p = 0.444$)

Table 10.10. One – way analysis of Variance (ANOVA) : Comparison of **Education** with SCS derived from HSCS scale.

Type of SCS	Time	n	F	df	P
Combined	T3	53	0.184	52	0.832
	T4	52	0.111	51	0.896
	T5	51	0.026	50	0.975
Religious	T3	53	0.071	52	0.931
	T4	52	0.510	51	0.604
	T5	51	0.326	50	0.723
Non-religious	T3	53	0.597	52	0.554
	T4	52	0.476	51	0.624
	T5	51	1.210	50	0.309

Comparisons by one-way analysis of variance (ANOVA) were significant at $p \leq 0.017$, which meets the criteria of the Bonferroni correction ($0.05/3 = 0.017$) to decrease chances of type I error.

Group No : 1 = 4 – 7 years, 2 = 8 – 12 years, 3 = 13 – 20 years

DISCUSSION.

Table 10.10. exhibits no significant differences between education and combined SCS, RCS and NRCS across time. Figure 10.10.1 shows an increase in the mean scores of combined SCS during the first six weeks after discharge (T4) followed by a decrease by the third month after discharge (T5). This pattern suggests that on feeling better, the use of SCS may be reduced. However no significant differences were identified across time. This implies that the three groups used SCS, including RCS to cope with the demands of MI while in hospital and during the first three months after discharge.

The findings showed that on transfer to the medical ward, the patients with (4-7) years of education started off with the highest mean scores of anxiety (T2: M=8.0), whilst the mean scores of (8-12) years group was (T2: M=6.0) and that of the (13-20) years group had (T2: M= 5.7). A similar picture was found in the depression levels having the patients with (4-7) years of education with the highest mean score of depression (T2: M=4.1), whilst the mean score of (8-12) years group was (T2: M=3.5) and that of the (13-20) years group had (T2: M= 3.4). This may be due to uncertainties about their future and the lack of information received by the health care team which was a common complaint by the majority of patients interviewed.

Moreover, although the SWB scores were stable across time, the findings revealed that the patients with the lowest education levels (4-7 years) had the lowest mean scores of SWB across time ranging from (M = 109.1 – 113.5), whilst the mean scores of the (8-10 years) group ranged from (M= 109.8 – 115.3) and that of the (13-20 years) group ranged from (M = 114.1 – 115.6). Thus it appears that the higher the anxiety and depression levels, the lower the SWB as exhibited by the patients with low (4-7) years of education.

This is supported by Fehring et al.(1997) and Kaczorowski (1989) who found a negative relationship between SWB and anxiety and depression during oncology illness. Thus it is suggested that this study be extended further to identify possible relationships between SWB and anxiety and depression.

Furthermore, the increased level of anxiety and depression might have triggered increased use of SCS. This is exhibited by Figure 10.10.2. whereby patients with lowest education, that is the (4-7) years group, had the highest mean scores of RCS whilst the group with

highest education (13-20 years) scored higher in the NRCS almost across time. The lower use of RCS by the highly educated group hints that they might have felt more self-sufficient to cope with MI. However, the high scores in the NRCS, such as seeking more information and family support may have helped them to cope with MI and have the highest SWB levels.

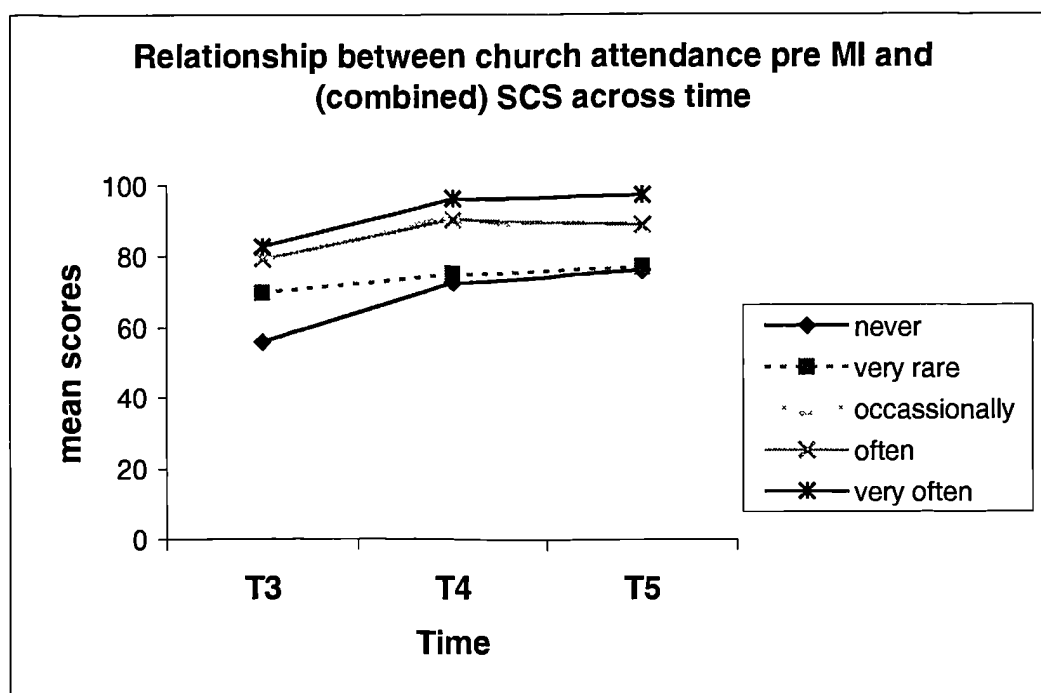
This is supported by Riley (1998) who found a positive significant relationship between existential well being (EWB) and education. It was reported that the EWB group used more humanistic mechanisms, such as social support to cope with illness. Since this study is only investigating SWB as a whole entity, it is recommended that this study be extended, using both factors of JAREL SWB scale, to identify possible relationships between SCS and EWB and religious well being (RWB).

The lack of difference between education and SCS is consistent with the findings of Koenig et al. (1988), who found no difference between education and religious coping in stressful situations in a sample of 100 well educated older adults. However, Reed (1986) found that the terminally ill group had significantly greater religiosity than the healthy group. It was reported that apart from the terminal illness, which might have triggered stronger faith in God, the higher education of the healthy group may have rendered lower religiosity. These contrasting findings may be due to research methodological issues. Whilst Koenig et al. (1988) collected data retrospectively, about how the older people coped in stressful moments, Reed et al. (1986) collected data prospectively, that is during the process of oncology illness. Additionally, both studies are limited in comparison across time as they both adopted cross-sectional designs.

The findings of this study suggest, that the event of MI itself may have contributed towards the differences in the variables studied across time and not merely the demographic variables. Therefore, further comparative longitudinal research is suggested to compare the impact of MI on spiritual coping, negative mood states and SWB and demographic variables by recruiting a healthy group and a group with non-life threatening illness, such as Diabetes Mellitus.

11. Differences in SCS within the subgroups of church attendance across time.

Figure 10.11.1. RM.ANOVA : Differences in mean scores of relationships between groups of church attendance and (combined) SCS across time.



R.M. ANOVA ($F = 0.422$, $p = 0.792$)

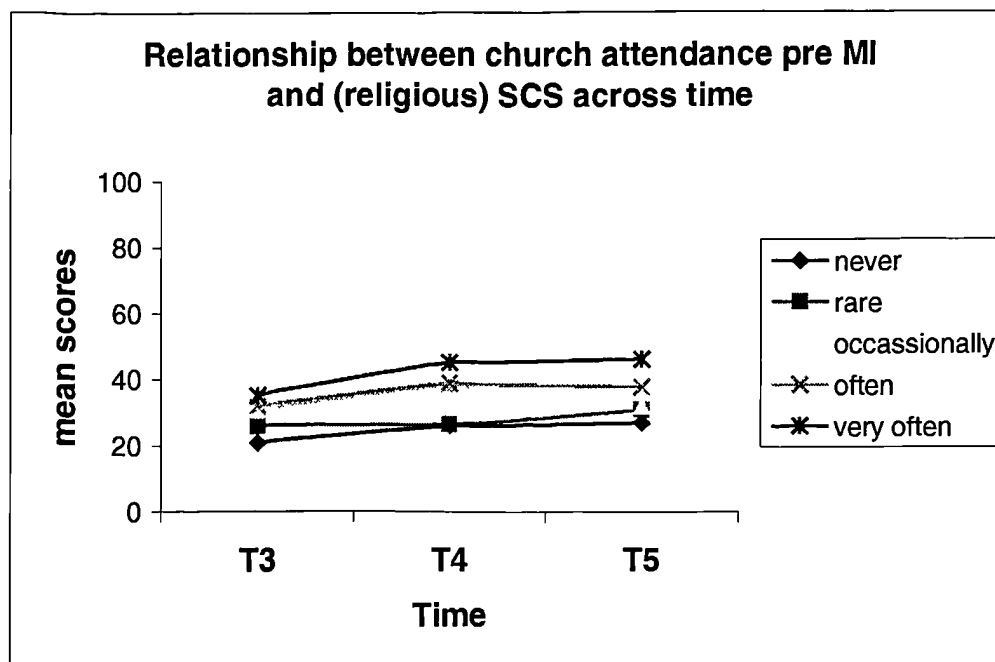
Figure 10.11.1. demonstrates no significant differences between church attendance prior to MI and combined SCS across time. However, Table 10.11 shows a significant difference during the first 6 weeks after discharge (T4) between group 1 *never* and group 4 *often* and group 5 *very often* church attendance. Similarly, a significant difference was

found between group 1 *never* and group 2 *very rare* and group 5 *very often* church attendance. Additionally, Table 10.11 exhibits another significant difference, between the sixth week and the third month after discharge (T5) between group 1 *never* and group 5 *very often* church attendance.

Figure 10.11.3. shows no significant difference between church attendance and RCS across time. However, Table 10.11 demonstrates a significant difference during hospitalisation (T3) between group 1 *never* and group 5 *very often* church attendance. In addition, a significant difference was found during the first six weeks after discharge (T4) between group 1 *never* and groups 4 *often* and group 5 *very often* church attendance. Furthermore, between the sixth week and third month after discharge (T5), a significant difference was found between group 1 *never* and group 5 *very often* church attendance.

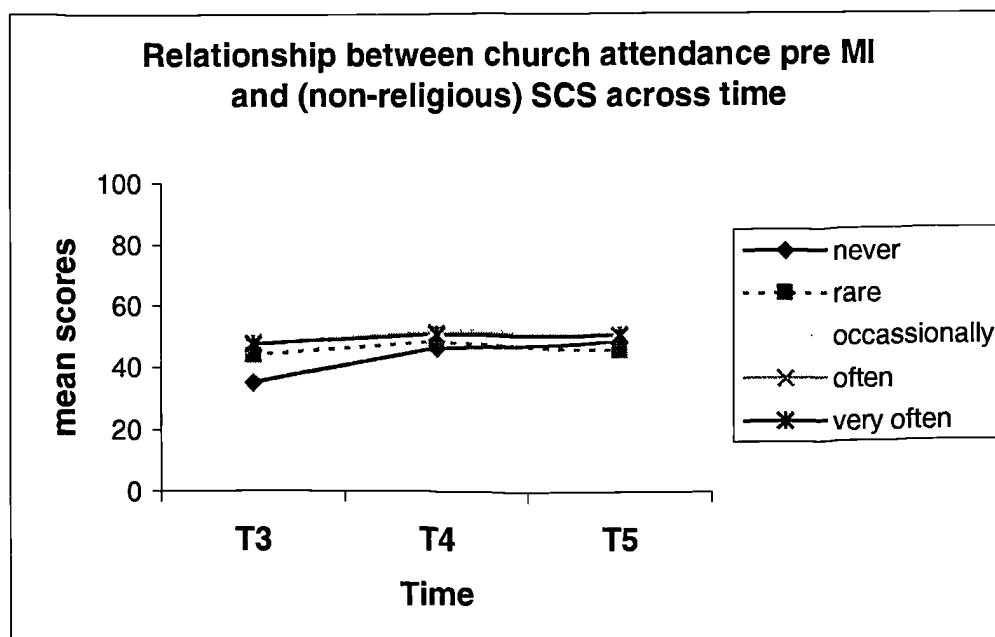
Figure 10.11.3. exhibits no significant differences between church attendance and NRCS across time. Similarly, Table 10.11 demonstrates no significant difference in the subgroups of church attendance across time.

Figure 10.11.2. RM.ANOVA : Differences in mean scores of relationships between groups of church attendance and (religious) coping strategies across time.



R.M. ANOVA ($F = 1.919$, $p = 0.123$)

Figure 10.11.3. RM.ANOVA : Differences in mean scores of relationships between groups of church attendance and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 0.297$, $p = 0.878$)

Table 10. 11. One – way analysis of Variance (ANOVA): Comparison of **Church Attendance** with SCS derived from HSCS scale.

ANOVA						Multiple comparisons by Bonferroni test		
Type of SCS	Time	n	F	df	P	sub group	Mean difference	P
Combined	T3	53	1.626	52	0.178			
	T4	52	9.287	51	0.000	1 – 4	-23.49*	0.002
						1 – 5	-29.24*	0.000
						2 - 5	-21.24*	0.005
	T5	51	6.196	50	0.000	1 - 5	-29.24*	0.000
Religious	T3	53	4.32	52	0.005	1 - 5	-16.49*	0.005
	T4	52	10.78	51	0.022	1 – 4	-18.96*	0.002
						1 - 5	-25.24*	0.000
	T5	51	8.59	50	0.000	1 - 5	-19.27*	0.008
Non-religious	T3	53	1.319	52	0.554			
	T4	52	0.616	51	0.624			
	T5	51	0.890	50	0.309			

Comparisons by one-way analysis of variance (ANOVA) were significant at $p \leq 0.01$, which meets the criteria of the Bonferroni correction ($0.05/5 = 0.01$) to decrease chances of type I error.

Group No : 1 = Never, 2 = Very rare, 3 = Occasionally, 4 = Often, 5 = Very often.

DISCUSSION.

Combined SCS. Table 10.11. displays significant differences between church attendance and combined SCS during the first six weeks (T4) and between the sixth and thirteenth week after discharge (T5) and RCS across time.

During the first six weeks after discharge (T4) the significant difference in combined SCS lies between the *never* group (M=73.0) and the *often* group (M= 90.8, F= 9.287, p=.002). Additionally, the *never* group (M= 73.0) scored significantly lower than the *very often* group (M=96.8, F= 9.287, p = 0.000). Also, the *very rare* group (M= 75.3) scored

significantly different from the *very often* group ($M= 96.6$, $F= 9.287$, $p=0.005$).

Additionally, during the sixth and thirteenth week after discharge (T5), another significant difference was found in combined SCS between the *never* group ($M= 76.5$) and the *very often* group ($M=97.7$, $F= 6.196$, $p=0.000$). Thus, it indicates that the more a person attends church for religious practices, the higher the scores of combined SCS to cope with MI, such as friends, family support, positive outlook to life and finding meaning and purpose in life.

Religious coping strategies : Table 10.11 demonstrates a significant difference during hospitalisation (T3) between the *never* group ($M= 21$) and the *very often* group ($M= 35.2$, $F= 4.32$, $p=.005$). In addition, a significant difference was found during the first six weeks after discharge (T4) between the *never* group ($M= 26.5$) and the *often* group ($M= 39.3$, $F= 10.78$, $p=0.002$). Also, a significant difference was found between the *never* group ($M=26.5$) and the *very often* group ($M= 45.6$, $F= 10.78$, $p=0.008$).

Furthermore, during the sixth and thirteenth week after discharge (T5), a significant difference was found between the *never* group ($M= 27.5$) and the *very often* group ($M= 46.8$, $F= 10.78$, $p= 0.008$). Therefore, it infers that the higher the church attendance for religious practices, the more likely a person is to have higher scores in religious coping, such as the use of prayer, relationship with God and Communion during the recovery period of MI.

Non-religious coping: Table 10.11 demonstrates no significant differences in the groups of church attendance and NRCS across time. It is noted that the *very often* group scored higher scores in SWB across time, ranging from ($M= 111.2 - 116.5$), whilst the *never* group scored less across time, ranging from ($89.5 - 104.1$). This inverse proportion in

scores lends support to the positive relationship between SWB and combined SCS, RCS, NRCS and SWB across time.

Furthermore, on discharge (T3) the *never* group had the highest anxiety level (M=9.0) as opposed to the *often* group (M= 6.6) and the *very often* group (M = 5.4) which had lower scores. Thus the high frequency to church before MI appears to contribute towards more SCS, which may be associated with lower anxiety scores. In contrast, the depression levels on discharge home (T3) were lowest in the *occasionally* group (M= 1.0) as opposed to the *never* group (M=2.0), *very rare* (M=2.0), *often* (M=2.1) and the *very often* group (M=2.3.).

On considering the nature of the sample, the *often* and the *very often* groups together consisted of a higher number of unskilled workers (n=37) than the skilled group (n=21). Although the unskilled group tended to have higher scores in combined SCS and RCS (Table 10.4), the unskilled group may have had more uncertainties about their condition, which may have contributed towards increased depression.

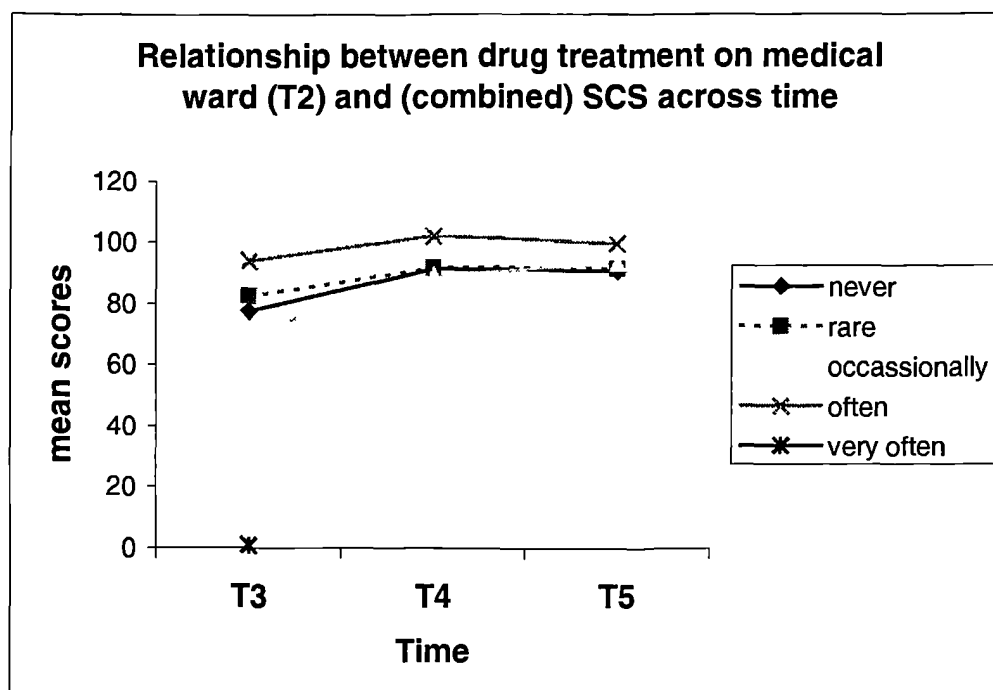
These significant differences between church attendance and SCS are comparable with the scarce research. Acklin et al. (1983), in a sample of 44 adults, a group with oncology disorders and a group with non-life threatening illness, it was found that the positive relationship between the coping mechanism of transcendent meaning and intrinsic religiosity was found significantly greater than with the extrinsic. Thus, whilst attending church for religious practices, it may offer socialisation with church peer groups.

Additionally, the group with cancer, who attended church 3.3. times a month, exhibited a positive relationship between meaning and intrinsic religiosity. In contrast, the relationship of meaning of the other group, who attended church 5.6 times a month, was with extrinsic

religiosity. According to Koenig et al. (1992), church relationships facilitate contacts with age-matched peers enhancing social support. Thus, church attendance before MI may have contributed to their stability in SWB by being visited in hospital and supported after discharge by church peer groups.

12. Differences in SCS within the subgroups of drug treatment which may influence mood states across time.

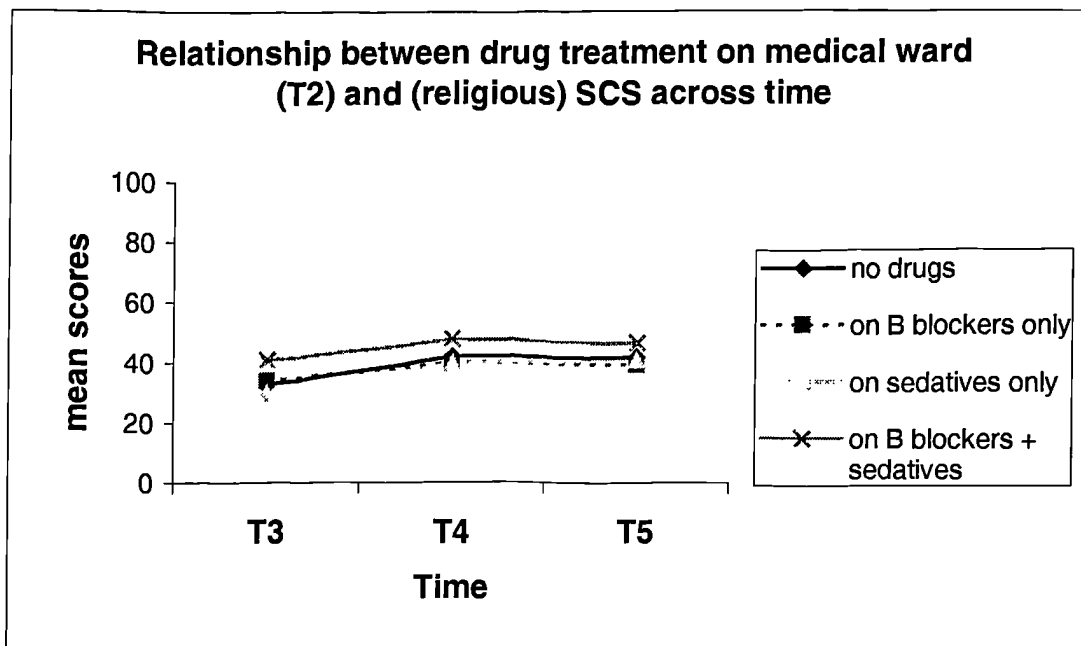
Figure 10.12.1. RM.ANOVA : Differences in mean scores of relationships between groups of drug treatment and (combined) SCS across time



R.M. ANOVA ($F = 0.415$, $p = 0.743$)

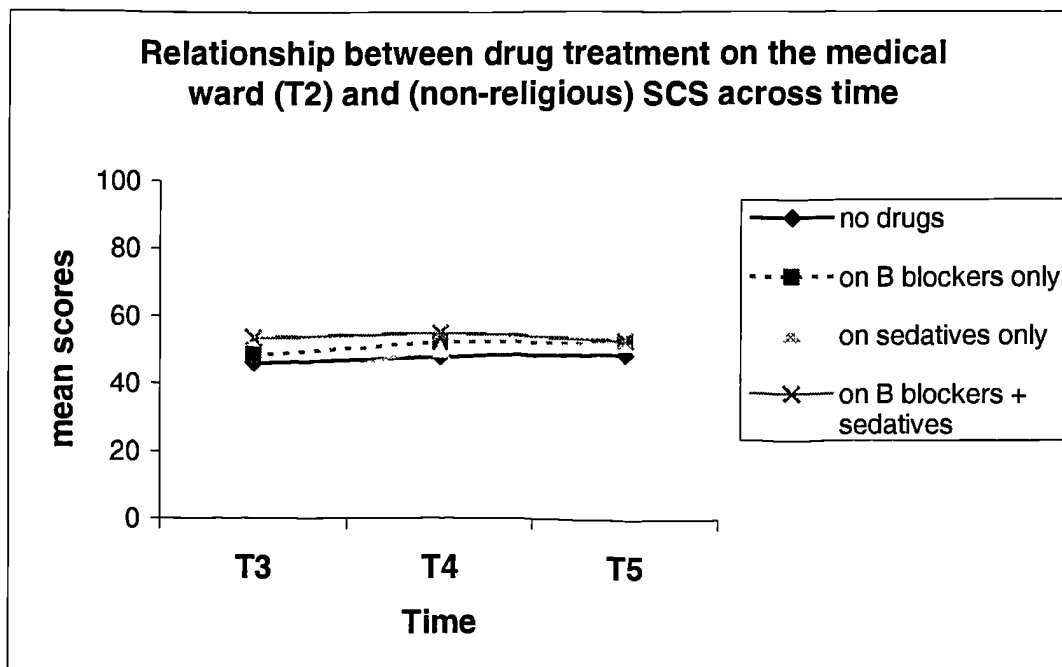
Figures 10.12.1. – 10.12.3 show no significant differences in drug treatment and **combined** SCS, RCS, NRCS across time. Similarly, Table 10.12 shows no differences in SCS between subgroups of drug treatment across time.

Figure 10.12.2. RM.ANOVA : Differences in mean scores of relationships between groups of **drug treatment** and (religious) coping strategies across time.



R.M. ANOVA ($F = 0.559$, $p = 0.645$)

Figure 10.12.3. RM.ANOVA : Differences in mean scores of relationships between groups of **drug treatment** and (non-religious) coping strategies across time.



R.M. ANOVA ($F = 0.086$, $p = 0.967$)

Table 10.12. Comparison of **Drug Treatment on transfer to the medical ward (T2)** with SCS across time derived from HSCS scale.

Type of SCS	Time	n	F	df	P
Combined	T3	53	2.488	52	0.069
	T4	52	0.944	51	0.427
	T5	51	0.539	50	0.658
Religious	T3	53	1.670	52	0.186
	T4	52	0.488	51	0.692
	T5	51	0.563	50	0.642
Non-religious	T3	53	1.615	52	0.198
	T4	52	1.276	51	0.293
	T5	51	2.108	50	0.112

Comparisons by one-way analysis of variance (ANOVA) were significant at $p \leq 0.008$, which meets the criteria of the Bonferroni correction ($0.05/4 = 0.0125$) to decrease chances of type I error.

Group No : 1 = No B Blockers / no sedatives / no antidepressants
 2 = On B Blockers only
 3 = On sedatives only
 4 = On antidepressants only
 5 = On B Blockers and sedatives
 6 = On B Blockers and antidepressants only

DISCUSSION.

Table 10.12. shows no significant differences between drug treatment and combined SCS, RCS and NRCS across time. This infers that the four groups used SCS similarly during their recovery period. Although not significant, Figures 10.12.1. – 10.12.3. show that Group 5 (on Beta blockers and sedatives) had the highest scores in the combined SCS, RCS and NRCS across time. However this group consisted of only three patients, which limits comparison of findings. Moreover, Group 2 (on B blockers only) tended to have higher mean scores than Group 1 (on no drug treatment).

Furthermore, on discharge home (T3), Group 3 (on sedatives only), tended to have the highest scores of anxiety across time ranging from (M=8.0-4.3), whereas the other three groups had similar mean scores. A similar picture was depicted in the depression scores, having Group 3 (on sedatives only) having the highest scores than the others. However, Group 3 had lower scores in SWB than the rest. However, it is noted that all the groups returned to normal levels of anxiety and depression by the third month after discharge home (T5).

No research was traced on the possible relationship between drug treatment and SCS. Thompson (1990) proposes that patients on Beta blockers are liable to have lower scores of anxiety. However, Rose et al. (1994) found similar anxiety levels in patients on Beta Blockers and on no Beta blockers treatment. Furthermore, Miller and Rosenfield (1974) found that minor tranquillisers and sedatives were associated with decreased levels of anxiety. Consequently, it is recommended that this research be extended to identify possible differences between drug treatment used on discharge (T3), on the sixth week (T4) and on the third month (T5) and SCS used subsequently.

13. Hypothesis Testing and Summary

This section tested the null hypothesis No 3:

- Ho** There will be no significant differences **across time** in SCS between the subgroups of the personal characteristics of gender, age, marital status, past history of ischaemic heart disease (IHD), history of angina, education, class/occupation, location of residence, living alone/with others, relationship with God, church attendance before MI and drug treatment which may influence mood states.

When the overall hypothesis is considered, the presence of scattered significant differences in the overall SCS, RCS and NRCS render this hypothesis to be **rejected**. However, for analysis purposes, this hypothesis is subdivided into the three types of SCS studied:

Hypothesis No 3.1.

- Ho** There will be no significant differences **across time** in combined SCS between the subgroups of the personal characteristics

Hypothesis No 3.2.

- Ho** There will be no significant differences **across time** in RCS between the subgroups of the personal characteristics

Hypothesis No 3.3.

- Ho** There will be no significant differences **across time** in NRCS between the subgroups of the personal characteristics

14. Summary of Findings

Table 10.13. Summary of significant relationships between combined SCS, RCS and NRCS and personal characteristics across time.

Item	Combined strategies (Time)	Religious Strategies (Time)	Non-Religious Strategies (Time)
Student t- t est			
Gender	- - -	T3 T4 -	- - -
Social class/occupation	- - -	- - -	- - -
Marital status	- - -	- - -	- - -
Location of residence	- - -	- - -	- - -
Past ischaemic heart disease	- T4 -	- T4 -	- - -
Past angina	- - -	- - -	- - -
Living alone/with others	- - -	- - -	- T4 -
Relationship with God	- - -	- - -	- - -
One-way Analysis of Variance (ANOVA)			
Age	- - -	- - -	- - -
Education	- - -	- - -	- - -
Drugs affecting mood states	- - -	- - -	- - -
Church attendance before MI	- T4 T5	T3 T4 T5	- - -

Table 10.13 demonstrates some significant differences in SCS between the subgroups of the personal characteristics as follows:

- **Gender** revealed a significant difference in the RCS during hospitalisation (T3) and the first six weeks after discharge (T4). It was found that the females tended to have higher scores of SCS across time.
- **Ischaemic heart disease (IHD)**, which demonstrated a significant difference in the combined SCS and RCS in the first six weeks after discharge (T4). The patients with past history of IHD tended to have higher scores.
- **Living alone/with others**, whereby a significant difference was found in the NRCS during the first six weeks after discharge (T4). It was found that patients living alone tended to use less non-religious coping.

- **Church attendance**, which exhibited significant differences in the combined SCS during the first six weeks (T4) and between the sixth and thirteenth week after discharge (T5). Additionally, significant differences were found in RCS across time. The differences lay between the frequent (*often* and *very often*) and the less frequent (*rarely* and *never*) church goers.

2.2. Hypothesis No 3.1.

Ho There will be no significant differences **across time** in the combined SCS between the subgroups of the personal characteristics.

This hypothesis is **accepted** for all the personal characteristics **except** the following:

- History of ischaemic heart disease: a significant difference was viewed in the first 6 weeks after discharge (T4).
- Church attendance before MI : two significant differences emerged during the first six weeks(T4) and at the third month after discharge.

Therefore, Hypothesis No 3.1. is **rejected** for history of IHD and church attendance before MI.

2.1. Hypothesis No 3.2.

Ho There will be no significant differences **across time** in RCS between the subgroups of the personal characteristics.

This hypothesis is **accepted** for all the personal characteristics except the following:

- Gender: two significant differences emerged during hospitalisation (T3) and the first six weeks after discharge (T4).
- History of ischaemic heart disease: a significant difference was identified in the first 6 weeks after discharge (T4).
- Church attendance before MI : significant differences were exhibited across time.

Consequently, Hypothesis No 3.2. is **rejected** for gender, history of IHD and church attendance before MI.

2.3. Hypothesis No 3.3.

Ho There will be no significant differences **across time** in NRCS between the subgroups of the personal characteristics

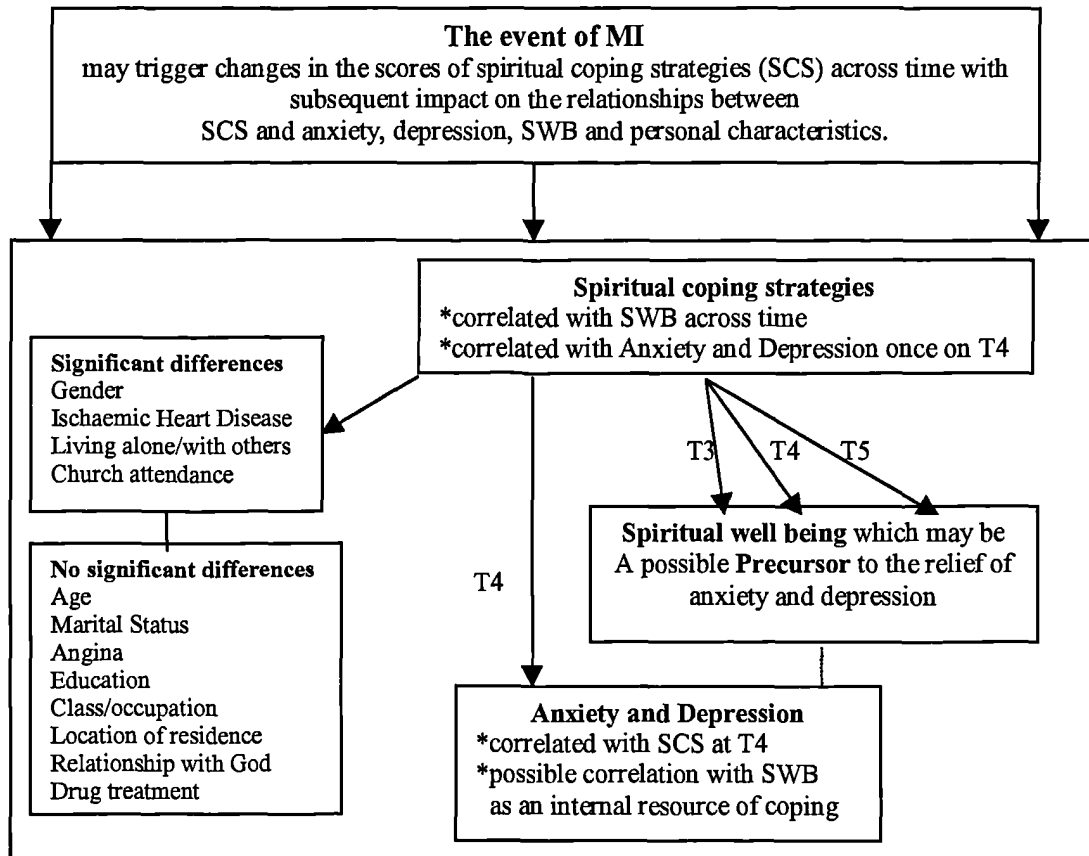
This hypothesis is **accepted** for all the personal characteristics except

- living alone/with others: a significant difference was identified at the sixth week after discharge (T4).

Hence, Hypothesis No 3.3. is **rejected** for only living alone/with others.

3. Overall relationships between spiritual coping strategies and the variables.

Figure 10.13. The possible impact of the event of MI on the overall relationships between SCS and anxiety, depression, spiritual well being and personal characteristics.



The **arrows** indicate relationships found between SCS and the variables under investigation.

The **dotted line** shows the possible correlation between SWB and anxiety and depression.

The **continuous line** joins the two sets of personal characteristics together.

The minimal differences identified in SCS, RCS and NRCS and between the subgroups of the personal characteristics studied suggest that the event of MI itself may trigger changes in SCS rather than the personal characteristics (Figure 10.13). Therefore, other factors may be responsible for the significant differences identified in personal characteristics, such as physical symptoms, uncertainties about their future life expectations, emotional reactions, dependency and life style modifications (Roebuck et al. 2001). Consequently, further comparative research is suggested between patients with MI and healthy groups and/or non-life threatening illness to identify possible differences in spiritual coping between the subgroups of personal characteristics and other factors and stressors originating from MI.

Figure 10.13 supports the process of appraisal and secondary appraisal proposed by Lazarus and Folkman (1984), whereby the onset of MI leads the individual to appraise it either positively as a challenging situation or negatively when considered as exceeding his/her resources of coping. This ongoing process makes the individual to keep on re-evaluating MI and modify the coping strategies accordingly. Thus, Leventhal et al. (1984) emphasise the impact of the ongoing feedback from the individual's perceived environment, leading to cognitive and behavioural changes in ways of coping. Hence, an ongoing process occurs during the appraisal and coping with MI in order to maintain an equilibrium between the perceived demands of MI and his/her coping with MI (Lazarus and Folkman 1984).

CONCLUSION

The study adopted a longitudinal descriptive correlational design and recruited a systematic sample of patients with first MI (n=70). The quantitative and qualitative data sought to answer the research question:

What is the relationship between use and helpfulness of spiritual coping strategies (SCS) and anxiety, depression, spiritual well being (SWB) and personal characteristics of Maltese patients with first MI, from transfer to the medical ward to the first three months after discharge?

This chapter incorporates the following three sections,

- A summary of the research findings,
- Strengths and limitations of the study,
- Recommendations.

1. Research Findings

1.1. Hypothesis No 1.

H1 There will be a negative relationship between SCS and anxiety and depression during hospitalisation (T3) and the first six weeks after discharge (T4).

The findings demonstrated negative significant relationships between combined SCS and non religious coping strategies (NRCS) and anxiety at the sixth week after discharge (T4). Similarly, a negative significant relationship emerged between NRCS and depression at the same time. Therefore Hypothesis No 1 is rejected. Although there is an indication of a negative relationship between SCS and anxiety and depression, but it is not proven on both times.

It was found that the levels of anxiety and depression declined consistently to normal limits by the third month. This is incongruent with the existing research which suggested that anxiety and depression may peak on discharge and on the sixth week after discharge (Thompson and Webster 1989, Thompson 1989,1982). The possible reasons identified were the Maltese culture which offers family, friends and neighbours support during illness, the small distances in the island where medical assistance may be summoned easily, the attrition of the patients who might have had higher scores and the researcher's visit in hospital and at home. It is argued that while my visits could have allayed their worries as I referred them to the respective aid, my presence could have also been a reminder of their bitter experience, rendering higher scores.

In contrast, the return to normal levels of anxiety and depression by the third month is parallel with research (Havik and Maeland 1990, Wiklund et al. 1984). Although the hypothesis was rejected, the fact that SCS increased across time, the qualitative data revealed the positive impact of SCS on the relief of anxiety and depression. Hence, it could be argued that the scores of SCS were not high enough to yield a negative significant result.

Additionally, the individual SCS score differences across time revealed that appraisal of MI may trigger higher scores of SCS. This was exhibited by those patients with low SCS scores in hospital, including RCS, who reported higher scores during the three months after discharge. This is congruent with research which suggests that patients may turn to their religiosity in illness (Reed 1986, Koenig et al. 1988). Otto (1950) explains that through the *numinous* experience, the individual realises his/her lack of self-insufficiency and transcends to God/Higher Power to cope with the demands of MI and increase his/her SWB.

1.2. Hypothesis No 2.

H1 There will be a positive relationship between SCS and SWB during hospitalisation (T3) and the first 6 weeks after discharge (T4).

On breaking down the SCS into combined SCS, RCS and NRCS, the hypothesis referring to combined SCS was accepted as constant positive correlations were identified between combined SCS and SWB across time. Similarly, the hypothesis oriented towards RCS was accepted as constant positive correlations occurred between RCS and SWB across time. In contrast, when considering the NRCS, the hypothesis was rejected as positive correlations were found between NRCS and SWB on the sixth week (T4) and on the third month (T5) after discharge without any correlation during hospitalisation (T3).

These findings converge with the scarce research whereby a positive correlation was found between SWB and religious coping (Mickley et al. 1992, Koenig et al. 1998, Riley et al. 1998) and non-religious coping like, peer groups, friends and family support (Rutledge and Rayman 2001, Landis 1996).

Furthermore, it was found that SWB increased after discharge and remained stable across time. This indicates that SWB may be considered as an internal resource of coping (Thomson 2000, Riley 1998, Landis 1996, Hungelmann et al. 1985). This is substantiated by both theories of Lazarus and Folkman (1984) and Otto (1950) who explain that in times of distress, positive emotions may result when the individual finds equilibrium between demands of illness and coping. Thus, the findings suggest that SWB may be related with anxiety and depression, which needs to be confirmed by further research.

1.3. Hypothesis No. 3.

Ho There will be no significant differences across time in SCS between the subgroups of the personal characteristics.

On breaking down the hypothesis into the respective types of SCS, when considering the combined SCS, the hypothesis was accepted for all the personal characteristics except for ischaemic heart disease (IHD) and church attendance. When the hypothesis tested the RCS, the hypothesis was accepted for all the personal characteristics except for gender, IHD and church attendance. Additionally, the hypothesis on NRCS, was accepted for all the personal characteristics except for living alone/with others. This is because of the significant differences present at some point in time.

These minimal differences in four characteristics and absence of differences in eight characteristics are parallel with the conflicting findings in the scarce existing findings. Reed (1986) and Koenig et al. (1988) and Fernsler et al. (1999) found that females tended to be more religious than males. Fehring et al. (1997) was the only research traced on IHD, whereby a negative relationship was found between SWB and depression in patients with IHD. Additionally, Acklin et al. (1983) found a positive relationship between church attendance and intrinsic religiosity in patients with oncology disorders. However, the significant difference found in patients living alone who tended to have higher scores of RCS is inconsistent with the findings of Riley (1998) who found no significant differences between SWB and living alone/with others. This inconsistency may be due to the very small number of patients living alone in this sample which limits generalisation of results.

The increase of SCS across time and the absence of differences in SCS between the subgroups of the majority of personal characteristics suggest that, irrespective of the nature of the group, the increase in scores of SCS may have been triggered by the event of MI

itself in response to the high levels of anxiety and depression as found by Wiklund et al. (1984) in Swedish male patients with first MI. According to Lazarus and Folkman (1984) and Otto (1950), individuals attempt to search for spiritual resources to cope with the stressful situation.

Finally, the findings revealed a stronger relationship between SCS and SWB than with anxiety and depression. It was found that combined SCS and RCS were positively correlated with SWB across time with NRCS correlating after discharge. In contrast, combined SCS and NRCS correlated negatively with anxiety and depression only on the sixth week after discharge. However, a consistent decline in anxiety and depression was identified across time. This infers that SWB may be a precursor to the relief of anxiety and depression. However, this assumption needs to be confirmed by further analysis of data gathered from the same sample.

STRENGTHS AND LIMITATIONS OF THE STUDY

This section addresses the factors which may have enhanced or hindered the rigour of the study along the continuum of the research process. The strengths and weaknesses of the study are outlined in the following three subsections:

- Pre planning phase
- The research process phase
- Follow-up phase

1. Pre planning phase

Professional consultation with two nurse researchers before commencing the study shed light on the research design (Diekmann and Smith 1989). Hence, the quantitative data were supported by the two semi-structured interviews which discovered the rationale for the perceived helpfulness of SCS. This helped in identifying the direction of the relationships between SCS and the variables studied, planned in the Analytic Model (Figure 6.2.).

2. The Research process phase

2.1. Triangulation

The study utilized theoretical and methodological triangulation. The use of both theories of Lazarus and Folkman (1984) and Otto (1950) complemented each other by providing rationale on both RCS and NRCS. Both theories were beneficial in the design of the new HSCS scale and interview schedules. Also, they allowed a more accurate interpretation of data following the initial analysis (Cowman 1993). Methodological triangulation, by the use of both quantitative and qualitative methods, enhanced comprehension of the coping mechanisms of a religious sample and generated further research questions (Smith 1989).

2.2. Sample recruitment

The detailed inclusion and exclusion criteria produced a homogenous sample which minimised the number of outliers which may skew the data (Bryman and Cramer 1999). Additionally, the use of a systematic sampling technique, as a random sample (Polit and Hungler 1999), gave the opportunity to every patient admitted with first MI, to have an equal chance to be recruited in the study. This increased the liability for generalisation of findings to the whole population.

2.3. Instruments

The new HSCS scale, underwent a series of test-retests on nursing students. The findings demonstrated its reliability and validity. However, the new tool needs further testing on patients in order to classify further the contents of the factor. Hence, I consider testing of the tools on nursing students as a limitation.

The new HSCS scale encompasses two factors, that is, religious and non-religious coping. Thus, it addresses spiritual coping of both the believers and the non-believers. However, since 95% of the Maltese population (Gouder 2000) is Roman Catholic, all patients were Roman Catholics. Therefore, comparison between the believers and non-believers was impossible. The sample appeared to be a religious group. However, it is argued that no background data were collected to differentiate between patients' religiosity regarding ritual participation and an integrated system of belief (Abela 1991) or intrinsic and extrinsic religiosity (Allport and Ross 1967). Thus, I consider this as a limitation which may have biased the significant differences identified between the subgroups of church attendance.

The use of expert panels for content validity of the new instruments guided me to formulate reliable and valid tools. Therefore, this process contributed towards the trustworthiness of the study (Koch 1994).

Moreover, the meticulous translation of the instruments by the use of the expert panel of linguistics contributed towards the internal consistency of the tools. Additionally, the questionnaires in Maltese helped in overcoming the problem of illiteracy in English, rendering the sample to be more representative of the target population. Additionally, it enhanced comprehension of the content of the tools (Baldacchino et al. 2002).

Similarly, the interviews were conducted in Maltese which promoted better researcher-patient communication and expression of patients' experiences. The two transcripts of each patient were translated by a five-member panel. To check the accuracy of the translation, I requested the help of two members of the expert panel of linguistics who confirmed the authenticity of the original content of a random sample from each translator. This process contributed towards the credibility of qualitative data.

2.4. Data collection and analysis

The incorporation of the qualitative data enriched the quantitative data (Oppenheim 1998). However, while anxiety, depression and SWB were assessed prospectively, the qualitative data and SCS were collected retrospectively. Although the patients were screened by the Mental Test Score, through experience I could say that the accuracy of past experiences may be limited. Nevertheless, it appeared that the use and helpfulness of the SCS and their rationale for SCS were recalled clearly.

Since, the qualitative data were intended to identify the rationale for SCS, included in the HSCS scale, a semi-structured interview schedule was designed. This schedule was not meant to be a straight jacket in practice. Therefore, since the interview was audio taped, I did not ask the questions in the order of the schedule but according to the development of the conversation. The set of probes common to every SCS, facilitated flexibility in the interviewing technique which contributed towards the free surfacing of the rationale from each patient. This technique was achieved following the exercise I had during the pilot study which, apart from testing the feasibility of the interview schedule, it sharpened my interviewing skills. Additionally, the pilot study of the translated drafts of the tools on a group of twenty nursing students, prior to reliability test-retest, contributed towards the reliability of the tools.

Similarly, the use of audio tapes during the interviews yielded an identical replication of the contents of each interview (Barriball and While 1994). Additionally, the patients' review of the faithful descriptions of the interview transcripts provided me with 'sufficient exactitude' for data analysis (Glaser and Strauss 1966, p.60). However, the rigour of the study would have been maximised had I gone back to patients to confirm the analysed data. Thus, I acknowledge this limitation. This limitation was balanced by having two other nurses, familiar with the spiritual dimension in holistic care, who analysed the data concurrently with me. Therefore, the individual's subjectivity about the data, which might have biased the analysis, was overcome. Additionally, the fact that the three analysts were Maltese, having the same culture and religious affiliation, aided interpretation of the transcripts. Therefore, the inter-rater data analysis enhanced the reliability of the study (Burnard 1991).

2.5. Ethical considerations

While considering the advantages of a longitudinal study, supported by qualitative data, both methods threatened anonymity. However, confidentiality of findings was assured as described in Chapter 3. Since I was not involved in the patients' care, patients' autonomy to participate or withdraw from the study was enhanced. Privacy during the interviews was given a high priority both in hospital and at home. During home visits, the hospitality in the Maltese culture requested me to be assertive enough to request privacy during data collection. Thus, the discussion was able to unfold unreservedly, supported by trustful researcher-patient relationship.

2.6. Researcher bias

Furthermore, being who I am with the various roles I hold, I did my utmost to reflect *in* and *on* the research process to minimise bias as much as I could. The fact that I was the only data collector, part of which was conducted in the hot summer, I made it a point to allow enough time to rest. Fortunately, there was a time between end of August and beginning of September that I could not recruit new patients. The reason was because of low admission rate of patients with first MI and the ones admitted did not fulfil the criteria. Although I was frustrated at the time, it helped me slow down from the speed of the data collection and considered that time as a moment of revival and reflection. This helped me go back to the interviews with a fresh mind to ask the same questions.

3.7. Research gaps

On weighing the strengths of the study against the limitations, I believe that the strengths of the study far outweigh the limitations. I profess humbly that the research study produced new knowledge which may be applied to the clinical field so as to facilitate fulfilment of patients' needs. Additionally, the new knowledge contributes towards filling the research gaps identified in the introductory chapter.

Firstly, the new knowledge about the overall SCS in illness provided evidence about a religious group. It was found that patients may turn to their religiosity to cope with the demands of illness.

Secondly, the longitudinal study captured fluctuations in the variables under investigation across time. Thus, the findings contribute new knowledge to the dearth of research which is mainly cross-sectional in design.

Thirdly, quantitative data identified the correlations between SCS and the variables studied. These findings add new knowledge to the absence of this kind of relationships in research. Additionally, the qualitative findings managed to shed light on the possible impact of the Maltese culture on anxiety, depression and SWB by family support and spiritual assistance in the recovery from MI.

Fourthly, although the HSCS scale is oriented towards the overall spiritual coping, research gap No. 4 was partially filled because all patients were affiliated with Roman

Catholic religion. Thus, no new knowledge was produced about spiritual coping of the non-believers.

Finally, the age of patients ranged between 40 years and 89 years. Hence, new knowledge about the oldest patients is added to the existing research.

3. Follow-up phase

The new knowledge produced by the study demands dissemination of findings in order to facilitate application of findings in the clinical practice. Therefore, I plan to publish these findings in the teaching module on spiritual coping in illness which I plan to introduce in the nursing education programme. Additionally, I intend to publish the findings in the local and international nursing conferences and journals of various disciplines, such as nursing, psychology and theology.

RECOMMENDATIONS

The study was the first of its kind, both in Malta and in research. Therefore, the new findings add new knowledge with the ultimate aim to integrate the pure knowledge with the applied in nursing practice (Cash 2000). Consequently, recommendations are made to the clinical practice, nursing education, hospital management and further research to bridge the theory practice gap (Quinn 1996) with the aim of promoting holistic care.

1. Nursing practice

The findings suggested a negative relationship between SCS and anxiety and depression. Additionally, a positive relationship between SCS and SWB was identified. The decline in scores of anxiety and depression during the first three months after discharge, indicated that SCS may contribute towards restoration of health.

Thus, the Maltese nurses are recommended to assess patients' level of anxiety, depression, SWB and SCS in order to enable the patients to meet their spiritual needs. To facilitate such an assessment, the translated versions of the Hospital Anxiety and Depression (HAD) scale (Zigmond and Snaith 1983), JAREL SWB scale (Hungelmann et al. 1985) and Helpfulness of spiritual coping strategies (HSCS) may be used. Additionally, the nurses are to facilitate the use of SCS to enable the patients to find meaning and purpose in life.

2. Nursing Education

The mission of nurse education at the University of Malta is to achieve excellence in the education health professionals (Buttigieg 2001). Excellence in education is achieved by amalgamating the art and science of nursing through evidenced-based theory and practice

(Whelton 2000, Walsh 2000). When I introduced verbally the essence of the aims and objectives of the study to the sample, I told them that their information would be used in the education of nurses to enhance holistic care. This outcome was greeted by patients as they felt that their participation may be beneficial to patient care.

2.1. The qualitative data suggested that no matter which category of personal characteristics patients held, they expressed their concern about the lack of information received from the nurses and health care team. This may increase their anxiety and depression levels suggesting the need for a complete assessment of the patients holistic needs. Therefore, it is recommended that the Nursing Education in Malta emphasises the importance of assessing the educational needs of each individual patient in the pre-registration and post-registration courses. The nurses are to learn how to tailor education according to the patients' needs. Proper education may enhance patients' coping with the demands of illness and prevent recurrence of MI.

2.2. SCS and SWB are new concepts in nursing care. Hence, it is recommended that a module on spiritual coping in illness be introduced in the basic and post-registration education to facilitate nurses' assessment of patients' spiritual needs and help them achieve SWB in life. According to Hoover (2002) this module may serve 'as an important means of developing both themselves and their caring practices' (p.79). Such a module is also suggested as a core module to be undertaken by the students and qualified staff of the various disciplines such as physiotherapy, radiography and medicine.

3. Hospital Management

3.1. Presently, patients with MI in the local general hospital are provided by minimal rehabilitation prior to discharge home. An occupational therapist visits the patient once and explains to them the rehabilitation leaflet. Hence, it is recommended that the hospital management and the multidisciplinary team commence a formal rehabilitation programme, including counselling and regular follow-up sessions after discharge. This programme may be coordinated by a coronary nurse specialist (Thompson and Bowman 1997, Thompson 1990), aiming at maximising 'client choice to enhance independent living in the client's future environment' (Long et al. 2002, p.70).

3.2. During construction of the new hospital in Malta, the hospital management is to introduce a step-down ward, incorporating a counselling room for privacy and a teaching room for group support. Additionally, a multifaith prayer room is to be incorporated in each floor to be within patients' reach. This will enable the patients to segregate themselves for self-reflection and self-transcendence, when they so wish, according to one's religious faith.

3.3 The qualitative findings confirmed that the daily fixed three-hour visiting time may provide the patient with family and friends' support. Thus, it is recommended that the daily fixed visiting times be made more flexible during the day. This will allow the patient to have more time to allay his/her worries.

3.4. During hospitalisation, patients rated Communion as the first most helpful coping strategy. The qualitative data showed that the time of Communion helped the patients to feel closer to God. However, it was stated that Communion is distributed routinely 'in a

rush'. Thus, re-organisation of the distribution of Communion is to be done to enhance its effect as a resource of coping. Hence, it is recommended that the current time of distribution be extended during the day. To enable this change, lay Eucharistic ministers may help the hospital chaplains in the distribution followed by supporting patients by private or group prayers.

4. Extension of this research study

During the continuum of the research process, before focusing down sharply within the limits of the thesis, other information was collected from the sample of patients recruited for the study. Thus, the study needs to be extended to allow analysis of this precious information and to continue data collection.

4.1. Although not significant, it is worth noting that a weak positive correlation between SCS and anxiety was identified on the third month after discharge (T5). Concurrently, a weak positive correlation was discovered between RCS and depression. Hence, it seems that on the third month after discharge (T5), when the levels of anxiety and depression scores return to normal range, patients may reduce the amount of SCS, yielding a positive relationship. This implies that the less the anxiety and depression scores, the less spiritual coping strategies. Therefore, it is recommended that data collection will be collected two years after discharge to identify possible relationships between SCS and anxiety and depression.

4.2. Factor analysis discovered that JAREL SWB scale (Hungelmann et al. 1985) consisted of two factors, that is, existential and religious well being. However, due to word limit, the thesis focused only on the total scores of SWB. Hence, further data analysis is suggested to explore the possible relationships between SCS and the two factors.

4.3. It was found that while SWB remained stable across time, the scores of anxiety and depression decreased, falling within the normal range by the third month. Apparently, SWB may be a precursor to the relief of negative mood states. In addition, SWB seems to be inversely related to anxiety and depression. Consequently, further data analysis is suggested to identify statistical relationships between SWB and anxiety and depression.

4.4. The qualitative research exposed the poor communication between the patient and nurses and health care team regarding health information to patients. Hence, further data analysis is recommended to discover patients' perceptions about the role of the nurse and the multidisciplinary team in helping patients to find meaning and purpose in life.

4.5. The findings revealed no differences in SCS across time between subgroups of drug treatment on transfer to the medical ward (T2) which may influence mood states. Consequently, it is recommended that data will be further analysed against drug treatment used on discharge (T3), on the sixth week (T4) and on the third month (T5) after discharge.

4.6. Reliability testing and factor analysis of the translated tools and the new HSCS scale were estimated on the nursing students' data. Thus, it is recommended that factor analysis will be computed on the patients' data for further refinement of the instruments.

5. Further research

5.1. The qualitative data hinted that patients' transfer to the medical ward was a good sign of recovery, since they were mid-way to discharge. Hence replication of the study is recommended to include data collection in CCU, extended to the first two years after discharge. This will enable further comparison with the existing research on anxiety and depression, when the support from friends and family tends to lessen.

5.2. Most of the findings were incongruent with the scarce research on MI and other illness, such as oncology. The qualitative data revealed the impact of Maltese culture which may offer increased family support and high religious orientation in coping. Therefore, replication of the study is suggested, adopting comparative research design, by recruiting reference groups, such as healthy persons from community and patients with chronic diseases, such as Diabetes Mellitus and renal failure.

5.3. The findings about the individual differences in scores across time, revealed that patients who started off on high scores in SCS during hospitalisation (T3), maintained them high across time. In contrast, those with extreme low scores during hospitalisation (T3) increased them during the first six weeks and retained them high by the third month after discharge (T5). Hence, it appears that the SCS, including the RCS were perceived as beneficial in coping with MI. This implies that patients may turn to their religiosity in times of illness. Therefore, further quasi-experimental research is suggested on each of the strategies included in the HSCS scale, such as, prayer and positive life orientation, to investigate their influence on the patients' SWB, anxiety, depression and adaptation following MI.

5.4. The qualitative data revealed the beneficial impact of sharing experiences with other patients with MI. In Malta, there are some active support groups, such as Mastectomy, Multiple Sclerosis and Diabetes groups. Thus, exploratory research is suggested on Maltese patients to reveal patients' perceptions about the possible impact of support groups on the recovery of chronic disorders. This may lead to the initiative of helping the patients to found a support group for patients with MI.

5.5. The findings suggested that Maltese culture, such as family support, could have played an important role in the stability of SWB and the decline of anxiety and depression. Thus, further exploratory research is suggested to explore the experiences of patients and their spouses during the recovery phase following MI.

5.6. Minimal significant differences were found in SCS between subgroups of personal characteristics. This lack of difference and the stability in SWB across time propose that the common denominator which triggered the use of SCS may be the event of MI itself. Hence, phenomenological study is suggested to explore the lived experience of patients with MI to shed light on the stability of SWB, considered by literature as an internal resource of coping.

5.7. Significant differences were found in SCS between the *often / very often* and *rarely / occasionally* subgroups of church attendance. It infers that patients who attended church for religious practices before MI were more likely to obtain higher scores in RCS. However, literature suggests that church attendance may be associated with intrinsic and / or extrinsic religiosity (Allport and Ross 1967) and ritual participation or integrated system

of belief (Abela 1991). Thus, further research is suggested to identify possible relationships between the different types of religiosity and the variables studied.

5.8. The recruitment of patients who were all Roman Catholic limited comparison between believers and non-believers. Thus, further comparative research is suggested between patients with MI from Malta and other foreign countries, where secularisation is dominant, such as the United Kingdom.

5.9. In contrast, the Census of 1995 reported a higher percentage for Sunday Mass in Gozo (83.45%) than in Malta (61.74 %) (DISCERN 1998). Therefore, it appears that the population in Gozo appears to be more religious than the Maltese. Hence, further comparative research is suggested to identify possible differences between Malta and Gozo in SCS and its relationships with anxiety and depression.

5.10. The consistent decline found in anxiety and depression across time is incongruent with the published research. Although several speculations were made regarding the possible influencing factors, further exploratory research is suggested to identify reasons for the decline of anxiety and depression as opposed to the stability of SWB across time.

Finally, on reflection, I can say that throughout the four years of the study, I orchestrated the research process by taking every precaution possible to enhance the rigour of the study. I took these precautions mostly under the supervision of my supervisors. Now I can say that my confidence in research increased and I feel capable to continue with my scientific pace independently along the research process continuum. This will enable me to strengthen my

research skills and continue to contribute new knowledge for the benefit of patient's health
Cash (2000). '

REFERENCES

- Abela A.M. (1991) *Transmitting values in European Malta. A study of the contemporary values of modern society*. Jesuit Publications, Malta
- Abioudun O.A. (1994) A validity study of the Hospital Anxiety and Depression scale in General Hospital Units and a community sample in Nigeria. *British Journal of Psychiatry* 165, 669-672.
- Acklin M.W., Brown E.C. & Mauger P.A. (1983) The role of Religious values in coping with cancer. *Journal of Religion and Health* Winter 22 (4) 322-333.
- Agarwal M., Dalal A.K., Agarwal D.K. & Agarwal R.K. (1994) Positive life orientation and recovery from MI. *Social Science and Medicine* 40 (1) 125 - 130.
- Aitken R.C.B. (1969) Section of Measurement in Medicine. *Proceedings of the Royal Society of Medicine* October, 62, 989 - 993.
- Alexander C. (1997) From reflection to reality. *Nursing Standard* 11 (41) 32-34.
- Allport G.W. & Ross J.M. (1967) Personal religious orientation and prejudice. *Journal of Personality and Social Psychology* 5 (4) 432 - 443.
- Andrews M., Lyne P. and Anderson E. (1996) Validity in qualitative health care research : an exploration of the impact of individual researcher perspectives within collaborative enquiry. *Journal of Advanced Nursing* 23, 441 - 447.
- Aquilina J.(1985) *Papers in Maltese Linguistics*. University Press, Malta.
- Averill J.R. (1973) Personal control over aversive stimuli and its relationship to stress. *Psychological Bulletin* 80 (4) 286 - 303.
- Avis M. (1995) Valid arguments? A consideration of the concept of validity in establishing the credibility of research findings. *Journal of Advanced Nursing* 22, 1203 - 1209.
- Aylard P.R., Gooding J.H., McKenna P.J. & Snaith R.P. (1986) A validation study of three anxiety and depression self - assessment scale. *Journal of Psychosomatic Research* 31 (2) 261 - 268.
- Baker C.A. (1989) Recovery : A phenomena extending beyond discharge. *Scholarly Inquiry for Nursing Practice : An International Journal* 3 (3) 181 - 194.
- Baldacchino D., Bowman G. and Buhagiar A. (2002) Reliability testing of the Hospital Anxiety and Depression (HAD) scale in the English, Maltese and back-translation versions. *Journal of International Nursing Studies* 39, 207 - 214

- Baldacchino D. (2001c) Fear of death : Perceptions of patients with myocardial infarction on the role of the nurse in the delivery of spiritual care. In *Proceedings of the Bio-Ethics annual conference*. October. Government Press, Malta. pp. 77-91.
- Baldacchino D. (2001b) The use of spiritual coping strategies in the recovery period of Maltese patients with first acute MI. In *Proceedings of the 2nd European Doctoral conference in nursing science*. October. University of Press, Maastricht (Abstract p. 26)
- Baldacchino D. and Draper P. (2001) Spiritual coping strategies: A review of the nursing research literature. *Journal of Advanced Nursing* 34 (6) 833 – 841.
- Baldacchino D. (2001a) Spiritual well being, a hidden phenomenon : A pilot study. In *Proceedings of the International Council of Nursing quadrennial conference, Nursing: A new era for action*, June, Copenhagen, Denmark. ICN Publications, Geneva. (Abstract p. 85)
- Baldacchino D. (2000b) The role of the nurse in the delivery of spiritual care : a pilot study. In *Proceedings of the International Nursing Conference: The Nursing and quality of life*. September, University Press, Krakov. pp. 192-195.
- Baldacchino D. (2000a) The process of translating research tools into the Maltese language. In *Proceedings of the Workgroup European Nurse Researchers (WENR), Challenges for nurses in the 21st century: Health promotion, prevention and intervention*. May, Reykjavik, Iceland. WENR Publications, Switzerland. p.p.28-29
- Baldacchino D. (1999) The role of the nurse in the spiritual well being of patients during hospitalization : A literature review. In *Proceedings of the International Council of Nursing centennial conference: Celebrating nursing past....claiming the future*. June, London. I.C.N. Publications, Geneva. p. 323.
- Baldacchino G. (1999a) Class Counts – Part I. *The Malta Independent* . Sunday 14 February. p. 17
- Baldacchino G. (1999b) Class Counts – A gender twist. *The Malta Independent* . Sunday 28 February. p.13.
- Baldacchino G. (1999c) Class Counts – Women, wives, working lives. *The Malta Independent* . Sunday 14 March. p.13
- Bandura A. (1997) *Self-Efficacy. The exercise of control*. WH. Freeman and Company, New York.
- Barnard K.E., Magyary D.L., Booth C.L. & Eyres S.J. (1987) Longitudinal designs: Considerations and applications to nursing research In Cahoon M.C.(editor) *Recent Advances in Nursing. Research Methodology*. Churchill Livingstone, Singapore.
- Barriball K.L. and While A. (1994) Collecting data using a semi - structured interview : A discussion paper. *Journal of Advanced Nursing* 19, 328 - 335.

- Beck S. L. (1989) The crossover design in clinical nursing research. *Nursing Research* 38 (5) 291 - 293.
- Behi R. & Nolan M. (1995) Ethical issues in research. *British Journal of Nursing* 4 (12) 712 - 716.
- Belcher A.E., Dettmore D.& Holzemer S.P. (1989) Spirituality and sense of well-being in persons with AIDS. *Holistic Nursing Practice* 3(4) 16-25.
- Belford Ulanov A. (1999) *Religion and the spiritual in Carl Jung*. Paulist Press, New York.
- Bennet S.J.(1992) Perceived threats of individuals recovering from myocardial infarction. *Heart and Lung* 21 (4) 322 - 326.
- Bennet S.J. (1993) Relationships among selected antecedent variables and coping effectiveness in post-myocardial Infarction patients. *Research in Nursing and Health* 16, 131 - 139.
- Bensley R.J. (1991) Defining spiritual health; a review of the literature. *Journal of Health Education* 22 (5) 287 - 290.
- Benoliel J.Q. (1984) Advancing nursing science: Qualitative approaches. *Western Journal of Nursing Research* 6 (3) 1-15.
- Bergin A.E. (1980) Psychotherapy and religious values. *Journal of Consulting and Clinical Psychology* 48, 95-105.
- Bernice H. & Neugarten B.L. (1979) Time, Age and the Life Cycle. *American Journal of Psychiatry* 136 (7) 887 - 894.
- Billings A.G. & Moos R.H. (1984) Coping, stress and social resources among adults with Unipolar Depression. *Journal of Personality and Social Psychology* 46 (4) 877 - 891.
- Boutell KA. & Bozett F.W. (1990) Nurses' Assessment of Patients' Spirituality : Continuing Education Implications. *The Journal of Continuing Education in Nursing* 21 (4) 172 - 176
- Bowman G.S. (2001) Emotions and illness. *Journal of Advanced Nursing* 34 (2) 256-263.
- Boyd J. H. (1998a) A history of the concept of the soul during the 20 th. century. *Journal of Psychology & Theology* 26 (1) 66 - 82.
- Boyd J.H. (1998b) Two orientations of the self. *Journal of Psychology and Theology* 26 (1) 110 - 122.

- Bradshaw A. (1996) The Legacy of Nightingale. *Nursing Times*. February 7, 92 (6) 42-43
- Bradshaw A. (1994) *Lighting the Lamp. The spiritual dimension of nursing care*. Scutari Press, Middlesex, England.
- Brandtstadter J. & Greve W. (1994) The aging self : stabilizing and protective processes. *Developmental Review* 14, 52 - 80.
- Brinkerhoff M.B. & MacKie M.M. (1984) Religious denominations' impact upon gender attitudes : some methodological implications. *Review of Religious Research* 25 (4) 365-378.
- Brooke V. (1987) The spiritual well being of the elderly. *Geriatric Nursing* 8, 194 - 195.
- Brunier G. & Graydon J. (1996) A comparison of two methods of measuring fatigue in patients on chronic haemodialysis: visual analogue versus Likert scale. *International Journal of Nursing Studies* 33 (3) 338-347.
- Bryman A. and Cramer D. (1999) *Quantitative Data Analysis with SPSS Release 8 for Windows. A Guide for Social Scientists*. Routledge, New York.
- Buber M. (1960) *I and Thou*. Charles Scribners, New York.
- Buber M. (1947) *Between Man and Man*. Macmillan, New York.
- Bulman R. J. & Wortman C .B. (1977) Attributions of blame and coping in the " Real World" : Severe accident victims react to their lot. *Journal of Personality and Social Psychology* 35 (5) 351 - 363.
- Bufford R.K., Paloutzian R.F. & Ellison C.W. (1991) Norms for the Spiritual Well Being scale. *Journal of Psychology and Theology* 19 (1) 56 - 70.
- Burkhardt M.A. (1994) Becoming and connecting: Elements of spirituality for women. *Holistic Nursing Practice* 8 (4) 12-21.
- Burkhardt M.A. (1989) Spirituality: An analysis of the concept. *Holistic Nursing Practice* 3 (3) 69 - 77.
- Burnard P. (1998) Qualitative data analysis : using a word processor to categorise qualitative data in social science research. *Social Sciences in Health* 4 (1) 55 - 61.
- Burnard P. and Morrison (1994) *Nursing research in action: Developing basic skills*. 2nd edition, Macmillan, London.
- Burnard P. (1993) Giving spiritual care. *Journal of Community Nursing* 6 (10) 16-18.
- Burnard P. (1992) Some problems in understanding other people : analysing talk in research, counselling and psychotherapy. *Nurse Education Today* 12, 130 - 136.

- Burnard P. (1991) A method of analyzing interview transcripts in qualitative research. *Nurse Education Today* 11, 461-466.
- Burnard P. (1990) Learning to care for the spirit . *Nursing Standard*. January 24, 4(18) 38-39.
- Burnard P.(1988a) Searching for meaning. *Nursing Times*, September 14, 84 (37), 34-36.
- Burnard P. (1988b) The spiritual needs of atheists and agnostics. *The Professional Nurse* 4, 130-132
- Burnard P. (1988c) Discussing spiritual issues with clients. *Health Visitor* 61 (16) 371 - 372.
- Burnard P. (1987a) Sharing a Viewpoint. *Senior Nurse* 7 (3) 38 - 39.
- Burnard P. (1987b) Spiritual distress and the nursing response: theoretical considerations and counselling skills. *Journal of Advanced Nursing* 12, 377 - 382
- Burnard P. (1986) Picking up the pieces. *Nursing Times* April 23, 37-39
- Burns N. and Grove S.K. (1997) *The practice of nursing research* . W.B. Saunders Company , Philadelphia.
- Buttigieg A. (2001) Annual progress report of the Institute of Health Care. University Press, Malta.
- Camp P. E. (1996) Having Faith : Experiencing Coronary Artery Bypass Grafting. *The Journal of Cardiovascular Nursing* 10 (3) 55 - 64.
- Carlsson A.M. (1983) Assessment of chronic pain. I. Aspects of the reliability and validity of the visual analogue scale. *Pain* 16, 87 - 101.
- Carr L.T. (1994) The strengths and weaknesses of quantitative and qualitative research : what method for nursing? *Journal of Advanced Nursing* 20, 716 - 721.
- Carson V., Soeken K.L., Shanty J. & Terry L. (1990) Hope and spiritual well-being:essentials for living with Aids. *Perspectives in Psychiatric Care* 26 (2) 28-34.
- Carson V. & Soeken K.L. (1988) Hope and the relationship to spiritual well - being. *Journal of Psychology & Theology* 16 (2) 159 - 167.
- Carson V.B. (1989) *Spiritual dimensions of nursing practice*. W.B. Saunders Company, Toronto.
- Cash K. (2000) The pure and the applied in nursing education. *Nurse Education Today* 20, 73-77.
- Cassar Pullicino J. (1992) *Studies in Maltese folklore*. University Press, Malta.

Catholic Church Catechism (1995) *Fidei Depositum: Catechism following Vatican Ecumenical Council II*, Archdiocese of Malta, Malta.

Cawley N. (1997) An exploration of the concept of spirituality. *International Journal of Palliative Nursing* 3 (1) 31 - 36.

Chetcuti (1975) *Tahrig għall - ezamijiet tal – Malti. Biex tagħmel traduzzjoni tajba*. Veritas Press, Malta. pp. 9-10.

Chiou A., Potempa K. & Buschmann M.B. (1997) Anxiety, depression and coping methods of hospitalised patients with myocardial infarction in Taiwan. *International Journal of Nursing Studies* 34 (4) 305 - 311.

Christman N.J., McConnell E.A., Pfeiffer C., Webster K.K., Schmitt M. and Ries J. (1988) Uncertainty, coping, and distress following myocardial infarction : transition from hospital to home. *Research in Nursing and Health* 11, 71 - 82.

Clark C.C., Cross J.R., Deane D.M. & Lowry C.L.W. (1991) Spirituality: Integral to quality care. *Holistic Nursing Practice* 5 (3) 67-76.

Cohen J. (1992) A power primer. *Psychological Bulletin* 112 (1) 155 - 159.

Cohen F. and Lazarus R.S . (1980) Coping with the stresses of illness In Stone G.C., Cohen F., Adler N.E. and Associates. *Health Psychology - A Handbook* Jossey-Bass Inc., Publishers, California. pp. 217-254.

Cohen F. & Lazarus R.S. (1973) Active coping processes, coping dispositions, and recovery from surgery. *Psychosomatic Medicine* 35 (5) 375 - 388.

Conn V.S., Taylor S.G. & Abele P.B. (1991) Myocardial infarction survivors : age and gender differences in physical health, psychosocial state and regimen adherence. *Journal of Advanced Nursing* 16, 1026 - 1034.

Conover W.J. (1999) *Practical non-parametric statistics*. 3rd edition. John Wiley and Sons, Inc, New York.

Cormack D.F. (1998) *The Research Process* Blackwell Science, London.

Corner J. (1991) In search of more complete answers to research questions. Quantitative versus qualitative research methods: Is there a way forward? *Journal of Nursing* 16, 718 - 727.

Cottingham J. (1996) *Descartes : Meditations on first philosophy*. Cambridge University Press, Cambridge.

Coward D.D. (1998) Facilitation of self - transcendence in a breast cancer support group. *Oncology Nursing Forum* - 25 (1) 75 - 84.

Cowman S. (1993) Triangulation : a means of reconciliation in nursing research. *Journal of Advanced Nursing* 18, 788 - 792.

Crawford J.R. (2001) Computer programmes implementing statistical methods for research and practice. <http://www.psyc.abdn.ac.uk/homedir/jcrawford/psychom.htm> (accessed on 28th October 2001)

Crawford J.R., Allan K.M. and Jack A.M. (1992) Short-forms of the UK WAIS-R: Regression equations and their predictive validity in a general population sample. *British Journal of Clinical Psychology* 31, 191-202.

Crompton R. (1998) *Class and stratification*. 2nd edition. Blackwell, Oxford.

Cronbach L.J. (1951) Coefficient alpha and the internal structure of tests. *Psychometrika* 16 (3) 297 - 334.

Cronbach L.J. & Meehl P.E. (1955) *Psychological Bulletin* 52 (4) 281 - 302.

Crowe J.M., Runions J., Ebbesen L.S., Oldridge N.B. and Streiner D.L. (1996) Anxiety and depression after acute myocardial infarction. *Heart and Lung* 25 (2) 98 - 107.

Davis C., Davis B.D. & Burnard P. (1997) Use of the QSR. NUD. IST computer program to identify how clinical midwife mentors view their work. *Journal of Advanced Nursing* 26, 833 - 839.

Descartes R. (1980) *Meditations on first philosophy*. Hackett, Indianapolis.

De Vellis A. (1991) *Scale development: Theory and applications*. Newbury Park, CA. Sage.

Dewey J. (1934) *The live Creature. Art as experience*. Minton, Balch and Company, New York.

Dickinson C. (1975) The search for spiritual meaning. *American Journal of Nursing* 75 (10) 1789 – 1793.

Diekmann J.M. & Smith J.M. (1989) Strategies for accessment and recruitment of subjects for nursing research. *Western Journal of Nursing Research* 11 (4) 418 - 430.

Distefano A. (2001) *Hospital Activity Analysis*. Department of Health Information, Malta.

Dixon W.J. (1992) *BMDP Statistical Software Manual*, Volume 1. University of California Press, Berkeley.

Dorff E.N. (1998) *Religion at a Time of Crisis*. [http : // oncolink. upenn. Edu / psychosocial / qol / qol_ 6.html](http://oncolink.upenn.edu/psychosocial/qol/qol_6.html), 1 - 7. (Accessed on 14 . 06 . 98)

Dossey L.K., Guzzetta C.E., Kolkmeier L.G.(1995) *Holistic Nursing*. 2nd Edition. Aspen Publishers, Inc., Maryland.

Dreyer G.D. (1996) Help patient recover by exploring spirituality. *Case Management Advisor* July, 97 - 98.

Duffy M.E. (1985) Designing nursing research : the qualitative - quantitative debate. *Journal of Advanced Nursing* 10, 225 - 232.

Duffy M.E. (1987) Methodological Triangulation: A vehicle for merging quantitative and qualitative research methods. *IMAGE : Journal of Nursing Scholarship*, 19, (3) Fall, 130 - 133.

Dunn P.M. (1993) An investigation into the concept of spiritual needs of hospitalised patients. Unpublished B.Sc. Dissertation. The University of Hull, U.K.

Dyson J., Cobb M. & Forman D. (1997) The meaning of spirituality : a literature review. *Journal of Advanced Nursing* 26, 1183 - 1188.

Ebmeier C., Lough MA., Huth M.M. & Autio L. (1991) Hospitalised School - Age Children Express Ideas. Feelings and Behaviours Towards God. *Journal of Paediatric Nursing* 6 (5) 337 - 349.

Egan G. (1990) *The skilled helper. A systematic approach to effective helping*. 4th Edition. Brooks / Cole Publishing Company, California.

Eichrodt W. (1967) *Theology of the Old Testament II*. SCM Press, London.

Ellis A. (1980) Psychotherapy and Atheistic Values: A response to A. E. Bergin's "Psychotherapy and religious values". *Journal of Consulting and Clinical Psychology* 48 (5) 635 - 639.

Ellison C.W. (1983) Spiritual Well-Being : Conceptualisation And Measurement. *Journal of Psychology and Theology* 11 (4) 330-348.

Ellison C.W. and Paloutzian R.F. (1982) In Ellison C.W. (1983) Spiritual Well - Being : Conceptualisation And Measurement. *Journal of Psychology and Theology* 11 (4) 330 - 348.

Ellison C.W. & Smith J. (1991) Toward an integrative measure of health and well - being. *Journal of Psychology and Theology* 19 (1), 35 - 48.

Elkins D., Hedstrom L.J., Hughes L.L., Leaf J.A. & Saunders C. (1988) Toward a humanistic phenomenological spirituality. *Journal of Humanistic Psychology* 28 (4) 5 - 18.

El-Rufaie, O., Absood, G. (1987) Validity study of the Hospital Anxiety and Depression scale among a group of Saudi patients. *British Journal of Psychiatry* 151, 687-688.

Emden C. (1992) Becoming a reflective practitioner In *Towards a discipline of nursing* Gray R. and Pratt R (Eds). Churchill Livingstone, Melbourne.

- Estabrooks C.A. (1997) What kind of evidence does qualitative research offer cardiovascular nurses? *Canadian Journal of Cardiovascular Nursing* 8 (1) 31 - 35
- Fallowfield L. (1990) The quality of life. The missing measurement in health care. Souvenir Press (E & A) Ltd, Bristol.
- Fehring R.J., Brennan P. & Keller M.L. (1987) Psychological and spiritual well-being in college students. *Research in Nursing and Health* 10, 391-398.
- Fehring R.J., Miller J.F. & Shaw C. (1997) Spiritual well - being, religiosity, hope, depression, and other mood states in elderly people coping with cancer. *Oncology Nursing Forum* 24 (4) 663 - 671.
- Ferketich S. and Muller M. (1991) Factor analysis revisited. *Nursing Research* 39 (1) 59 - 62.
- Ferrell B.R., Grant M., Funk B., Otis - Green S. & Garcia N. (1997) Quality of life in breast cancer. Part I : Physical and social well - being. *Cancer Nursing* 20 (6) 398 - 408.
- Ferrell B.R., Grant M., Funk B., Otis - Green S. & Garcia N. 62.(1996) Quality of life in breast cancer. Part II : Psychological and spiritual well - being. *Cancer Nursing* 21 (1) 1 - 8.
- Fernsler J.I. (1999) Spiritual well - being and demands of illness in people with colorectal cancer. *Cancer Nursing* 22 (2) 134 - 140.
- Flemming K. (1997) The meaning of hope to palliative care cancer patients. *International Journal of Palliative Nursing* 3 (1) 14 - 18.
- Folkman S., Lazarus R.S., Gruen R.J. and DeLongis A. (1986) Appraisal, coping, health status and psychological symptoms. *Journal of Personality and Social Psychology* 50 (9) 571 - 579.
- Folkman S. (1984) Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality and Social Psychology* 46 (4) 839 - 852.
- Folkman S. & Lazarus R.S. (1980) An analysis of coping in a middle - aged community sample. *Journal of Health and Social Behaviour* 21, 219 - 239.
- Folkman S., Richard S.L., Dunkel - Schetter C., DeLongis A. & Gruen R.J. (1986) Dynamics of a stressful encounter : Cognitive appraisal, coping and encounter outcomes. *Journal of Personality and Social Psychology* 50 (5) 992 - 1003.
- Folkman S. & Lazarus R. S. (1988) Coping as a mediator of emotion. *Journal of Personality and Social Psychology* 54 (3) 466 - 475.
- Forbes S.B. (1994) Hope : an essential human need in the elderly. *Journal of Gerontological Nursing* June 5 - 10.

- Fowler D.M. (1988) Ethical issues in nursing research. Issues in qualitative research. (1988) *Western Journal of Nursing Research* 10 (1) 109 - 111.
- Frankl V.E. (1962) *Man's search for meaning : an introduction to logotherapy*. Simmon and Schuster, New York.
- Frankl V.E. (1966) Self - transcendence as a human phenomenon. *Journal of Humanistic Psychology* 6, 97 - 106.
- Frankl V.E. (1973) *The Doctor and the Soul. From Psychotherapy to Logotherapy*. Vintage Books, New York.
- Freund P. & Simon V.(1997) Modern Elementary Statistics. 9th edition. Simon & Schuster / Viacom Company, Upper Saddle River.
- Friberg F., Dahlberg K., Peterson M.N., Ohlen J. (2000) Context and methodological decontextualisation in nursing research with examples from phenomenography. *Scandinavian Journal of Caring* 14, 37-43.
- Fulton Picot S.J., Zauszniewski J.A., Debanne S.M. & Hoston E.C. (1999) Mood & blood pressure responses in Black female Care givers and non care givers. *Nursing Research* 48 (3) 150 - 161.
- Fulton R.A. (1992) Spiritual well-being of Baccalaureate nursing students and faculty and their responses about spiritual well-being of patients. Unpublished Ph.D thesis. Widener University, USA.
- Gadamer H.G. (1976) *Philosophical Hermeneutics*. University of California Press, Los Angeles.
- Gift A.G. (1993) Informed consent and vulnerable subjects. *Clinical Nurse Specialist* 7 (4) 183.
- Gift A.G. (1989a) Visual analogue scales : Measurement of subjective phenomena. *Nursing Research* 286 - 288
- Gift A.G. (1989b) Validation of a vertical visual analogue scale as a measure of clinical dyspnoea. *Rehabilitation Nursing* November / December, 323 –325.
- Glaser B.G. and Strauss A.L. (1967) The purpose and credibility of qualitative research. *Nursing Research*, Winter 15 (1) 56 - 61.
- Goddard G. (1995) Spirituality as integrative energy: a philosophical analysis as requisite precursor to holistic nursing practice. *Journal of Advanced Nursing* 22, 808 - 815.
- Golberg B. (1998) Connection : an exploration of spirituality in nursing care. *Journal of Advanced Nursing* 27, 836-842
- Goldberg B. (1997) The Mind-Body-Spirit Connection. *ASHA* Summer, 24-31.

- Goodwin L.D. and Goodwin W.L. (1984) Qualitative versus Quantitative research or Qualitative and Quantitative research? *Nursing Research* 33 (6) 378 - 380.
- Goodwin L. and Prescott P.A. (1981) Issues and approaches to estimating inter-rater reliability in Nursing Research. *Research in Nursing and Health* 4 : 323 - 337.
- Gordon S. and Stokes S.A. (1989) Improving response rate to mailed questionnaires. *Nursing Research* 38 (6) 375 - 376.
- Granstrom S.L. (1985) Spiritual nursing care for oncology patients. *Topics in Clinical Nursing* April, 39 - 45.
- Green J. (1992) Christianity. Death with Dignity. *Nursing Times*. January 15, 88 (3) : 25 - 29.
- Griffin K. (1984) Right relationships and right behaviour : Ingredients for wholeness. *Journal of Christian Nursing* Spring, 27 - 29.
- Gouder A. (2000) Religious Affiliation in Malta and Gozo. Archbishop Curia, Malta.
- Grosvenor D. (1999) Religion and Spirituality. Sacred Space. *The International Journal of spirituality and Health*. 1 (1) 36-41.
- Guyton A.G. and Hall J.E. (1994) *Medical Physiology* . 9th edition. W.B. Saunders Company, London.
- Haase J.E., Britt T., Coward D.D., Leidy N.K. & Penn P.E. (1992) Simultaneous concept analysis of spiritual perspective, hope, acceptance and self-transcendence. *IMAGE: Journal of Nursing scholarship* 24(2) 141-147.
- Hafen B.Q., Kauen K.J., Frandsen K.J. & Smith L. (1996) The healing power of spirituality. *Spirituality and Health* 377 - 399.
- Hall C.M. (1986) Crisis as opportunity for spiritual growth. *Journal of Religion and Health* 25 (1) 8-17.
- Hallett C. (1995) Understanding the phenomenological approach to research. *Nurse Researcher* 3 (2) 55 - 65.
- Hancock B. (2000) Are nursing theories holistic? *Nursing Standard* 14 (17) 37 –41.
- Hanestad B.R. (1990) Errors of measurment affecting the reliability and validity of data acquired from self - assessed quality of life. *Scandinavian Journal of Caring Science* 4(1) 29 – 33.
- Hannigan B. & Burnard P. (2001) Preparing and writing an undergraduate dissertation. *Nurse Education in Practice* 1, 175 – 180.

Harkness G.A. and Dincher J.R. (1999) *Medical and Surgical nursing. Total patient care*. 10th Edition. Mosby, New York.

Harris E.E. (1993) *Atheism and Theism*. Humanities Press, New Jersey.

Harrison A., Busabir A.A., Al-Kaabi A.O. & Al - Awadi H.K. (1996) Does sharing a mother - tongue affect how closely patients and nurses agree when rating the patient's pain, worry and knowledge? *Journal of Advanced Nursing* 24, 229 - 235.

Havik O.E. & Maeland J.G. (1990) Patterns of emotional reactions after a myocardial infarction. *Journal of Psychosomatic Research* 34 (3) 271 - 285.

Henderson V. (1967) *The nature of Nursing*. The MacMillan Company, New York.

Henderson V. (1969) *The nature of Nursing*. The MacMillan Company, New York.

Herth K. (1990) Fostering hope in terminally - ill people. *Journal of Advanced Nursing* 15 (1) 1250 - 1259.

Hicks C.M. (1999) *Research methods for clinical therapists*. Churchill Livingstone, London.

Higgins L. & Ambrose P. (1994) The effect of adjunct questions on older adults' recall of information from a patient education booklet. *Patient Education and Counselling* 25, 67 - 74.

Highfield M.F. (1992) Spiritual health of oncology patients. Nurse and patient perspectives. *Cancer Nursing* 15(1) 1 - 8.

Hinds P.S., Scandrett-Hibden S. and McAulay L.S. (1990) Further assessment of a method to estimate reliability and validity of qualitative research findings. *Journal of Advanced Nursing* 15, 430 - 435.

Hinds P.S. (1989) Method triangulation to index change in clinical phenomena. *Western Journal of Nursing Research* 11 (4) 440 - 447.

Hjalmarson A.C. (1987) Use of Beta blockers in postinfarct prophylaxis : aspects on quality of life. *American Heart Journal* 114 (1) 245 - 250.

Hodkinson H.M. (1972) Evaluation of a Mental Test score for assessment of mental impairment in the elderly. *Age and Ageing* 1, 233-238.

Hollis M. (1992) *Invitation to philosophy*. Blackwell, Oxford.

Holter I.M. and Schwartz-Barcott D. (1993) Action research: what is it? How has it been used and how can it be used in nursing? *Journal of Advanced Nursing* 18, 298-304.

Hood Morris L.E.H. (1996) A spiritual well - being model : use with older women who experience depression. *Issues in Mental health Nursing* 17, 439 - 455.

- Hoover J. (2002) The personal and professional impact of undertaking an educational module on human caring. *Journal of Advanced Nursing* 37 (1) 79-86.
- Hospital activity Analysis Database (H.A.A.) (1999) *Admission of patients with myocardial infarction at St. Luke's Hospital*. Department of Health Information, Malta.
- Howell D.C. (1997) *Statistical Methods for Psychology*. 4th edition. Duxbury Press, New York.
- Hudson R.E. (1988) Whole or parts - a theological perspective on "person". *The Australian Journal of Advanced Nursing* 6 (1) 12-20.
- Hungelmann J.A., Kenkel-Rossi E., Klassen L. & Stollenwerk R.M. (1996) Focus on spiritual well-being: Harmonious interconnectedness of mind-body-spirit -Use of the JAREL Spiritual Well-Being scale. *Geriatric Nursing* November/December, 262-266.
- Hungelmann J.A., Kenkel-Rossi E., Klassen L. & Stollenwerk R.M. (1985) Spiritual well-being in older adults:harmonious interconnectedness. *Journal of Religion and Health* 24 (2) 147-153.
- Hungelmann J.A., Kenkel-Rossi E., Klassen L. & Stollenwerk R.M. (1989) Development of the JAREL Spiritual well-being scale. *Classification of Nursing Diagnoses Proceedings of the 8th Conference North American Nursing Diagnosis Association*. J.B. Lippincott, Philadelphia.
- Hunt S.M. & Wiklund I. (1987) cross - cultural variation in the weighting of health statements : a comparison of English and Swedish valuations. *Health Policy* 8, 227 - 235.
- Huskisson E.C. (1983) Visual Analogue Scales. In Melzack R. (editor) *Pain measurement and assessment*. Raven Press, New York.
- Hussein A. (1994) Exploring the mind and spirit. *World Health* 47th Year March - April 8 (2).
- Ingalill M. (2000) Interventions in nursing Care, areas of urgency, methodological obstacles and possibilities. Keynote address paper, 10th Biennial Conference, May, Reykjavik, Iceland. pp.1-16.
- Jaarsma T., Kasternans M., Dassen T. & Philipsen H. (1995) Problems of cardiac patients in early recovery. *Journal of Advanced Nursing* 21, 21-27.
- Jacobson S.F. (1988) Evaluating instruments for use in clinical nursing research. In Frank-Stromborg M. *Instruments for clinical nursing research*. Appleton and Lange, California.
- Jalowiec A., Murphy S.P. and Powers M.J. (1984) Psychometric assessment of the Jalowiec Coping Scale. *Nursing Research* 33 (3) 157 - 161.
- James W. (1970) *The Varieties of Religious Experience* Fontana, Glasgow.

- Jarvis P. (1992) Reflective practice and nursing. *Nurse Education Today* 12, 174 -181.
- Jenkins C.D.(1994) The mind and the body. *World Health* 47 (2) 6 - 7.
- Jenkins R.A. & Pargament K.I. (1995) *Religion and Spirituality as resources for coping with cancer*. The Haworth Press, New York.
- Jitapunkul S., Pillay I. and Ebrahim S. (1991) The abbreviated mental test: its use and validity. *Age and Ageing* 20, 332 – 336.
- Johns S.D. (1994) Assess carefully before intervening. *Journal of Christian Nursing* 11 (4) 6 - 7.
- Julius S. (1987) Role of the sympathetic nervous system in the pathophysiology of cardiovascular disease. *American Heart Journal* 114 (1) 232 - 234.
- Jung C.G. (1933) *Modern Man in search of a soul*. Kegan Paul, Trench, Trubner and Company Limited, London.
- Jung C.G. (1963) *Memories, Dreams, Reflections*. Collins and Routledge and Kegan Paul, London.
- Kaczorowski J.M. (1989) Spiritual well being and anxiety in adults diagnosed with cancer. *The Hospice Journal* 5 (3 / 4) 105 - 116.
- Karns P.S. (1991) Building a foundation for spiritual care. *Journal of Christian Nursing Summer* 8 (3) 10 - 13.
- Kauffmann W. (1972) *Existentialism from Dostoevsky to Sartre*. A Meridian Book. World Publishing. Times Mirror, New York.
- Kavanaugh K. and Rodriguez O. (1979) *The collected works of St. John of the Cross*. ICS Publications, Washington.
- Kearney S. (1994) Spirituality as a Coping Mechanisms in Multiple Sclerosis : The patient's perspective. Unpublished B Sc Dissertation. Institute of Nursing Studies. The University of Hull, UK.
- Keckeisen M.E. & Nyamathi A.M. (1990) Coping and adjustment to illness in the acute myocardial infarction patient. *Journal of Cardiovascular Nursing* 5 (1) 25 - 33.
- Kemmis S. (1985) Action research and the politics of reflection In Boud D., Keogh R. & Walker D. (Editors). *Reflection: Turning experience into learning*. Kogan Page, London.
- Kim A.K., Moser D.B., Garvin B.J., Riegel B.J., Doering L.V., Jadack R.A., McKinley S., Schueler A.L., Underman L., McErlean E. (2000) Differences between men and women in anxiety early after acute myocardial infarction. *American Journal of Critical Care* 9 (4) 245 –253.

- Kirschling J.M. & Pittman J.F. (1989) Measurement of Spiritual well being : A Hospice Care giver Sample. *The Hospice Journal* 5 (2) 1 - 11.
- Knafl K. A. and Howard T. (1984) Interpreting and Reporting Qualitative Research. *Research in Nursing and Health* 7, 17 - 24.
- KnappT.R. (1985) Validity, reliability and neither. *Nursing Research* May / June, 34 (3) 189 - 191.
- Koch T. (1994) Establishing rigour in qualitative research : the decision trail. *Journal of Advanced Nursing* 19, 976 - 986.
- Koenig H.G., Hays J.C., Larson D.B., Heorge L.K., Cohen H.J., McCullough M.E., Meadoe K.G. & Blazer D.G. (1999) Does religious attendance prolong survival? A six - year follow up study of 3,968 older adults. *Journal of Gerontology: Medical Sciences* 54A (7) M370 - M376.
- Koenig H.G. (1998) Religious attitudes and practices of hospitalized medically ill older adults. *International Journal of Geriatric Psychiatry* 13, 213 - 224.
- Koenig H.G., Pargament K.I. & Nielsen J. (1998) Religious coping and health status in medically ill hospitalized older adults. *The Journal of Nervous and Mental Disease* 186 (9) 513 - 521.
- Koenig H.G. (1997) *Is Religion good for your health?* Haworth Press, New York.
- Koenig H.G., Cohen H.J., Blazer D.G., Pieper C., Meador K.G., Shelp F., Goli V. & DiPasquale B. (1992) Religious coping and depression among elderly, hospitalized medically ill men. *American Journal of Psychiatry* 149 (12) 1693 - 1700.
- Koeing H.G., Moberg D.O. & Kvale N. (1988) Religious activities and attitudes of older adults in a geriatric assessment clinic. *Journal of American Geriatrics Society* 36, 362 - 374.
- Krefting L. (1990) Rigor in qualitative research. The assessment of Trustworthiness. *The American Journal of Occupational Therapy* 45 (3) 214 - 222.
- Kubler - Ross E. (1969) *On death and dying*. Macmillan, New York.
- Landis B.J. (1996) Uncertainty, spiritual well - being and psychosocial adjustment to chronic illness. *Issues in Mental Health Nursing* 17, 217 - 231.
- Lane D., Carroll D., Ring C., Beevers D.G., Lip G.Y.H. (2002) The prevalence and persistence of depression and anxiety following myocardial infarction. *British Journal of Health Psychology* 7, 11-21.
- Lane J.A. (1987) The care of the human spirit. *Journal of professional Nursing* 3, 332 – 337.

Lanfranco G. (2001) *Drawwiet u Tradizzjonijiet Maltin. (Traditions and Maltese Folklore)* PIN - Publikazzjonijiet Indipendenza, Malta.

Lauzon S. (1995) Gortner's contribution to nursing knowledge development. *IMAGE : Journal of Nursing Scholarship* 27 (2) 100 - 103.

Lazarus R.S. (1991) *Emotion and adaptation*. Oxford University Press, New York.

Lazarus R.S. (1981) The psychology of stress and coping. *Issues in Mental Health Nursing* 7, 1 - 4.

Lazarus R.S. & Folkman (1984) *Stress, appraisal and coping*. Springer Publishing Company, New York.

Lazarus R.S. & Launier R. (1978) Stress-related transactions between person and environment. In Pervin L.A. and Lewis M. (Eds), *Perspectives in interactional psychology* Plenum, New York. pp. 287-327

Ledbetter M.F., Smith L.A., Vosler - Hunter W.L. & Fischer J.D. (1991) An evaluation of the research and clinical usefulness of the spiritual well - being scale. *Journal of Psychology and Theology* 19 (1) 49 - 55.

Levin J.S. & Schiller P.L. (1987) Is there a religious factor in health? *Psychology and Theology* 26 (1) 9 - 35.

Levy S.M. (1981) The experience of undergoing a heart attack, the construction of a new reality. *Journal of the Phenomenological Psychology* 12, 153 - 171.

Lewis G. & Wessely S. (1990) Comparison of the general health questionnaire and the Hospital Anxiety and Depression scale. *British Journal of Psychiatry* 157, 860 - 864.

Leventhal H., Nerenz D.R., Steele D.J. (1984) Illness representations and coping with health threats. In *Handbook of Psychology and Health*. Vol 4. (Baun A., Taylor S.E., Singer J.E.) Lawrence Erlbaum Associates, Hillsdale. pp. 219 - 252.

Lidell E., Segesten K. & Fridlund B. (1997) A myocardial infarction patient's current anxiety: assessed with a phenomenological method. *International Journal of Rehabilitation and Health* 3 (3) 205 - 219.

Lincoln Y. and Guba E. (1985) *Naturalistic Inquiry*. London, Sage.

Lindholm L. (1993) To understand and alleviate suffering in a caring culture. *Journal of Advanced Nursing* 18, 1354 - 1361

Long A. (1997) Nursing : A Spiritual Perspective : Nursing Ethics. Summer, *Christian Nursing* 4 (6) 5 - 8.

- Long A.F., Kneafsey R., Ryan J. & Berry J. (2002) The role of the nurse within the multi-professional rehabilitation team. *Journal of Advanced Nursing* 37 (1) 70-78.
- Lowery B.J. and Jacobsen B.S. (1985) Attributional analysis of chronic illness outcomes. *Nursing Research* 34 (2) 82 - 88.
- Luria R.E. (1973) The validity & reliability of the visual Analogue Mood scale. *Journal of Psychiatric Research* 12, 51 - 57.
- Malasi, T.h., Mirza, I.A., El-Islam, M.F. (1991). Validation of the Hospital Anxiety and Depression scale in Arab patients. *Acta Psychiatrica Scandinavia* 84, 323-326.
- Malta Code of Ethics (1997) *Maltese Code of Ethics for Nurses and Midwives*. Department of Health, Malta.
- Malta Central Office of Statistics (1999) *Women and Men 1999*. Central Office of Statistics, Malta.
- Mansen T.J. (1993) The spiritual dimension of individuals : Conceptual development. *Nursing Diagnosis* 4 (4) 140 - 146.
- Maritain J. (1994) *An introduction to philosophy*. Sheed and Ward, London.
- Martin C.R. and Thompson D.R. (2000) *Designing and analysis of clinical nursing research studies*. Routledge, London.
- Martsof D. & Mickley J. R. (1998) The concept of spirituality in nursing theories: differing world-views and extent of focus. *Journal of Advanced Nursing* 27, 294-303
- Maslow A.H. (1999) *Toward a psychology of being*. 3rd edition. John Wiley and Sons, London.
- Maslow A.H. (1974) *Religion, values and peak - experiences*. The Viking Press, New York.
- Mayou R.A., Gill D., Thompson D.R., Day A., Hicks N., Volmink J., Neil A. (2000) Depression and anxiety as predictors of outcome after myocardial infarction. *Psychosomatic Medicine* 62, 212-219.
- McCann J. (1964) *The cloud of Unknowing*. Christian Classics, Westminster.
- McNair D.M., Lorr M. and Droppleman L. (1971) *Educational and industrial testing service Manual for the Profile of Mood States*. Education and Industrial Testing Service, California.
- McSherry W. (2000) *Spirituality in nursing practice. An interactive approach*. Churchill Livingstone, London.
- McSherry W. (1996) Raising the spirits. *Nursing Times* 92 (3) 48-49.

- McSherry W. (1997) A descriptive survey of nurses' perceptions of spirituality care. Unpublished M.Phil Thesis. University of Hull, Yorkshire, U.K.
- Mechanic D. and Volkart H. (1961) Stress, illness behaviour and the sick role. *American Sociological Review* 26, 51 – 58.
- Melia K.M. (1982) 'Tell it as it is' - qualitative methodology and nursing research : understanding the student nurse's world. *Journal of Advanced Nursing* 7, 327 - 335.
- Mickley J.R., Soeken K. & Belcher A. (1992) Spiritual Well-being, religiousness and hope among women with breast cancer. *Journal of Nursing Scholarship* 24 (4) 267-272.
- Mickley J. & Soeken K. (1993) Religiousness and hope in Hispanic - and Anglo - American women with breast cancer. *Oncology Nursing Forum* 20 (8) 1171 - 1177.
- Miller P., McMahon M., Garrett M. & Ringel K. (1998) A content analysis of life adjustments post-infarction. *Western Journal of Nursing Research* 11, 559-560.
- Miller M.A. (1995) Culture, spirituality and women's health. *JOGNN* March / April, 257 - 263.
- Miller J.F. (1988) Assessment of loneliness and spiritual well being in chronically ill and healthy adults. *Journal of Professional Nursing* 1, 79-85.
- Milne D. (1992) The Hospital Anxiety and Depression Scale (HAD Scale) In *Assessment: A mental health portfolio. Depression*. NFER-Nelson, U.K.
- Moberg D.O. (1979) The development of social indicators of spiritual well - being for quality of life research. *Sociological Perspective*. University Press of America, Washington.
- Moccia P. (1988) A critique of compromise : Beyond the methods debate. *Advanced Nursing Science* 10 (4) 1 - 9.
- Moorey S., Greer S., Watson M., Gorman C., Rowden L., Tunmore R., Robertson B. & Bliss J. (1991) The factor structure and factor stability of the Hospital Anxiety and Depression scale in patients with cancer. *British Journal of Psychiatry* 158, 255 - 259.
- Morse J.M. (1997) *Completing a qualitative project*. Sage Publications, London.
- Morse J.M. and Johnson J.L. (1991) *The illness experience. Dimensions of suffering*. Sage Publications, London.
- Moser D. K. & Dracup K. (1995) Psychosocial recovery from a cardiac event: The influence of perceived control. *Heart and Lung* 24 (4) 273 – 28
- Moya J. and Brykczynska G. (1992) Nursing Care. The Challenge to change. Edward Arnold, London.

Munhall P. L. (1988) Ethical considerations in qualitative research. *Western Journal of Nursing Research* 10 (2) 150 - 162.

Murray R.B. and Zentner J.P.(1989) *Nursing Concepts for Health Promotion*, Prentice Hall, New York.

Nagai-Jacobson M.G. & Burkhardt M.A. (1989) Spirituality: Cornerstone of holistic nursing practice. *Holistic Nursing Practice* 3 (3) 18-26

Narayanasamy A. (1991) *Spiritual care: a resource guide*. Quay Publishing, Guildford.

Nelson A.A. (1980) research design: measurement, reliability, and validity. *American Journal of Hospital Pharmacy* June, 37, 851 - 857.

Neuman B. (1995) *The Neuman System Model*. 3rd edition. Appleton and Lange - Norwalk.

Newman M.A. (1986) *Health as expanding consciousness*. The CV Mosby Company, Toronto.

Nickel J.T., Brown K.J. & Smith B.A. (1990) Depression and anxiety among chronically ill heart patients : age differences in risk and predictors. *Research in Nursing and Heart* 13, 87 - 97.

Nieswiadomy L. (1987) *Foundations of Nursing Research*. Appleton and Lange, California.

Nightingale F. (1860) *Notes on Nursing: What is nursing and what is not*. Dover Publications Inc, New York.

Noda S.J. (2000) The concept of holism in individual psychology and Buddhism. *The Journal of Individual Psychology* 56 (3) 284 - 295.

Nowotny M.L. (1989) Assessment of hope in patients with cancer: Development of an Instrument. *Oncology Nursing Forum* 16 (1) 57-61.

O'Brien M.E. (1982) Religious faith and adjustment to long-term hemodialysis. *Journal of Religion and Health* 21 (1) 68-80.

O'Malley P.A. & Menke E. (1988) Relationship of hope and stress after myocardial infarction. *Heart and Lung* 17 (2) 184-190.

Omery A. (1983) Phenomenology: a method for nursing research. *Advances in Nursing Science* January, 49-63.

O'Neill D.P. & Kenny E.K. (1998) Spirituality and chronic illness. *Image : Journal of Nursing Scholarship* 30 (3) 275 - 280.

- Oppenheim A.N. (1998) *Questionnaire design, interviewing and attitude measurement*. New edition. Pinter, Washington.
- Orley J. (1994) Spiritual dimensions. *World Health*. 47th Year (2) March-April, 9.
- Otto R. (1950) *The idea of the holy: An inquiry into the non-rational factor in the idea of the divine and its relation to the rational*. Oxford University Press, London.
- Pace T., Curmi L. & Pace J. (2001) *Studji Socjali. Kors Baziku*. (Social Studies. A Basic Course). Merlin Press, Malta.
- Pagano M. & Gawreau K. (1993) *Principles of Biostatistics*. Dusbury Press, California.
- Parahoo K. (1993) Questionnaires : Use, value and limitations. *Nurse Researcher* 1 (2) 4 - 25.
- Pathac D.S., Meinhold J.M. & Fisher D.J. (1980) Research Design : Sampling techniques. *American Journal of Hospital Pharmacy*, July, 37 : 998 - 1005.
- Pelusi J. (1997) The lived experience of surviving breast cancer. *Pelusi* 24 (8) : 1343 – 1353
- Peterson E.A. (1985) The physical....the spiritual.....can you meet all of your patient's needs? *Journal of Gerontological Nursing* 11 (10) 23-27.
- Philip A.E., Cay EL., Vetter N.J. and Stuckey N.A. (1979) Short - Term fluctuation in anxiety in patients with myocardial infarction. *Journal of Psychosomatic Research* 23, 277 - 280.
- Phillips J.R. (1989) Qualitative research : a process of discovery. *Nursing Science Quarterly* 7 (3) 5 - 6.
- Piles C.L. (1986) Spiritual care: Role of nursing education and practice. A need survey for curriculum development. Unpublished Ph.D. Dissertation. University of Saint Louis, U.S.A.
- Piles C.L. (1990) Providing spiritual care. *Nurse Educator* 15 (1) 36-41.
- Pilkington F.B. (1996) The use of computers in qualitative research. *Nursing Science Quarterly* 9 (1) 5 – 7.
- Pipa A. (1972) Art as a cure for alienation. In Zeitler R. (editor) *Proceedings of the sixth International congress of aesthetics* Uppsala, U.S.A. pp. 411-413.
- Polit D.F. and Hungler B.P. (1999). *Nursing Research. Principles and Methods*. 6th edn. J.B.Lippincott Company, Philadelphia.
- Polit D.F. and Hungler B.P. (1995). *Nursing Research. Principles and Methods*. 5th edn. J.B.Lippincott Company, Philadelphia.

Pope John Paul II (2000) The Encyclical *Novo millennio ineunte*. (The beginning of a new millenium). Media Centre Press, Malta.

Pope John Paul II (1999) The Encyclical *Fides and Ratio (Faith and Reason)*. Media Centre Press, Malta.

Pope John Paul II (1993) The Encyclical *Veritatis Splendor (The splendour of truth)*. Media Centre Press, Malta.

Pope John Paul II (1989) The Encyclical *Christifidelis Laicis (The mission of lay people in church and the world)*. Media Centre Press, Malta.

Pope Paul VI (1967) The Encyclical *Gaudium et Spes (The Church in the modern world)*. Malta Catholic Action Press, Malta.

Pope John Paul VI (1966) The Encyclical *Lumen Gentium. (The Light of the world)* Malta Catholic Centre Press, Malta.

Polit F.P. and Sherman R.E. (1990) Statistical power in nursing research. *Nursing Research*. Nov-Dec, 39 (6), 365-369.

Portelli D. (1989) *L-istqarrijiet ta' Santu Wistin. (The Confessions of St. Augustine)*. Agostinian Press, Malta.

Powell J.H. (1989) The reflective practitioner in nursing. *Journal of Advanced Nursing*. 14, 824-832.

Preca G. (1988) *The Discipleship*. Malta, Veritas Press

Preca G. (1986) *The Big Book: Jesus Christ on the Cross*. Veritas Press, Malta.

Price D.D., McGrath P.A., Rafii A. & Buckingham B. (1983) The validation of visual analogue scale as ratio scale measures for chronic and experimental pain. *Pain* 17, 45 - 56.

Puskar K.R., Tusaie - Mumford K., Sereika S.M. & Lamb J. (1999) Screening and Predicting adolescent depressive symptoms in rural settings. *Archives of Psychiatric Nursing* 13 (1) 3 - 11.

Quinn F.M. (1996) *The principles and practice of nurse education*. Chapman and Hall, London.

Ramos M.C. (1989) Some Ethical Implications of Qualitative Research. *Research in Nursing & Health*. 12, 57 - 63.

Reed P.G. (1998) A Holistic view of nursing concepts and theories in practice. *Journal of Holistic Nursing* 16 (4) 415 - 419.

- Reed P.G. (1992) An emerging paradigm for the investigation of spirituality in nursing. *Research in Nursing and Health* 15, 349 - 357.
- Reed P.G. (1991) Self - transcendence and mental health in oldest - old adults. *Nursing Research* 40 (1) 5 - 11.
- Reed P.G. (1987) Spirituality and Well-Being in Terminally Ill Hospitalised Adults. *Research in Nursing and Health* 10, 335-344.
- Reed P.G. (1986) Developmental resources and depression in the elderly. *Nursing Research* 35 (6) 368 - 374.
- Renetzky L. (1979) The fourth dimension : Applications to the social services. In Moberg D.O. *Spiritual well – being. Sociological Perspectives*, University Press of America.
- Rew L., Stuppy D. and Becker H. (1988) Construct validity in instrument development : A vital link between nursing practice, research, and theory. *Advances in Nursing Science* 10 (4) 10 - 22.
- Rich J.A. (1996) Spirituality for the Era Ahead. *Human Development* 17 (4) 24 - 25.
- Rich J.A. (1990) Achieving Human Wholeness. *Human Development* 11 (4), 30-33.
- Ridley J.C., Bachrach C.A. & Dawson D.A.(1979) Recall and reliability of interview data from older women. *Journal of Gerontology* 34 (1) 99 - 105.
- Riley B.B. (1998) Types of spiritual well - being among persons with chronic illness : Their relation to various forms of quality of life. *Archives of Physical Medicine and Rehabilitation* 79 (3) 258 - 264.
- Riley J. (1996) *Getting the most from your data. A handbook of practical ideas on how to analyse qualitative data*. Technical and Educational Services Ltd, London.
- Roebuck A., Furze G. and Thompson D.R. (2001) Health-related quality of life after myocardial infarction: an interview study. *Journal of Advanced Nursing* 34 (6) 787-794.
- Rogers C.R. (1980) *On becoming a person. A therapist's view of psychotherapy*. Constable, London.
- Rogers M.E. (1970) Man's developing culture. An introduction to the theoretical basis of nursing. F.A. Davis Company, Philadelphia.
- Rom M. (1994) Stressors and coping 3-15 months after a first MI. Unpublished Ph.D. Thesis. University of Pennsylvania, USA.
- Roper N., Logan W.W. and Tierney A.J. (2000) *The Roper-Logan-Tierney Model of Nursing* . 4th edn. Churchill Livingstone, Edinburgh.

- Rose S.K., Conn V.S. and Rodeman B.J. (1994) Anxiety and self - care following myocardial infarction. *Issues in Mental Health Nursing* 15, 433 - 444.
- Ross L.A. (1997a) *Nurses' Perceptions of Spiritual Care*. Avebury, Sydney.
- Ross L. (1997b) Elderly patients' perceptions of their spiritual needs and care: a pilot study. *Journal of Advanced Nursing* 26, 710-715.
- Ross L. (1996) Teaching spiritual care to nurses. *Nurse Education Today* 16, 38-43.
- Ross L. (1995) The spiritual dimension: its importance to patients' health, well-being and quality of life and its implications for nursing practice. *International Journal of Nursing Studies* 33 (5) 457 - 468.
- Ross L. (1994a) Spiritual care: the nurse's role. *Nursing Standard*, April 13, 8 (29) 33-37.
- Ross L. (1994b) Spiritual aspects of nursing. *Journal of Advanced Nursing* 19, 439-447.
- Ross L.(1992) Spiritual aspects of Nursing: A descriptive study of nurses and perceptions. Unpublished Ph.D. Thesis. Queen Margaret College, Edinburgh.
- Rutledge D.N. & Raymon N.J. (2001) Changes in well - being of women cancer survivors following a survivor weekend experience. *Oncology Nursing Forum* 28 (1) 85 - 91.
- Roy Sr. C. (1986) *Essentials of the Roy Adaptation Model*. (Editor : Andrews H.A.) Appleton-Century-Crofts/Norwalk, Connecticut.
- Roth S. & Cohen L.J. (1986) Approach, Avoidance and Coping with stress. *American Psychologist* July 41 (7) 813 - 819.
- Ryan J.R. (1996) Seeing God more clearly. *Journal of Christian Nursing* 13 (2) 23 - 28.
- Salladay S. (1985) Longing for wholeness. A chronically ill women meets the great physician. *Journal of Christian Nursing* Spring, 25 - 27.
- Sandelowski M. (1986) The problem of rigor in qualitative research. *Advances in Nursing Science* 8 (3) 27 - 37.
- Saudia T.L., Kinney M.R. & Young-Ward L. (1991) Health Locus of control and helpfulness of prayer. *Heart and Lung* 20(1) 60-65.
- Schactman M. (1987) Transfer stress in patients after myocardial infarction. *Focus On Critical Care* April 14 (2) 34 - 37.
- Schleifer S.J., Macari - Hinson M., Coyle D.A., Slater W.R., Kahn M., Gorlin R. & Zucker H.D. (1989) The nature and course of depression following myocardial infarction. *Archives of International Medicine* 149, 1785 - 1789.

- Schmidt Bunkers S.S., Petardi L.A., Pilkington F.B. & Walls P.A. (1995) Challenging the Myths Surrounding qualitative research in Nursing. *Nursing Science Quarterly*, Spring, 9:1: 33 - 37.
- Schnor M. (1984) Does Christianity cause mental illness? *Journal of Christian Nursing* Spring, 24 - 26.
- Seaman (1987) *Research Methods. Experimental and Quasi-experimental research designs*. 3rd edn. Appleton & Lange, Norwalk Connecticut. pp. 193-211.
- Sechrest L., Fay T.L. & Zaidi S.M.H. (1972) Problems of translation in cross-cultural research. *Journal of Cross-Cultural Psychology* 3 (1) 41-56.
- Schon D.A. (1987) *Educating the reflective practitioner*. Aldershot, Avebury.
- Schon D.A. (1983) *The reflective practitioner*. Aldershot, Avebury.
- Sheldrake P. (1998) Spirituality and History. *Questions of interpretation and method*. SPCK, London.
- Simsen B. (1988) Nursing the Spirit. *Nursing Times* 84 (37) 31-33.
- Simsen B. (1985) Spiritual needs and resources in illness and hospitalisation. Unpublished M.Sc. Thesis, University of Manchester, U.K.
- Smeltzer S.C. & Bare B.G. (1996) *Brunner and Suddarth's Textbook of Medical - Surgical Nursing*. 8th Edition. Library of Congress Cataloging-in-Publication Data, Pennsylvania.
- Smith Baldree K., Pelletier Murphy S. and Powers M.J. (1982) Stress identification and coping patterns in patients on hemodialysis. *Nursing Research* 31 (2) 107 - 112.
- Smith J. (1992) Attitudes to the Spiritual needs of patients. *Nursing Times* April 15, 88 (16) 58 - 59.
- Smith A. (1995) An analysis of altruism : a concept of caring. *Journal of Advanced Nursing* 22, 785-790.
- Smith M.J. (1989) Qualitative findings : what to do with them? *Nursing Science Quarterly* 3 - 4.
- Sneck W.J. (1991) Jung's Impact on Christian Spirituality. *Human Development* 12 (4) 5-11.
- Sodestrom K. & Martonson I. M. (1987) Patients' Spiritual Coping strategies: A Study of Nurse and Patient perspectives. *Oncology Nursing Forum* 14 (2) 41 - 46.
- Solomon R.C. (1998) *The big questions. A short introduction to philosophy*. 5th edition. Harcourt Brace College Publishers, New York.

Spector P. E. (1994) Using self - report questionnaires in OB research : a comment on the use of a controversial method. *Journal of Organizational Behaviour* 15, 385 - 392.

Speck P. (1998) *The meaning of spirituality in illness* In Cobb M. and Robshaw V. *The spritual challenge of health care* . Churchill Livingstone, Edinburgh.

Spielberger C.D., Gorsuch R.L., Lushene R., Vagg P.R. & Jacobs G.A. (1983) *Manual for the state-trait anxiety inventory*. CA: Consulting Psychologist Press, Palo Alto.

Steeves R.H. and Kahn D. (1987) Experience of meaning in suffering. *IMAGE: Journal of Nursing Scholarship* 19 (3) 114-117.

Steinbaum E. (1996) That prayer and spirituality can give comfort may not surprise you. That they can help bodies heal might It may be true - or at least that's what some.... *Arthritis Today* 35 - 39.

Stevens Barnum B.J. (1994) *Nursing Theory : Analysis, Application and Evaluation*. J.B. Lippincott Company, London.

Stewart M., Davidson K., Meade D., Hirth A. & Makrides L. (2000) Myocardial infarction: survivors' and spouses' stress, coping and support. *Journal of Advanced Nursing* 31 (6) 1351 - 1360.

Stoll R.I. (1989) In Carson V.B. *Spiritual dimensions of nursing practice*. WB. Saunders Company, Toronto.

Storr A. (1983) *Integration, wholeness and the self. Jung: selected writings*. Fontana Paperbacks, Great Britain.

Stoter D. (1995) *Spiritual Aspect of Health Care*. Mosby, New York.

Streiner D.L. & Norman G.R. (1989) *Health Measurement Scales. A practical guide to their development and use* Oxford University Press, Oxford.

Stromborg M. (1988) *Instruments for clinical nursing research*. Harper and Row, New York.

Stuart E.M., Deckreo J.P. & Mandle C.L. (1989) Spirituality in health and healing : a clinical program. *Holistic Nursing Practice* 3 (3) 35-46.

Sullivan Mitchell E. (1986) Multiple triangulation : a methodology for nursing science. *Advances in Nursing Science* 8 (3) 18 - 26.

Swanton R.H. (1998) *Cardiology*. Blacwell Science, London.

Taylor D.E. and Aspinwall L.G. (1996) Mediating and moderating processes in psychosocial stress, appraisal, coping, resistance and vulnerability In Kaplan H.B. (editor). *Psychosocial Stress. Perspectives on structure, theory, life-course and methods*. Academic Press, San Diego.

Taylor P.B. & Ferszt G.G. (1994) Spiritual healing. *Holistic Nursing Practice* 4 (4) 32 - 38.

Taylor S.H. (1987) Drug therapy and quality of life in angina pectoris. *American Heart Journal* 114 (1) 234 - 239.

Taylor Myers S.T. & Haase J.E. (1989) Guideline for integration of quantitative and qualitative approaches. *Nursing Research* September / October 38 (5), 299 - 301.

Terry D.J. (1992) Stress, coping and coping resources as correlates of adaption in myocardial infarction patients. *British Journal of Clinical Psychology* 31, 215 - 225.

The Holy Bible (1966) *Revised standard version : Catholic Edition*. Catholic truth Society Publishers to the Holy Sea, London.

The Oxford Dictionary of the World Religions (1997) Oxford University Press, Oxford.

The Concise Oxford Dictionary (1990) 5th edition. Clarendon Press, Oxford.

Thomas S.A. (1989) Spirituality: An essential dimension in the treatment of hypertension. *Holistic Nursing Practice* 3, 47 - 55.

Thompson D.R., Bowman G. S. (1997) Evidence for the effectiveness of cardiac rehabilitation. *Clinical Effectiveness in Nursing* 1, 64-75.

Thompson D.R., Ersser S.J. and Webster R.A. (1995) The experiences of patients and their partners one month after a heart attack. *Journal of Advanced Nursing* 22, 707 - 714.

Thompson D.R. (1990) *Counselling the Coronary Patient and Partner*. Royal College of Nursing. Research Series Scutari Press, London.

Thompson D.R. & Webster R.A. (1989) Effect of counselling on anxiety and depression in coronary patients. *Intensive Care Nursing* 5, 52 - 54.

Thompson D.R. (1989) A randomised controlled trial of in-hospital nursing support for first time myocardial infarction patients and their partners: effects on anxiety and depression. *Journal of Advanced Nursing* 14, 291 - 297.

Thompson D.R., Webster R.A., Cordle C.J. and Stutton T.W. (1987) Specific sources and patterns of anxiety in the male patients with first myocardial infarction. *British Journal of Medical Psychology* 60, 343 - 348.

Thompson D.R., Cordle C. and Sutton T. (1982) Anxiety in Coronary patients. *International Rehabilitation Medicine* 4, 161 - 163.

- Thompson S.C., Sobelew - Shubin A., Graham M.A. & Janigian A.S. (1989) Psychological Adjustment following a stroke. *Social Science Medicine* 28 (3) 239 - 247.
- Thompson E. (1991) Beneath the status characteristic: gender variations in religiousness. *Journal for the Scientific Study of Religion* 30 (4) 381 - 394.
- Thomson J.A.K. (1976) *The Ethics of Aristotle*. Penguin Books.
- Thomson J.E. (2000) The place of spiritual well - being in hospice patients's overall quality of life. *The Hospice Journal* 15 (2) 13 - 27.
- Thornbury K.M. (1982) Coping: implications for health practitioners. *Patient counselling and health education* 4 (1), 3-9.
- Thornton L.A. (2001) Depression in post-acute myocardial infarction patients. *Journal of the American Academy of Nurse Practitioners* 13 (8) 364 – 367.
- Toth J.C. (1993) Is stress at hospital discharge after acute myocardial infarction greater in women than in men? *American Journal of Critical Care* 2 (1) 35 - 40.
- Toth J.C. (1988) Measuring the stressful experience of hospital discharge following acute MI. In Walt L CF & Stickland D.C. *Measuring of Nursing Outcomes* Springer, New York.
- Toth J.C. (1987) Stressors affecting older versus Younger AMI patients. *Dimensions of Critical Care Nursing* 6 (3) 147 - 157.
- Treece E.W. and Treece J.W. (1986) *Elements of research in nursing*. 4th edition. The C.V. Mosby Company, Toronto.
- Urden L.D., Stacy K.M. and Lough M.E. (2002) *Thelan's Critical Care Nursing*. 4th edn. Mosby Publishers, St. Louis.
- Vella A. P. (1984) *Storja ta' Malta. (History of Malta)* Volume 1. Klabb Kotba Maltin, Malta.
- Vogelsang J. (1988) The visual analogue scale: An accurate and sensitive method for self - reporting preoperative anxiety. *Journal of Post Anesthesia Nursing* 3 (4) 235 - 239.
- Walsh M. (2000) Commentary. The pure and the applied in nursing education. A response to Keith Cash. *Nurse Education Today* 20, 80-81.
- Walton J. (2002) Discovering meaning and purpose during recovery from an acute myocardial infarction. *Dimensions of Critical Care Nursing* 21 (1) 36 -43
- Walton J. (1999) Spirituality of patients recovering from an acute myocardial infarction. *Journal of Holistic Nursing* 17 (1) 34 - 53.

- Walton J. (1996) Spiritual relationships. A concept analysis. *Journal of Holistic Nursing*, 14 (3) 237 - 250
- Watson J. (1999) *Postmodern nursing and beyond*. Churchill Livingstone, London.
- Watson P.J., Milliron J.T., Morris R.J. & Hood R.W. (1995) Religion and the self as text: toward a Christian Translation of self - actualization. *Journal of Psychology and Theology* 23 (3) 180 - 189.
- Watson R. (2001) Old age: mind, body and spirit – the biological stages of ageing. *Journal of Community Nursing* 15 (4) 24-28.
- Webb M.S. and Riggan O.Z. (1994) A comparison of anxiety levels of female and male patients with myocardial infarction. *Critical Care Nurse* February, 118 – 124.
- Webster K.K. & Christman N.J. (1988) Perceived uncertainty and coping post myocardial infarction. *Western Journal of Nursing Research* 10 (4)384 - 400.
- Whelton B. (2000) Commentary. The pure and the applied in nursing education. A response to Keith Cash. *Nurse Education Today* 20, 82-83.
- Widerquist J. & Davidhizar R. (1994) The ministry of nursing. *Journal of Advanced Nursing* 19, 647-652.
- Widerquist J.G. (1992) The spirituality of Florence Nightingale. *Nursing Research* 41(1) 49 - 55.
- Wilkinson M.J.B. and Barczak P. (1988) Psychiatric screening in general practice: comparison of the general health questionnaire and the hospital anxiety depression scale. *Journal of the Royal College of General Practitioners* 38, 311-313.
- Wiklund I., Sanne H., Vedin A. & Wilhelmsson C. (1984) Psychosocial outcome one year after a first MI. *Journal of Psychosomatic Research* 28, 309 - 321.
- Wilson Barnett J. (1991) The experiment: Is it worthwhile? *International Journal of Nursing Studies* 28 (1) 77-87.
- Wilson H. S. (1996) Methodology Mistakes in Grounded Theory. *Nursing Research* 45 (2) 122 - 124.
- Woods Smith D. (1995) Power and Spirituality in Polio Survivors: A study based on Rogers' Science. *Nursing Science Quarterly* 8 (3) 133-139.
- Woods Smith D. (1994) Toward developing a theory of spirituality. *Vision*, 2 (1) 35 - 44.
- Wulff D.M. (1997) *Psychology of Religion. Classic and contemporary*. John Wiley and Sons Inc., New York.
- Yalom I.D. (1980) *Existential Psychotherapy*. Harper Collins Publishers, New York.

Zigmond A.S. & Snaith R.P. (1983) The Hospital Anxiety and Depression scale. *Acta Psychiatrica Scandinavica* 67, 361 - 370.

Zimmerman B. (1973) *The dark night of the Soul by St. John of the Cross*. James Clarke & Co. Limited, Cambridge.

BIBLIOGRAPHY

- Agarwal M. and Dalal A.K. (1993) Beliefs about the world and recovery from myocardial infarction. *The Journal of Social Psychology* 133 (3) 385 - 394.
- Ambur Scherck K. (1992) Coping with acute myocardial infarction. *Heart and Lung* 21 (4) 327 - 333.
- Angus J. (1996) Women and recovery from myocardial infarction and coronary artery bypass surgery, Part I : The everyday activities of Canadian Women. *Canadian Journal of Cardiovascular Nursing* 7 (4) 9 - 14.
- Baird R.M. (1985) Meaning in life : Discovered or created? *Journal of Religion and Health* 24 (2) 117-124.
- Bargagliotti L.A and Trygstad L.N. (1987) Difference in Stress and coping findings : A reflection of social realities or methodologies? *Nursing Research* 36 (3)170 – 173.
- Bearon L.B. & Koenig H.G. (1990) Religious cognitions and use of prayer in health and illness. *The Gerontologist* 30 (2) 249 - 253.
- Berkman L.F., Leo - Summers L. & Horwitz R.I. (1992) Emotional support & survival after MI. *Annals of Internal Medicine* 117, 1003 - 1009.
- Bradley D.E. (1995) Religious involvement and social resources: Evidence from the Data Set “Americans’ Changing Lives.” *Journal for the Scientific Study of Religion* 34 (2) 259 - 267.
- Brand P. (1995) Coping with a chronic disease : the role of the mind and spirit. *Patient Education and Counselling* 26, 107 - 112.
- Brunelli S. (2001) Human and spiritual values. *World Futures* 56 (3) 219 –240.
- Bufford R.K., Paloutzian R.F. & Ellison C. W. (1991) Norms for the spiritual well - being scale. *Journal of Psychology and Theology* 19 (1) 56 - 70.
- Byrd R.C. (1988) Positive therapeutic effects of intercessory prayer in a coronary care unit population. *Southern Medical Journal* 81(7) 826 - 829.
- Carson V.B. (1993) Spirituality: Generic or Christian? *Journal of Christian Nursing*. Winter, 24-27.
- Carson V. & Huss K. (1979) Prayer - An effective therapeutic and teaching tool. *Journal PN and Mental Health Services* March, 34 - 37.
- Clarke D.E., Walker J.R. and Cuddy T.E. (1996) The role of perceived over protectiveness in recovery 3 months after myocardial infarction. *Journal of Cardiopulmonary Rehabilitation* 16, 372 - 377.

- Daaleman T.P., Cobb A.K., Frey B.B. (2001) Spirituality and well being: an exploratory study of the patient perspective. *Social Science and Medicine* 53 (11) 1503 – 1512.
- Davidhizar R., Poole V., Newman Giger J.& Henderson M. (1998) When your patient uses Denial. *The Journal of Practical Nursing* 10 - 14.
- Dossey B.M. (1994) Implications for bio - psycho - social -spiritual concerns in cardiovascular nursing. *The Journal of Cardiovascular Nursing* 8 (4), 72 -88.
- DuCette J. & Keane A. (1984) “Why Me?”: An attributional analysis of a major illness. *Research in Nursing & Health* 7, 257 - 264.
- Emblen J.D. (1992) Religion and Spirituality defined according to current use in nursing literature. *Journal of Professional Nursing* 8 (1) 41 - 47.
- Fahlberg L.L., Wolfer J. & Fahlberg L.A. (1992) Personal crisis? Growth or pathology? *American Journal of Health Promotion* 7 (1) 45 - 52.
- Faller H. (1990) Coping with MI : A cognitive - Emotional Perspective. *Psychotherapy & Psychosomatic* 54, 8 - 17.
- Frazier S.K. and Garvin B.J. (1996) Cardiac patients’ conversations and the process of establishing meaning. *Progress in Cardiovascular Nursing* 11 (4) 25 - 34.
- Gee E.M. & Veevers J.E. (1990) Religious involvement and life satisfaction in Canada. *Sociological Analysis* 51 (4) 387 - 394.
- Gibson A. (1996) Personal experiences of individuals using meditations from a metaphysical source. *Visions* 4 (1) 12 - 23
- Gill J.J. in Wicks R.J., Parson R.D. & Capps D. (1993) *Anxiety and stress. Clinical handbook of Pastoral Counselling*. Expanded Edition. Integration books, New York.
- Gilutz H., Bar - One D. Rehnquist N. & Cristal N. (1991) The relationship between causal attribution and rehabilitation in patients after their first MI. A cross cultural study. *European Heart Journal* 12, 883 - 888.
- Graff Low K. (1993) Recovery from MI and coronary artery bypass surgery in women, psychosocial factors. *Journal of Women’s Health* 2 (2)133 - 139
- Haberman M.R.m Woods N.F. & Packard N.J. (1990) Demands of chronic illness: reliability and validity assessment of a Demands of Illness Inventory. *Holistic Nursing Practice* 5 (1), 25 - 35.
- Hamilton G.A. and Seidman R.N. (1993) A comparison of the recovery period for women and men after an acute myocardial infarction. *Heart and Lung* 22 (4) 308 - 315.

Harmon Y. (1985) The relationship between religiosity and Health. *Health Values : Achieving High Level Wellness* 9 (3) 23 - 25.

Hildingh C., Fridlund B. and the M.I.S.S.-W. Study Group. (1997) Social network and experiences of social support among women 12 months after their first myocardial infarction. *International Journal of Rehabilitation and Health* 3 (2) 131 - 142.

Hildingh C., Segesten K. & Fridlund B. (1997) Elderly persons' social network and need for social support after their first myocardial infarction. *Scandinavian Journal of Caring Science* 11, 5 - 11.

Hildingh C., Fridlund B. and Segesten K. (1995) Cardiac nurses' preparedness to use self - help groups as a support strategy. *Journal of Advanced Nursing* 22, 921 - 928.

Jackson L.E. & Coursey R.D. (1988) the relationship of God control and internal locus of control to intrinsic religious motivation, coping and purpose in life. *Journal for the Scientific Study of Religion* 27 (3) 399 - 410.

Jacobsen B.S., Lowery B.J. & McCauley K. (1992) Why me? Causal thinking, affect, and expectations in MI patients. *Journal of Cardiovascular Nursing* 6 (2) 57 - 65.

Jenkins D.A. & Rogers H. (1995) Transfer anxiety in patients with myocardial infarction. *British Journal of Nursing* 4 (21) 1248 - 1521.

Johnson L.H. and Roberts S.L. (1996) Hopelessness in the myocardial infarction patient. *Progress in Cardiovascular Nursing* 11 (2) 19 - 32.

Kahn D.L. & Steeves R. (1993) Spiritual well - being : a review of the research literature. *A Quality of Life - A Nursing Challenge* 2 (3) 60 - 65.

Keighley T. (1997) Organisational structures and personal spiritual belief. *International Journal of Palliative Nursing* 3 (1) 47-51.

Kim J., Heinemann A.W., Bode R.K., Sliwa J. & King R.B. (2000) Spirituality , Quality of life, and Functional recovery after Medical Rehabilitation. *Rehabilitation Psychology* 45 (4) 365 - 385.

King M., Speck P. & Thomas A. (1994) Spiritual and religious beliefs in acute illness - is this a feasible area for study? *Social Science and Medicine* 38 (4) 631 - 636.

King D.E. & Bushwick B. (1994) Beliefs and attitudes of hospital inpatients about Faith Healing and Prayer. *The Journal of Family Practice* 39 (4) 349 - 352.

Kline Leity N. (1990) Psychophysiological process of stress in chronic physical illness : a theoretical perspective. *Journal of Advanced Nursing* 15 478 - 486.

Koeing H.G., Larson D.B. & Larson S.S. (2001) Religion and coping with serious Medical Illness. *The Annals of Pharmacotherapy* 35, 352 - 359.

- Koenig H.G., George L.K. & Peterson B.L. (1998) Religiosity and remission of depression in medically ill older patients. *American Journal of Psychiatry* 155 (4) 536 - 542.
- Koenig H.G., George L.K., Peterson B.L. & Pieper C.F. (1997) Depression in medically ill hospitalized older adults: prevalence, characteristics, and course of symptoms according to six diagnostic schemes. *American Journal of Psychiatry* 154 (10) 1376 - 1383.
- Koenig H.G. (1995) Use of acute hospital services and mortality among religious and non-religious copers with medical illness. *Journal of Religious Gerontology* 9 (3) 1 - 21.
- Korner I.N. (1970) Hope as a method of coping. *Journal of Consulting and Clinical Psychology* 34 (2) 134 - 139.
- Ladwig K.H., Lehmacher W., Roth R., Breithardt G., Budde T.H. & Borggrefe M. (1992) Factors which provoke post - infarction depression : results from the post - infarction late potential study (PILP) *Journal of Psychosomatic Research* 36 (8) 723 - 729.
- Langner S.R. (1995) Finding meaning in caring for elderly relatives: Loss and personal growth. *Holistic Nursing Practice* 9 (3) 75-84.
- Larson D. B. & Koenig H.G. (2000) Is God good for your health? The role of spirituality in medical care. *Cleveland Clinic Journal of Medicine* 67 (2) 80 - 84.
- Lowery BJ., Jacobsen BS., Cera MA., McIndoe D., Kleman M. & Menopause F. (1992) Attention versus avoidance : Attributional search and denial after myocardial infarction. *Heart and Lung* 21 (6) 523 - 528.
- Marsh G.W. (1991) Self - transcendence and related concepts for nursing investigation. The discovery of revelation within the lifestyle change process. *Communicating Nursing Research* 24, 251 – 277.
- Maruca D. (1991) Spiritual direction in a cross-cultural perspective. *Human Development* 12 (1) 40-45
- Maslow A.H. (1969) Various meaning of transcendence. *Journal of Transpersonal Psychology* 1, 56 - 66.
- Matthews D.A. (1997) Faith and medicine : reconciling the Twin Traditions of Healing. *Mind / Body Medicine* 2 (1) 3 - 119.
- Maton K.I. (1989) The stress - buffering role of spiritual support: Cross - sectional and prospective investigations. *Journal for the Scientific Study of Religion* 28 (3) 310 - 323.
- McCullough M.E. (1995) Prayer and health: Conceptual issues, research review, and research agenda. *Journal of Psychology and Theology* 23 (1) 15 - 29.

McCullough M.E. & Worthington E. L. (1994) Encouraging clients to forgive people who have hurt them: review, critique and research prospectus. *Journal of Psychology and Theology* 22 (1) 3 - 20.

McIntosh P. (2000) Faith is powerful medicine. *Reader's Digest* May, 149-152.

McSherry W. & Draper P. (1997) The Spiritual dimension: why the absence within nursing curricula? *Nurse Education Today* 17, 413 - 417.

McSherry W. & Draper P. (1998) The debates emerging from the literature surrounding the concept of spirituality as applied to nursing. *Journal of Advanced Nursing* 27, 683 - 691.

Meisenholder., Bell J. & Chandler E. N. (2000) Faith, prayer, and health outcomes in elderly native Americans. *Clinical Nursing Research* 9 (2) 191-193.

Mendez de Leon C.F., Krumholz H.M., Vaccarino V., Williams C.S., Glass T.A., Berkman L.F. & Kas S.V. (1998) A population - based perspective of changes in health - related quality of life after MI. in older men and women. *Journal of Clinical Epidemiology* 51 (7) 609 - 616.

Meserve H.C. (1991) The Human side of prayer. *Journal of Religion and Health* 30 (4) 271 - 276.

Midence K. (1992) Courage in the face of crisis. *Nursing Times* 88 (22) 46 - 48

Miller P., Johnson N.L., Wickoff R. and McMahon M. (1982) Health beliefs of and adherence to the medical regimen by patients with ischaemic heart disease. *Heart and Lung* 11 (4) 332 - 339.

Miller P., Garnet M.J., Stoltenberg M., McMahon M. & Ringel K. (1990) Stressors and stress management 1 month after MI. *Rehabilitation Nursing* 15 (6) 306 - 310.

Miller G., Fleming W. & Brown - Anderson F. (1998) Spiritual well - being scale ethnic differences between Caucasians and African - Americans. *Journal of Psychology and Theology* 26 (4) 358 - 364.

Miller W.B. and Rosenfield R. (1974) A psychophysiological study of denial following acute MI. *Nursing Research* 35, 43-53.

Minckley B.B., Burrows D., Ehrat K., Harper L., Jenkins S.A., Minckley W.F., Page B., Schramm D.E. and Wood C. (1979) Myocardial Infarct Stress of Transfer Inventory: Development of a research tool. *Nursing Research* 28 (1) 4 - 10.

Moberg D.O. (1986) Spirituality and Science. The progress, problems and promise of scientific research on spiritual well - being. *Journal of American Scientific Affiliation* 38 (3) 187 - 194.

- Murrow E.J. (1996) Acute and chronic illness : similarities, differences and challenges. *Orthopaedic Nursing* 15 (5) 47 - 51.
- Myers D.G. & Diener E. (1995) Who is Happy? *Psychological Science* 6(1) 10 - 19.
- Mynchenberg T.L, and Dungan J.M. (1995) A relaxation protocol to reduce patient anxiety. *Dimensions of Critical Care Nursing* 14 (2) 78-85.
- Myrtek M., Fightler A., Konig K., Brugner G. & Muller W. (1994) Differences between patients with asymptomatic & symptomatic MI : the relevance of psychological factors. *European Heart Journal* 15, 311 - 317.
- Nelson P.B. (1990) Religious orientation of the elderly. *Journal of Gerontological Nursing* 16 (2) 29 - 35.
- Nolan R.P. & Weilgosz A.T. (1991) Assessing adaptive and maladaptive coping in the early phase of acute myocardial infarction. *Journal of Behavioural Medicine* 14 (2) 111 - 125.
- Oleridge N., Guyatt G. & Jones N. (1991) Effects on quality of life with comprehensive rehabilitation after acute M I. *American Journal of Cardiology* 67, 1084 - 1089.
- Paloma M.M. & Pendleton B.F. (1998) The effects of prayer and prayer experiences on measures of general well being. *Journal of Psychology and Theology* 19 (1) 71 - 83.
- Paloutzian R.F. (1996) *Invitation to the Psychology of Religion*. Allyn and Bacon, London.
- Pargament K.I., Kennell J., Hathaway W., Grevengoed N., Newman J. & Jones W. (1988) Religion and the problem - solving process: Three styles of coping. *Journal for the Scientific Study of Religion* 27 (1) 90 - 104.
- Pargament K.I. (1986) God and the Just World: Casual and coping attributions to God in Health situations. *Journal for the Scientific Study of Religion* 25 (2) 193 - 207.
- Peterson L.R. & Roy A. (1985) Religiosity, anxiety and meaning and purpose: Religion's consequences for psychological well being. *Review of Religious Research* 27 (1) 57 - 62.
- Nietzsche F. (1964) The will to power in art. In Rader M. (Editor) The meaning of art. A modern book of aesthetics. Holt, Rinehart & Winston, New York.
- Reed P.G. (1991) Self - Transcendence and mental health in oldest - old adults. *Nursing Research* 40 (1) 5 - 11.
- Reed P.G. (1991) Toward a nursing theory of self - transcendence : deductive reformulation using developmental theories. *Advances in Nursing Science* 13 (4) 64 - 77.

- Reed P.G. (1996) Transcendence : Formulating Nursing Perspectives. *Nursing Science Quarterly* 9 (1) 2 - 4.
- Reinert D.F & Bloomingdale J.R. (2000) Spiritual experience, religious orientation and self - reported behavior. *The international Journal for the Psychology of Religion* 10 (3) 173 - 180.
- Rowe M.A. (1996) The impact of internal and external resources on functional outcomes in chronic illness. *Research in Nursing and Health* 19, 485 – 497.
- Salisbury H. (1997) Home - based myocardial infarction rehabilitation. *Health Visitor* 70 (7) 265 - 267.
- Scheier M.F. & Carver C.S. (1992) Effects of optimism on psychological and physical well - being : Theoretical overview and empirical update. *Cognitive therapy and Research* 16 (2) 201 - 228
- Scheier M.F. & Carver C.S. (1985) Optimism, coping and health: Assessment and implications of generalised outcome expectancies. *Health Psychology* 4 (3) 219 - 247.
- Schmied L.A. & Jost K.J. (1994) Church attendance, religiosity and health. *Psychological Reports* 74, 145 - 146.
- Schneiders S.M. (1998) *Studies in spirituality*. Volume 8. Netherlands, Kokpharos.
- Schussler G. (1992) Coping strategies and individual meanings of illness. *Social Science and Medicine* 34 (4) 427 - 432.
- Thorson Gonzalez M. (1999) Phenomena related to meaning and purpose in life - core issues in nursing: Theoretical frameworks and perspectives. *Nursing Development* 51 (19) 40 - 45.
- Toth J.C. (1992) Faith in recovery. Spiritual support after an acute MI. *Journal of Christian Nursing*, Fall, 28 - 31.
- Twibbel R.S., Wieseke A.W., Marine M., Schoger J. (1996) Spiritual and coping needs of critically ill patients: validation of nursing diagnoses. *Dimensions of Critical Care Nursing* 15 (5) 245-253.
- Waite Ph., Hawks S.R. & Gast J.A. (1999) The correlations between spiritual well - being and health behaviours. *Applied Research Briefs: Spiritual Health* 13 (3) 159 - 163.
- Younger J.B. (1995) The alienation of the sufferer. *Advances in Nursing Science*. 17 (4) 53-72.
- Zauszniewski J.A. (1995) Theoretical and Empirical considerations of resourcefulness. *IMAGE : Journal of Nursing Scholarship* 27 (3) 177 - 180.

APPENDICES

A - M

- Appendix A** Letters of permissions to use and test research tools
- Appendix B** Letters of permissions to conduct the research study
- Appendix C** Content Validity of HSCS scale
- Appendix D** Test-Retest for reliability of the research instruments
- Appendix E** Information to and from patients across time
- Appendix F** Time 1 (CCU) Research Instruments
- Appendix G** Time 2 and Time 3 Research Instruments
- Appendix H** Test-retest reliability results of research instruments
- Appendix I** Data management
- Appendix J** Copyright permissions:
Publishers of Books and Nursing Journals
- Appendix K** Additional results of pilot and main study
- Appendix L** Additional results of pilot and main study
- Appendix M** Time schedule of the research process

16, St. John's Street,
Siggiewi.
Malta. QRM 13.

Appendix A.1

27th May, 1999

Ms. Ruth Stollenwerk, DNSc,
Associate Professor,
Marquette University College of Nursing,
Clark Hall,
P.O. Box 1881,
Milwaukee, WI 5320-1881.
United States of America.

Re: Permission to use JAREL Spiritual Well-Being Scale

Dear Prof Stollenwerk,

I am a lecturer in Nursing at the Institute of Health Care, University of Malta. Presently, I am undertaking part-time Ph.D at the University of Hull Yorkshire, U.K. on ***Spiritual Well-Being, Stress and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.***

Following analysis of the Literature, I can say that it was a pleasure to read both articles Hungelmann JA, Kenkel-Rossi E, Klassen L, Stollenwerk RM. (1996) Focus on Spiritual Well-Being: Harmonious Interconnectedness of Mind-Body-Spirit - Use of the JAREL Spiritual Well-Being Scale. *Geriatric Nursing*, November/December: 262-266. and Hungelmann JA, Kenkel-Rossi E, Klassen L, Stollenwerk RM. (1985) Spiritual well-being in older adults:harmonious interconnectedness. (1985) *Journal of Religion and Health* Summer 24(2): 147-153.

Therefore, I am now in the process of organising the research instruments to meet the aims of the research study. Two of the aims are to explore the relationship between spiritual well-being and stress of patients with MI and to determine the spiritual coping strategies commonly used by patients with MI.

Since **JAREL SWB Scale** is the appropriate instrument to measure SWB of patients with MI, could you kindly grant me permission to use the instrument for my study. A copy of the scale will be much appreciated.

Following refinement of my final draft of the research proposal, I shall be able to send you a copy for your information.

Please find enclosed my **VISA card No** **expiring in**
August 2000, to cover any expenses due.

Whilst thanking you, I look forward to receiving a positive reply from you.

Yours' sincerely,

Donia Baldacchino

Date: Sun, 8 Aug 1999 12:14:25 -0500
X-Sender: jahmann@mail.execpc.com
Mime-Version: 1.0
To: Donia Baldacchino <cbal1@ihc.um.edu.mt>
From: JoAnn Hungelmann <jahmann@execpc.com>
Subject: Re: JAREL Spiritual Well-Being Scale

Appendix A.1.1

Dear Donia Baldacchino,
What a wonderful gift -- your e-mail letter of August 8th. You are very welcome to use the JAREL Scale in your research efforts. I admire the effort involved in translating the two scales into the Maltese language. I wish you success in your efforts, as well as a blessing on the research study and your presentation in May, 2000, in Iceland.
Thank you for your interest in the Scale and your kind words.
Sincerely,
JoAnn Hungelmann

At 04:51 PM 8/8/99 +0200, you wrote:

>Dear Dr.JoAnn Hungelmann, With reference to the use of your tool in my
>study, I would like to thank you heartily for the granted permission given
>to me by Ruth Stollenwerk-Ritter on June 28th, 1999. I couldn't write to
>you earlier as I was at the University of Hull for my study visit. I was
>thrilled by your generosity! Thankyou. At the moment I'm in the process of
>translating it into Maltese as the first language in Malta is Maltese and
>the patients will be randomly selected to give them all the chance to
>participate in the study. In addition, test-retest statistical analysis
>will be done to safeguard its reliability and validity. Since I'm using
>also the Hospital Anxiety and Depression (HAD) scale (Snaith and Zigmond)
>which is also being translated into Maltese, I intend to present a paper at
>the European Researchers' Conference in Iceland in May 2000 on "The process
>of translating original research instruments". I'll be sending you a copy
>of the paper before the conference. I admire you for having researched
>spiritual well-being so early! Thanks. Donia.

>
>
>

Date: Sun, 27 Feb 2000 18:24:03 -0600
X-Sender: jahmann@mail.execpc.com
Mime-Version: 1.0
To: Donia Baldacchino <cball@ihc.um.edu.mt>
From: JoAnn Hungelmann <jahmann@execpc.com>
Subject: Re: JAREL SCALE

Appendix A.1.2

Dear Donia,

To the best of our knowledge, you are the first person to translate the JAREL Scale into a language other than English.

We do wish you continued success in your educational endeavor, and in your presentation.

Sincerely,

JoAnn Hungelmann

At 12:51 AM 2/28/00 +0100, you wrote:

>Dear Dr. Hungelmann,
>I've just returned from my study visit at the University of Hull in UK. I'm
>finalising the paper, both for publication and Iceland Conference. I tried
>in vain to trace any existence of translations of JAREL SWB scale. Do you
>have any information about any other instances when JAREL SWB scale was
>translated by other languages? If yes, please can you give me the
>references or a summary of who translated it, into which languages and
>their respective reliability coefficient? I would like to include a
>comparison of mine with the other translations, if possible. I'd appreciate
>your information, even if it is negative. However, there might have been
>translations without being published.
>Thanks very much.
>Donia.
>
>
>

THE UNIVERSITY OF HULL
FACULTY OF HEALTH
SCHOOL OF NURSING

COTTINGHAM ROAD • HULL HU6 7RX • UNITED KINGDOM
RECEPTION/SWITCHBOARD 01482 346311 • FACSIMILE 01482 466166
16, St. John's Street,
Siggiewi
Malta. QRM 13

Appendix A.2

PERSONAL REFERENCE NO:124476
29th September, 1999

Mr. Miles Halliwell.
The Director of Research Group.
NFER-NELSON
Darville House,
2, Oxford Road East,
Windsor,
Berkshire SLA IDF
United Kingdom.



Re: Permission for use HAD Scale in Research

I thank you for sending me the Assessment pack: A Mental Health Portfolio Depression Section.

Presently, I am undertaking part-time Ph.D at the University of Hull Yorkshire, U.K.. Part of the Ph.D. studies consists of a research study on *Spiritual Well-Being, Anxiety, Depression and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role*. My supervisors are Dr. Peter Draper (U.K.), Mr. Gerald Bowman (U.K.) and Rev. Profs George Grima(Malta).

Following the establishment of the research proposal of my longitudinal study, data collection will be carried out on a random sample of patients post Myocardial Infarction on whom I would like to use the HAD Scale (Zigmond and Snaith 1983) to measure the level of anxiety and depression on different times. It is planned that data collection will be done between June 2000 and May 2001.

I was given permission by Dr. C. Mallia, Chairman of the Department of Medicine / Ethical Committee in Malta to conduct this research study. Consequently, may I ask you permission to use the HAD scale for data collection.

Please find enclosed a brief research proposal and a copy of the permission granted by the Ethical Committee in Malta. Your support for this research study is greatly appreciated.

Whilst thanking you, I look forward to receiving a positive reply.

Yours sincerely,

Donia Baldacchino

Donia Baldacchino
Home Tel.No. (356)468227; E-mail Address: cba11@ihc.um.edu.mt



THE QUEEN'S
ANNIVERSARY PRIZES
FOR HIGHER AND FURTHER EDUCATION
1996

From: Denise Moulton <Denise.Moulton@nfer-nelson.co.uk>
To: "'cball@ihc.um.edu.mt'" <cball@ihc.um.edu.mt>
Subject: HADS
Date: Wed, 20 Oct 1999 12:27:48 +0100
MIME-Version: 1.0

Appendix A.2.1.

Dear Ms Baldacchino

Thank you for your letter of 29 September addressed to Miles Halliwell of NFER-NELSON and apologies for the delay in replying. I'm afraid that this letter took a while to reach me.

As you have purchased the Mental Health Portfolio Depression Booklet, you are at liberty to use the HADS in your own research with up to 200 administrations in any one study. You do not state in your letter how many people will be in your study and unfortunately the research proposal was not enclosed.

Should you wish to use complete more than 200 administrations in this study, please let me know and I will be able to give you permission to proceed, maybe with a small fee. However, I recognise that this research is part of your PhD, and so any fee would be very reasonable.

Denise Moulton
Permissions Administrator - NFER-NELSON

16, St. John's Street,
Siggiewi.
Malta. QRM 13.

Ms Isabelle Avallone.
Coordinator of Nursing Studies.
Institute of Health Care,
University of Malta.

27th May, 1999



Re: Students' participation in the Test-Retest of Research Tools

Dear Ms Avallone,

With reference to my research study on ***Spiritual Well-Being, Anxiety, Depression and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role***, I am now in the process of testing the tools for reliability.

Could you kindly give me permission to use the final year students and some other groups in the test-retest of my research instruments. I am aware of the ethical issues of informed consent and confidentiality. Furthermore, in an attempt to safeguard anonymity, my colleagues Miss Carmen Spiteri and Mrs. Lilian Bonello will be helping me to deal with the students' code number.

Thankyou

Donia Baldacchino

Donia Baldacchino.
Lecturer in Nursing,
Institute of Health Care, University of Malta.

*No objection
I Avallone
1/6/99*



16, St. John's Street,
Siggiewi.
Malta. QRM 13.

Dr. Sandra Buttigieg.
The Director
Institute of Health Care,
University of Malta.

17th July 2000

S Buttigieg
11/08/2000

Through: Ms Isabelle Avallone.
Coordinator of Nursing Studies.
Institute of Health Care,
University of Malta.

I Avallone
25/07/00



Re: Students' participation in research study

Dear Dr Buttigieg,

With reference to my research study on ***Spiritual Well-Being, Anxiety, Depression and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role***, I am presently conducting the data collection of the main study from patients and nursing/midwifery students.

I had asked permission from Ms Isabelle Avallone, the coordinator of Nursing and Midwifery division on 27th May 1999 and 25th November 1999.

Could you kindly give me permission to continue with my data collection as had been planned earlier. The students will be given the opportunity to participate on voluntary basis and no names will be used, in order to safeguard the ethical issues of informed consent and confidentiality.

Thankyou

Donia Baldacchino

Donia Baldacchino.
Lecturer in Nursing,
Institute of Health Care, University of Malta.



16, St. John's Street,
Siggiewi.
Malta QRM 13.

17th August 1999

Dr. C. Mallia.
Director of Medicine
St. Luke's Hospital.
G'Mangia.
Malta.



Dear Dr. Mallia,

Re: Ph.D. Nursing Research Study

I am a lecturer in Nursing at the Institute of Health Care, University of Malta. Presently, I am undertaking part-time Ph.D at the University of Hull Yorkshire, U.K.. Part of the Ph.D. studies consists of a research study on ***Spiritual Well-Being, Stress and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.***

Following the establishment of the research proposal of my longitudinal study, data collection will be carried out on a random sample of patients post Myocardial Infarction, nurses working on the acute medical wards and hospital and community chaplains. It is planned that data collection will be done between October 1999 and December 2000.

I am now in the process of asking permission to conduct this study in the local main* and regional* general acute hospitals. My supervisors, Dr. Peter Draper, Mr. Gerald Bowman (U.K.) and Rev. Profs George Grima(Malta) find no objection to the nature of my study as it is not seen to be disruptive or unethical to the persons involved. I am aware that I am bound to adhere to the ethical issues, as declared in the research proposal, especially regarding informed consent and confidentiality.



THE UNIVERSITY OF HULL
FACULTY OF HEALTH
SCHOOL OF NURSING

COTTINGHAM ROAD • HULL HU6 7RX • UNITED KINGDOM
RECEPTION/SWITCHBOARD 01482 346311 • FACSIMILE 01482 466166

In the meantime, I am also asking permission from the Hospital Nursing Management, the respective nursing officers and the managers of the hospital and community chaplaincy. Consequently, may I ask you please to allow me access for data collection. Your support for this research study is greatly appreciated.



Please find enclosed a detailed research proposal with drafts of the instruments, which are being tested for content validity by 4 panels of experts.

Whilst thanking you, I look forward to receiving a positive reply.

Yours sincerely,

Donia Baldacchino

Home Tel.No. (356)468227; E-mail Address: cball@ihc.um.edu.mt

*main hospital refers to St. Luke's Hospital, Malta.

*regional hospital refers to Gozo General Hospital.

cc Dr. Vaclav Svejda, Consultant in Medicine, Gozo General Hospital
cc Dr. Frank Farrugia, Consultant in Medicine, Gozo General Hospital

cc Miss Nicholina Farrugia, Director of Nursing Services.



**ST. LUKE'S HOSPITAL
GUARDAMANGIA - MALTA**

Appendix B.1.1

DEPARTMENT OF MEDICINE

Chairman: Dr. C. Mallia MD FRCP(Edin) FRCP(Lond) FCPP

Telephone No.: 241252, 247860, 246493
Fax No.: 240176; E.mail: carmel.mallia@magnet.mt

25 August 1999

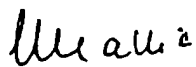
**Ms Donia Baldacchino
Institute of Health Care
University of Malta**

Dear Ms Baldacchino,

Re: PhD Nursing Research Study

- Your request to access information regarding the above study is accepted. May I stress that issues regarding informed consent and confidentiality have to be observed at all times.

Yours sincerely,



Dr. Carmel Mallia

16, St. John's Street,
Siggiewi.
Malta QRM 13.

17th August 1999

Ms Nicholina Farrugia.
Director of Nursing Services,
St. Luke's Hospital.
G'Mangia.
Malta.



Dear Ms Farrugia,

Re: Ph.D. Nursing Research Study

I am a lecturer in Nursing at the Institute of Health Care, University of Malta. Presently, I am undertaking part-time Ph.D at the University of Hull Yorkshire, U.K.. Part of the Ph.D. studies consists of a research study on ***Spiritual Well-Being, Stress and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.***

Following the establishment of the research proposal of my longitudinal study, data collection will be carried out on a random sample of patients post Myocardial Infarction, nurses working on the acute medical wards and hospital and community chaplains. It is planned that data collection will be done between October 1999 and December 2000.

I am now in the process of asking permission to conduct this study in the local main* and regional* general acute hospitals. My supervisors, Dr. Peter Draper, Mr. Gerald Bowman (U.K.) and Rev. Profs George Grima(Malta) find no objection to the nature of my study as it is not seen to be disruptive or unethical to the persons involved. I am aware that I am bound to adhere to the ethical issues, as declared in the research proposal, especially regarding informed consent and confidentiality.



THE UNIVERSITY OF HULL
FACULTY OF HEALTH
SCHOOL OF NURSING

COTTINGHAM ROAD • HULL HU6 7RX • UNITED KINGDOM
RECEPTION/SWITCHBOARD 01482 346311 • FACSIMILE 01482 466166

In the meantime, I am also asking permission from the Hospital Nursing Management, the respective nursing officers and the managers of the hospital and community chaplaincy. Consequently, may I ask you please to allow me access for data collection. Your support for this research study is greatly appreciated.



Please find enclosed a detailed research proposal with drafts of the instruments, which are being tested for content validity by 4 panels of experts.

Whilst thanking you, I look forward to receiving a positive reply.

Yours sincerely,

Donia Baldacchino
Home Tel.No. (356)468227; E-mail Address: cball@ihc.um.edu.mt

- * main hospital refers to St. Luke's Hospital, Malta.
- * regional hospital refers to Gozo General Hospital.

- cc. Mr. Publius Abdilla, Manager Nursing Services, St. Luke's Hospital.
- Mr. Saviour Attard, Dept. Nursing Manager- Acute Wards, Gozo Gen. Hosp
 - Ms. Monica Portelli, Dept. Nursing Manager - Acute Wards, St. Luke's Hosp
 - Ms. Catherine Micallef, Dept. Nursing Manager - CCU, St. Luke's Hospital.



Appendix B.2.1



DIRECTORATE NURSING SERVICES
HEALTH DIVISION
"PALAZZO CASTELLANIA"
15 MERCHANTS STREET
VALLETTA - VLT 03
MALTA

Our Ref.

TELEPHONE: (356) 232270

Your Ref.

FAX: (356) 248644

27th August 1999

Ms. Donia Baldacchino
16, St. John's Str,
Siggiewi QRM 13

Re: Ph.D. Nursing Research study

With reference to your letter dated 17 August 1999, asking permission to conduct a research study, I would like to inform you, that I have no objection to carry out this research study.

Regards,

N. Farrugia

Ms. N. Farrugia
Director Nursing Services

Appendix B.3

16, St. John's Street,
Siggiewi
Malta QRM 13

15th March 2000



Dear Medical Consultant

I am currently undertaking a research study, under the supervision of the University of Hull, UK on *Spiritual Well-Being, Anxiety, Depression and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.*

The longitudinal study will be using a random sample of 60 patients with first MI. Selection of the sample will take place in CCU, where the aims of the study will be explained to the patients followed by their consent. Additionally, the data collection will start on the patient's transfer to the medical ward and continued after discharge for 5 times, over a period of six months. It is hoped that the findings will shed light on the nurse's role in the delivery of spiritual care, in an attempt to enhance the spiritual well-being of patients.

In order to recruit the sample of patients, I'll have to refer to the patients' notes to fill in the Inclusion Criteria Form. Additional to the patient's permission, I was granted permission by Dr. C. Mallia, Director of Medicine and Ms Nicholina Farrugia, Director of Nursing Services.

I am aware of safeguarding the voluntary participation by the informed consent of the patients and to maintain confidentiality and anonymity throughout all the research process. Please find enclosed copies of the permission given by the Directors of Medicine and Nursing Services and the Inclusion Criteria Form. Thankyou.

Donia Baldacchino

Lecturer in Nursing.

Home Tel.No. 468227; E-mail Address: cball@ihc.um.edu.mt

Institute of Health Care : Office 2595 1847, Secretary 244978, 2595 1827.





Appendix B.3.1

Our Ref.

Your Ref.

Tel: 241251/247860

234101

DDI: 2595 + Ext. No.

Dr Edgar Pullicino MD DCH FRCP PhD
Consultant Physician
Department of Medicine (Gastroenterology)
St Luke's Hospital, Malta
☎ : + 356 25951302/4
Fax : + 356 240176
📧 : pull/let029/doc
Date: 6th April 2000

Ms. Donia Baldacchino
16, St. John's Street,
Siggiewi QRM 13

Dear Ms. Baldacchino,

Re: *PhD Nursing Research Study*

Permission is hereby granted to undertake the proposed study. Please pay particular attention to the maintenance of confidentiality and ensure that informed consent is obtained in all patients.

Yours sincerely,

Dr. E. Pullicino

16, St. John's Street,
Siggiewi
Malta QRM 13

17th March 2000



Nursing Officer - Medical Ward

I am currently undertaking a research study, under the supervision of the University of Hull, UK on *Spiritual Well-Being, Anxiety, Depression and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.*

Following data collection from the nursing staff, I am now collecting data from the patients on your ward. The longitudinal study will be using a random sample of 60 patients with first MI. Selection of the sample will take place in CCU, where the aims of the study will be explained to the patients followed by their consent. Additionally, the data collection will start on the patient's transfer to the medical ward and continued after discharge for 5 times, over a period of six months. It is hoped that the findings will shed light on the nurse's role in the delivery of spiritual care, in an attempt to enhance the spiritual well-being of patients.

In order to recruit the sample of patients, I'll have to refer to the patients' notes to fill in the Inclusion Criteria Form. Additional to the patient's permission, I was granted permission by Dr. C. Mallia, Director of Medicine and Ms Nicholina Farrugia, Director of Nursing Services.

I am aware of safeguarding the voluntary participation by the informed consent of the patients and to maintain confidentiality and anonymity throughout all the research process. Please find enclosed copies of the permission given by the Directors of Medicine and Nursing Services and the Inclusion Criteria Form. Thankyou.

Donia Baldacchino

Lecturer in Nursing.

Home Tel.No. 468227; E-mail Address: cball@ihc.um.edu.mt

Institute of Health Care : Office 2595 1847, Secretary 244978, 2595 1827.





Our Ref.

Your Ref.

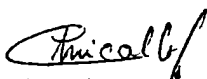
Tel: 241251/247860
234101
DDI: 2595 + Ext. No.

1st September, 1999.

Dear Ms Baldacchino,

RE : PHD Nursing Research study.

You are most welcome to conduct this study in the wards under my coverage.


Ms C. Micallef
Departmental Nurse Manager.

Appendix C.1

16, St. John's Street,
Siggiewi.
Malta. QRM 13.

27th May, 1999

Mr. Thomas Keaghley
Director of International Development.
School of Health Studies.
University of Leeds,
18, Blenheim Terrace.
Leeds LS2 9HD
U.K.

Mr. Keaghley,

I am a lecturer in Nursing at the Institute of Health Care(IHC), University of Malta. Presently, I am undertaking part-time Ph.D at the University of Hull Yorkshire, U.K. on ***Spiritual Well-Being, Stress and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.***

Following analysis of the Literature, I am now in the process of organising the research instruments to meet the aims of the research study, one of which is to elicit the nurse's role in the delivery of spiritual care to promote spiritual well-being of patients with heart attack. To achieve this aim, data will be collected from a sample of nurses, patients and hospital/community chaplains.

In order to establish the content validity a new self-administered questionnaire, an expert panel of 10 persons are being asked to examine its content to see whether they agree on the items of spiritual coping strategies used to cope in the patient's recovery period of MI. Finally, the questionnaire will undergo statistical analysis through test-retest method to establish its reliability and validity .

Consequently, may I ask you to be one of the panelists in this process of content validity. Following completion of the questionnaire and refinement of my final draft of the research proposal, hopefully by mid July 1999, I shall be able to send you a copy in the near future.

Whilst thanking you, I look forward to receiving a positive reply.

Yours' sincerely,

Donia Baldacchino
Home Tel.No. (356)468227
IHC Tel. No. 244978 ; IHC Fax No. 244977
E-mail Address: cball@ihc.um.edu.mt

16, St. John's Street,
Siggiewi.
Malta. QRM 13.

Appendix C.2

15th August, 1999

Mr. Thomas Keaghley
Director of International Development.
School of Health Studies.
University of Leeds,
18, Blenheim Terrace.
Leeds LS2 9HD
U.K.

Spiritual Well-Being, Stress and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.

Re: Content Validity of HSCS scale

Dear Mr. Kealey,

First of all I would like to congratulate you for your interesting contribution in the symposium on *Spirituality in Nursing: Past, Present and Future* at the ICN Centennial Conference in June. During our encounter, I revealed to you my wish in asking you to be part of the expert panel in the content validity process of my research tools.

Thus, I would like to thank you for having accepted to participate. Following feedback from my supervisor Dr. Peter Draper, University of Hull, U.K. in mid July, I have now finalised my research tools.

Could you kindly examine the appropriateness of the questions to ensure achievement of the aims and objectives of my research study. It would be ideal if your feedback will reach me by **mid-October**. It is planned that data collection will be commenced in January 2000. Please find enclosed copies of:

- a brief research proposal
- aims and objectives of the patients' questionnaire
- demographic data sheet of expert panel
- Feedback sheets for your Comments and Suggestions.

Whilst appreciating your expertise, I look forward to receiving from you.
Thankyou.

Yours' sincerely,

Donia Baldacchino
E-mail Address: cball@ihc.um.edu.mt

Spiritual well-being, stress and spiritual coping strategies of patients post Myocardial Infarction: The nurse's role.

PATIENTS' QUESTIONNAIRE - HSCS scale

AIMS AND OBJECTIVES

1. RESEARCH QUESTIONS:

- 1.1. Which are the spiritual coping strategies commonly used by patients with MI between the period of transfer from CCU and discharge, and the following 3 and 6 months after discharge ?
- 1.2. What is the possible relationship between frequency and helpfulness of spiritual coping strategies and personal characteristics, spiritual well-being and stress of patients with MI on transfer from CCU, on the day of discharge home and the following 3 and 6 months after discharge ?

2. AIMS AND OBJECTIVES

Aims

- a) examine the patients' use and helpfulness of spiritual coping strategies in their recovery period.
- b) identify the possible relationship between use and helpfulness of spiritual coping strategies and personal characteristics, spiritual well-being, anxiety, depression of patients with MI

Objectives:

- i) measure the patients' use and helpfulness of spiritual coping strategies during the recovery period by the use of HSCS scale.
- ii) identify patients' rank order of the first five coping strategies found most helpful by the use of Q-sorting cards.
- iii) work out statistical analysis to exhibit possible differences and relationships between use and helpfulness of spiritual coping strategies and personal characteristics, spiritual well-being, anxiety and depression.

Appendix C.4

Spiritual Well-Being, Stress and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.

CONTENT VALIDITY OF THE HELPFULNESS OF SPIRITUAL COPING STRATEGIES SCALE (HSCS) FEEDBACK

DEMOGRAPHIC DATA OF PANEL OF EXPERTS

1. Name
2. Country of residence: Malta ☐ U. K. ☐ U.S.A. ☐
3. Gender: Male ☐ Female ☐
4. Qualifications.....
.....
5. Profession:.....
.....
6. Years of research experience years
7. ReligiousAffiliation.....

THANKS FOR YOUR CONTRIBUTION

3/10/99

Donia Balacchino
16 St John's Street
Siggiewi
MALTA
QRM 13

Dear Donia

Re Content Validity of Questionnaires

Sorry for the slight delay in returning my comments concerning your questionnaires. Firstly it is evident that you have put a great deal of time and effort into their construction and development.

I have written in pencil on your feedback sheet. I hope you can read my handwriting. My biggest concern is in relation to the number of questionnaires, measuring instruments that you are going to use to gather data from patients. Is there not a danger of overwhelming them? You have not mentioned whether you have obtained the relevant ethical approval? With respect to measuring stress and spiritual distress it might be difficult to differentiate between them?

Donia I hope my comments are helpful. Should you require any further validation then do not hesitate to contact me? Please keep in touch and let me know how your research develops.

Best Wishes



Wilf McSherry
Lecturer in Adult Nursing Studies
The University of York

Enc.

OVERALL COMMENTS AND SUGGESTIONS

I recognize that all human beings have spiritual needs. I also recognize that World view is not the same as World religion; but World views support religion. Therefore, failure to explicitly state World views from which the questions are being asked (e.g. Judeo-Christian, New Age, Muslim) may well add confounding - vs clarifying of the findings - to the body of knowledge we (as a worldwide collecting) are attempting to build.

I do believe your questionnaire reflect an adequate sampling of all the possible items that could be used to secure the desired "factual" information.

Thorough, Systematic. Nice job!

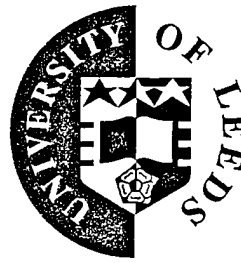
Signature.....



6

Date.....

10/6/99



Appendix C.5.3.

From the School of Healthcare Studies
Centre for the Development of
Nursing Policy and Practice

Tom Keighley
Director of International Development

Donia Baldacchino
16 St. John's St.
Siggiewi
Malta
QRM 13

8 September 1999

Dear Donia,

Many thanks for inviting me to comment on your Patient Questionnaire and HSCS scale. You have obviously done a great deal of work and I have therefore looked at both in some detail. I have pointed out instances of confusion and where greater clarity of meaning might be helpful. The comment "English weak" is not meant to be insulting but is recognition that the phrasing of certain ideas may be different in Malta. I can only make observations in the way I would in the UK, you will know best what works in your part of the world.

I studied your Questionnaire first and so the comments at the end of that are the most pertinent. I would however like to add one other comment that comes from the experience of a secular, if not pagan country. I sense that the theological underpinnings are all Christian (and very Ignatian) for the main part. Given the population and age range you are most likely to be dealing with, this may not be a problem. However, in terms of analysis and interpretation this will be very important.

I wish you every success in the rest of your study.

With all good wishes,

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Tom'.

Tom Keighley
Director of International Development

16, St. John's Street,
Siggiewi.
Malta. QRM 13.

Appendix C.6

29th September, 1999

Mr. Thomas Keaghley
Director of International Development.
School of Health Studies.
University of Leeds,
18, Blenheim Terrace.
Leeds LS2 9HD
U.K.

Spiritual Well-Being, Stress and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role.

Re: Content Validity of Research Tools

Dear Mr. Keaghley,

I would like to thank you for providing me with your fruitful detailed comments on my research tools.

Whilst appreciating your expertise and commitment, I shall take on board your suggestions to enhance the validity of the research study. Thanks for your support.

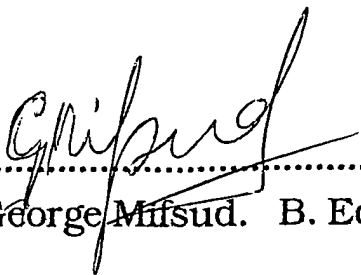
Yours sincerely,


Donia Baldacchino
E-mail Address: cball@ihc.um.edu.mt

**REVIEW OF TRANSLATED INTERVIEW TRANSCRIPTS OF
PATIENTS WITH MYOCARDIAL INFARCTION**

We, the undersigned, reviewed 10 transcripts and their respective translation into English. The translations were found quite faithful and only rarely did we come across a Maltese phrase that had been misunderstood and translated inaccurately. This was, of course, rectified.

Thus we can affirm that reading the interview transcripts in English does not in any way detract from their validity as personal testimonies of the patients' experiences.


.....
Mr. George Mifsud. B. Ed(Hons), M.A. Lit. (Maltese).


.....
Mrs. Mary Lilian Oliva Mifsud. B.A. (Hons) (English), P.G.C.E.

30th July 2001

16, St. John's Street,
Siggiewi.
Malta. QRM 13.

Appendix D.1

7th June, 1999

RELIABILITY TESTING OF RESEARCH INSTRUMENTS

Dear Student,

With reference to my research study on ***Spiritual Well-Being, Stress and Spiritual Coping Strategies of patients with Myocardial Infarction: The Nurse's Role***, I am now in the process of organising the research instruments to meet the aims of the research study. One of the aims to identify the possible relationship between use and helpfulness of spiritual coping strategies and spiritual well-being, stress and personal characteristics of patients with MI.

In order to establish the reliability of the JAREL scale, HSCS scale and HAD scale, which were **translated into Maltese**, statistical analysis through test-retest method will be conducted.

Consequently, may I ask you please to participate in this test-retest process on Tuesday 15th June 12MD, Room 116, first floor. Filling of the questionnaires will take you about 30 minutes. A cold drink will be provided.

Participation is on voluntary basis. However, your contribution will be highly appreciated. Whilst thanking you, I look forward to seeing you on Tuesday 15th June at 12MD.

Yours' sincerely,

Donia Baldacchino
Home Tel.No. (356)468227
IHC Tel. No. 244978 ; IHC Fax No. 244977
E-mail Address: cball@ihc.um.edu.mt

Group.....

Date.....

**INFORMATION
TEST-RETEST OF RESEARCH TOOLS**

1. DEFINITIONS

Religion : the spiritual experience as part of an organised system of beliefs, practices, and knowledge (O'Neill and Kenny 1998).

Coping : cognitive and behavioural efforts, which are constantly changing, to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus and Folkman 1984).

Spirituality : 'my being, my inner person. It is me expressed through my body, my thinking, my feelings, my judgments and creativity.....Through my spirituality, I give and receive love; I respond to and appreciate God, other people, a sunset, a symphony and spring (Stoll 1989p. 6)

2. Completion of Questionnaires:

To mark the questionnaires, it is suggested that you don't take too long over your replies. Your immediate reaction to each item will probably be more accurate than a long thought-out response.

3. For **confidentiality** purposes, **please do not write down your names**. Test-retest questionnaires are matched by the student's code number, Code Numbers and names are kept under strict confidentiality by two lecturers working at the I.H.C..

4. **Participation is voluntary**, but your contribution will be highly appreciated as the reliability tests of the various versions of the scales, could be possible.

THANKS FOR YOUR PARTICIPATION

Donia Baldacchino.
Lecturer in Nursing,
Institute of Health Care, University of Malta.

Appendix D.3

RELIABILITY TEST-RETEST OF THE JAREL Scale, H.A.D. Scale and Visual Analogue Scale (VAS)

CODE NO	NAME	CODE NO	NAME
1		23	
2		24	
3		25	
4		26	
5		27	
6		28	
7		29	
8		30	
9		31	
10		32	
11		33	
12		34	
13		35	
14		36	
15		37	
16		38	
17		39	
18		40	
19		41	
20		42	
21		43	
22		44	

Date:.....

Signature.....

(BACK TRANSLATION VERSION)**Hospital Anxiety and Depression Scale****(Zigmond and Snaith 1983)**

Doctors are aware that emotions play an important part in most illnesses. If your doctor knows about these feelings he will be able to help you more.

This questionnaire is designed to help your doctor to know how you feel. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have been feeling in the past week.

Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought-out response.

TICK [X] ONLY ONE BOX IN EACH SECTION

1. I feel tense and anxious:

<input type="checkbox"/>	All the time
<input type="checkbox"/>	Most of the time
<input type="checkbox"/>	From time to time
<input type="checkbox"/>	Never

2. I still enjoy doing things I did before.

<input type="checkbox"/>	Surely as much.
<input type="checkbox"/>	A little less.
<input type="checkbox"/>	Just a bit
<input type="checkbox"/>	Hardly at all

3. I feel afraid as if something terrible is going to happen:

<input type="checkbox"/>	I feel it very badly.
<input type="checkbox"/>	Yes, but not often
<input type="checkbox"/>	A bit, but it doesn't worry me
<input type="checkbox"/>	Not at all

4. I joke and laugh at the least serious aspect of things:

As much as I possibly can

Not so much now

Surely not now

Not at all

5. Worrying thoughts pass through my mind:

All the time

Most of the time

From time to time, but not often

Sometimes

6. I feel contented:

Never

Not always

Sometimes

Almost all the time

7. I am able to sit down comfortable and feel relaxed:

Always

Often

Not so often

Never

8. I feel I am giving up:

All the time

Very often

Sometimes

Never

9. I feel a sense of fear and I get *butterflies* in my stomach:

<input type="checkbox"/>	Not at all
<input type="checkbox"/>	Sometimes
<input type="checkbox"/>	Often
<input type="checkbox"/>	Very often

10. I have lost all interest in keeping up my personal appearance

<input type="checkbox"/>	I never take notice
<input type="checkbox"/>	I don't take as much notice as I should
<input type="checkbox"/>	I probably don't take any notice
<input type="checkbox"/>	I try my best

11. I feel restless as if I have to keep on going all the time:

<input type="checkbox"/>	Very very much
<input type="checkbox"/>	Quite a lot
<input type="checkbox"/>	Hardly at all
<input type="checkbox"/>	Not at all

12. I look optimistically at things:

<input type="checkbox"/>	As much as before
<input type="checkbox"/>	A little less than before
<input type="checkbox"/>	A lot less than before
<input type="checkbox"/>	Hardly at all

13. Sometimes I feel I don't know what to do with myself:

<input type="checkbox"/>	Always
<input type="checkbox"/>	Often
<input type="checkbox"/>	Not so often
<input type="checkbox"/>	Never

14. I enjoy reading a good book or listening to the radio or watching a television programme

<input type="checkbox"/>	Often
<input type="checkbox"/>	Sometimes
<input type="checkbox"/>	Not always
<input type="checkbox"/>	rarely

THANKYOU FORYOURPARTICIPATION

(BACK TRANSLATION VERSION)

Appendix D.5

JAREL SPIRITUAL WELL-BEING SCALE (Hungelmann et al 1996)

		Strongly agree	Moderately agree	Agree	Disagree	Moderately Disagree	Strongly Disagree
1	Prayer is an important part of my life.						
2	I believe I am spiritually strong.						
3	The more I grow older, the more I feel I am tolerant regarding other people's feelings.						
4	I find sense and purpose in my life.						
5	I feel there is a strong relationship between my spiritual beliefs and what I do.						
6	I believe in another life after death.						
7	When I am ill I feel less strong spiritually.						
8	I believe in a supreme power.						
9	I am able to receive and offer love to others.						
10	I am satisfied with my life.						
11	I make plans for myself.						
12	God hardly makes sense to my life.						
13	I am satisfied by the way I am utilizing my capabilities.						
14	Prayer does not help me in making my decisions.						
15	I am able to appreciate the differences in others.						
16	I feel settled in my life.						
17	I prefer that others make my decisions.						
18	I find it difficult to forgive others.						
19	I accept the situations in which I find myself during my life.						
20	The belief of a supreme being has no place in my life.						
21	I cannot accept change in my life.						

**THE HELPFULNESS OF
SPIRITUAL COPING STRATEGIES SCALE
(H.S.C.S. Scale)**

BACK TRANSLATION VERSION

Read each category well and encircle ☐ the number according to how much you used each spiritual coping strategy and the extent to which you have found them helpful.

AIMS

- To rate on the scale the frequency of use of spiritual coping strategies.
- To rate on the scale the extent to which the respective spiritual method was found helpful to cope with the demands of your life as a student nurse in the past three weeks.

FREQUENCY of the use of the spiritual coping strategies:

- (0) Never used/ Qatt : qatt
- (1) Seldom used/rari : mill-inqas darba fis-sitt xhur/ fis-sena;
- (2) Sometimes used/kultant : mill-inqas darba fix-xahar;
- (3) often used/ta' sikwit : ta' l-inqas darba kuljum / fil-gimgha;

HELPFULNESS of the spiritual coping strategies:

- (X) Not applicable / Ma japplikax;
- (0) Not helpful / ghajnuna ta' xejn;
- (1) Slightly helpful / ta' ftit ghajnuna;
- (2) Fairly helpful / ta' ghajnuna mhux hazin;
- (3) very helpful / ta' ghajnuna kbira

The HELPFULNESS OF SPIRITUAL COPING STRATEGIES scale (H.S.C.S. scale)
IS-SIWI TA' L-UZU TA' STRATEGIJI SPIRITWALI (H.S.C.S.) SCALE

Kemm -il darba jintuzaw: Gatt (0) ; rari (1) ; kultant (2) ; ta' sikwit (3)

Kemm kienu ta' ghajnuna : Ma japplikax (X) ; ghajnuna : xejn (0) ; ftit (1) ; mhux hazin (2) ; hafna (3)

IL-METODI SPIRITWALI (spiritual coping strategies)	KEMM -IL DARBA JINTUZAW (frequency)	KEMM KIENU TA' GHAJNUNA (helpfulness)
1. Praying privately	0 1 2 3	X 0 1 2 3
2. Keeping a relationship with God/supreme being, as a source of strength and hope	0 1 2 3	X 0 1 2 3
3. Building/keeping a relationship with your friends and relatives	0 1 2 3	X 0 1 2 3
4. Praying with someone else or in a group	0 1 2 3	X 0 1 2 3
5. Discussing your difficulties and problems with a person who has suffered a heart attack.	0 1 2 3	X 0 1 2 3
6. Using objects, spiritual or religious icons.	0 1 2 3	X 0 1 2 3
7. Looking at your situation in a positive way.	0 1 2 3	X 0 1 2 3

Kemm -il darba jintuzaw: Qatt (0) ; rari (1) ; kultant (2) ; ta' sikwit (3)

Kemm kien ta' ghajnuna : Ma japplikax (X) ; ghajnuna : xejn (0) ; ffit (1) ; mhux hazin (2) ; hafna (3)

IL-METODI SPIRITWALI (spiritual coping strategies)	KEMM -IL DARBA JINTUZAW (frequency)	KEMM KIENU TA' GHAJNUNA (helpfulness)
8. Utilizing religious music or religious programmes on the radio or T.V.	0 1 2 3	X 0 1 2 3
9. Living day by day, in the hope that the future will be brighter.	0 1 2 3	X 0 1 2 3
10. Using spiritual/religious literature to inspire you spiritually	0 1 2 3	X 0 1 2 3
11. Accepting the situation of having suffered a heart attack	0 1 2 3	X 0 1 2 3
12. Looking for a sense or scope to live in such a difficult situation	0 1 2 3	X 0 1 2 3
13. Enjoying the beauty of art, music, painting and handicrafts....	0 1 2 3	X 0 1 2 3
14. Confiding with your relatives and/or friends	0 1 2 3	X 0 1 2 3

Kemm -il darba jintuzaw: Qatt (0) ; rari (1) ; kultant (2) ; ta' sikwit (3)

Kemm kienu ta' ghajjnuna : Ma japplikax (X) ; ghajjnuna : xejn (0) ; ftit (1) ; mhux hazin (2) ; hafna (3)

IL-METODI SPIRITWALI (spiritual coping strategies)	KEMM -IL DARBA JINTUZAW (frequency)	KEMM KIENU TA' GHAJJNUNA (helpfulness)
15. Frequenting church/place of worship to attend religious practices	0 1 2 3	X 0 1 2 3
16. Using reflection as a means of identifying your own capabilities and strengths.	0 1 2 3	X 0 1 2 3
17. Helping others as a means of delivering love and peace.	0 1 2 3	X 0 1 2 3
18. Trusting in God hoping that the situation will get better.	0 1 2 3	X 0 1 2 3
19. Receiving Holy Communion	0 1 2 3	X 0 1 2 3
20. Enjoy nature, such as the sea, sun, plants, flowers	0 1 2 3	X 0 1 2 3

OTHER SPIRITUAL COPING STRATEGIES:

Kemm -il darba jintuzaw: Qatt (0) ; rari (1) ; kultant (2) ; ta' sikwit (3)

Kemm kienu ta' ghajjnuna : Ma japplikax (X) ; ghajjnuna : xejn (0) ; ffit (1) ; mhux hazin (2) ; hafna (3)

	IL-METODI SPIRITWALI (spiritual coping strategies)	KEMM -IL DARBA JINTUZAW (frequency)	KEMM KIENU TA' GHAJJNUNA (helpfulness)	
21		0 1 2 3	X 0 1 2 3	
22		0 1 2 3	X 0 1 2 3	
23		0 1 2 3	X 0 1 2 3	
24		0 1 2 3	X 0 1 2 3	
25		0 1 2 3	X 0 1 2 3	

Appendix E.1
(PILOT STUDY)

[**Code No: M / F**]

16, St. John's Street,
Siggiewi.
Malta QRM 13

Date...../...../.....

Dear Participant,

I am a nurse lecturer at the University of Malta. I am carrying out a research study on spiritual coping of patients with first heart attack. This small study on 7 patients will help me to test 2 sets of interview questions and the following 5 questionnaires.

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale
- Demographic questionnaire

Please follow the instructions on each questionnaire, which will take you about 45 minutes to complete in all. You are kindly requested to fill in these questionnaires while in hospital, before your discharge. For confidentiality and anonymity purposes, please do not write your name on any questionnaire as only your code number will be used.

On completion of the questionnaires, please use the enclosed self-addressed envelope which will be collected personally before your discharge from hospital.

The 45 minute interview will take place on at

Although your participation is on a voluntary basis, your contribution will be much appreciated in order to fulfil the aims of the research study, that is to explore any possible relationship between spiritual coping and your experience of the heart attack. This will help to improve nursing care.

Whilst thanking you, I look forward to seeing you on I appreciate greatly your comments and suggestions on the Feedback sheet on how to ameliorate the questionnaires and interview. Should you have any difficulties, do not hesitate to contact me on either of the following,

Home: Tel No: 468227
Office Tel No (Institute of Health Care): 2595 1947
Secretary Tel No (Institute of Health Care): 244978
E-Mail: cball@ihc.um.edu.mt

Donia Baldacchino

Lecturer, University of Malta.

Appendix E.1.1
(PILOT STUDY)

[**Code No: M / F**]

16, St. John's Street,
Siggiewi.
Malta QRM 13

Date...../...../.....

Ghaziz Participant,

Jiena Lecturer fin-nursing fl-Universita` ta' Malta. Bhalissa qed naghmel studju fuq kif wiehed jikkumbatti b'mod spiritwali wara l-attakk tal-qalb. F'dan l-istudju zghir, qed nittestja zewg kwalitajiet ta' intervisti u anke dawn il-kwestjonarji fuq 7 pazjenti.

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale
- Demographic questionnaire.

Ipprova imxi mad-direzzjoni ta' fuq kull kwestjonarju. B'kollox jehdulek madwar tlett kwarti beix timlihom kollha. Jekk joghgbok, nitolbok li timla dawn il-kwestjonarji kemm iddum l-isptar, qabel ma tmur id-dar. Biex l-informazzjoni tibqa' sigrieta kemm jista' jkun, jekk joghgbok tiktibx ismek. F'dan l-istudju ser jitnizzel in-numru tieghek biss biex kemm jista' jkun din l-informazzjoni tibqa' anonima.

Meta timla l-kwestjonarji, poggihom fl-envelopp. Imbaghad nigi ghalih jiena.

L-Interview se jkun kif ftehmna, nharfil-.....

Ghalkemm is-sehem tieghek f'dan l-istudju huwa b'mod volontarju, imma l-kontribut tieghek se jkun jiswa hafna. Dan ghaliex se jghin biex naraw hemmx relazzjoni bejn l-ispiritwalita` u l-esperjenza ta' l-attakk tal-qalb. Dan l-istudju se jghin biex titjeb il-kura tal-pazjent fl-isptar.

Fil-waqt li nirringrazzjak bil-quddiem, infakkrek li nerga' narak nhar..... Napprezza hafna il-kummenti tieghek u xi suggerimenti kif jistghu jitbjebu dawn il-kwestjonarji u l-interviews. Tista' tiktibhom jekk joghgbok fuq il-Feedback sheet. Jekk issib xi diffikulta` nitolbok li tikkuntattjani f'dawn:

Home: Tel No: 468227
Office Tel No (Institute of Health Care): 2595 1947
Secretary Tel No (Institute of Health Care): 244978
E-Mail: cball@ihc.um.edu.mt

Donia Baldacchino

Lecturer, University of Malta.

PATIENTS' - PILOT STUDY **Appendix E.2**
FEEDBACK SHEET

1. **X'jidhirlek minn dan l-istudju?**
What do you think about this study?

.....

.....

.....

2. **Taħseb li hemm xi mistoqsijiet li ma kienux ċari biżżejjed?**
To what extent were the questions clear?

.....

.....

.....

3. **Għandek xi suggerimenti x'taġġmel biex l-informazzjoni
tingabar aħjar?** Suggestions to improve the data collection.

.....

.....

.....

.....

.....

.....

.....

.....

.....

[Code No: M / F]

Appendix E.3 (T2)

16, St. John's Street,
Siggiewi.
Malta QRM 13

Date...../...../.....

Dear Participant

Following our meeting during your short stay in C.C.U., where you consented to participate in the nursing research study, please find enclosed the first set of questionnaires as follows,

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- Demographic questionnaire.

Please follow the instructions on each questionnaire, which will take you about 30 minutes to complete in all. You are kindly requested to fill in these questionnaires during the first 2 days (48 hours) following transfer from CCU to the medical ward. For confidentiality and anonymity purposes, please do not write your name on any questionnaire. Since these questionnaires will be compared repeatedly, only your code number will be used.

On completion of the questionnaires, please use the enclosed self-addressed envelope which will be collected personally before your discharge from hospital.

Although your participation is on a voluntary basis, your contribution will be much appreciated in order to fulfil the aims of the research study, that is to explore any possible relationship between spirituality and your experience of the heart attack.

Whilst thanking you, I look forward to seeing you again before you leave hospital, where I shall be giving you the next set of questionnaires (T3) to be completed during the first 2 days on your return home. Should you have any difficulties, I shall be able to help you during my visit or you can contact me on either of the following,

Home: Tel No: 468227
Office Tel No (Institute of Health Care): 2595 1947
Secretary Tel No (Institute of Health Care): 244978
E-Mail: cba1@ihc.um.edu.mt

Donia Baldacchino
Lecturer, University of Malta.

[Code No: M / F]

Appendix E.3.1 (T2)

16, Triq San Gwann,
Siggiewi.
Malta QRM 13

Date...../...../.....

Ghaziz Participant.....,

Kif infurmajtek fic-CCU, fejn inti accettajt li tiehu sehem f'dan l-istudju, ghandek dan il-pakkett b'dawn il-kwestjonarji.

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale
- Demographic questionnaire.

Ipprova imxi mad-direzzjoni ta' fuq kull kwestjonarju. B'kollox jehdulek madwar tlett kwarti biex timlihom kollha. Jekk joghgbok, nitlobok li timla dawn il-kwestjonarji fl-ewwel jumejn wara li tinzel mic-CCU. Biex l-informazzjoni tibqa' sigrieta, jekk joghgbok tiktibx ismek. F'dan l-istudju ser jitnizzel biss in-numru tieghek biex kemm jista' jkun din l-informazzjoni tibqa' anonima.

Meta timla l-kwestjonarji, poggihom fl-envelopp. Imbaghad nigi ghalih jiena.

Ghalkemm is-sehem tieghek f'dan l-istudju huwa b'mod volontarju, imma l-kontribut tieghek se jkun jiswa hafna. Dan ghalix se jghin biex naraw hemmx relazzjoni bejn l-ispiritwalita' u l-esperjenza ta' l-attakk tal-qalb.

Fil-waqt li niringrazzjak bil-quddiem, infakkrek li nerga' narak nhar..... biex naghtik il-pakkett l-iehor (T3). Dawn ghandhom jimtlew, jekk joghgbok fl-ewwel jumejn wara li tmur id-dar. Jekk issib xi diffikulta' nitlobok li tikkuntattjani hawn,

Home: Tel No: 468227
Office Tel No (Institute of Health Care): 2595 1947
Secretary Tel No (Institute of Health Care): 244978
E-Mail: cbal1@ihc.um.edu.mt

Donia Baldacchino

Lecturer, University of Malta.

[Code No: M / F]

Appendix E.4

(T3)

16, St. John's Street,
Siggiewi.
Malta QRM 13

Date...../...../.....

Dear Participant,

Following your completion of the first set of questionnaires while on the medical ward, please find enclosed the second set of questionnaires as follows,

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale

Please follow the instructions on each questionnaire, which will take you about 30 minutes to complete in all. You are kindly requested to fill in these questionnaires during the first 2 days (48 hours) following discharge from hospital(T3). For confidentiality and anonymity purposes, please do not write your name on any questionnaire, as only the code number will be used in the comparison of returned information.

On completion of the questionnaires, please use the enclosed self-addressed envelope which I will then collect personally during the first week after you leave hospital.

Your contribution will be invaluable for this research study, that is, to explore any possible relationship between spirituality and the experience of your heart attack.

Whilst thanking you, I look forward to seeing you again on your return home. Should you have any difficulties, I shall be able to help you during my visit at your home. or you may also contact me on either of the following,

Home: Tel No: 468227

Office Tel No (Institute of Health Care): 2595 1947

Secretary Tel No (Institute of Health Care): 244978

E-Mail: cbal1@ihc.um.edu.mt

Donia Baldacchino
Lecturer, University of Malta.

[Code No: M / F]

Appendix E.4.1 (T3)

16, Triq San Gwann,
Siggiewi.
Malta QRM 13

Date...../...../.....

Ghaziz Participant.....,

Wara s-sehem tieghek permezz ta' l-ewwel sett ta' kwestjonarji u l-interview, issa ghandek dan il-pakkett b'dawn il-kwestjonarji.

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale

Ipprova imxi mad-direzzjoni ta' fuq kull kwestjonarju. B'kollox jehdulek madwar 30 minuta biex timlihom kollha. Jekk joghgbok, nitlobok li timla dawn il-kwestjonarji fl-ewwel jumejn wara li tmur id-dar. Biex l-informazzjoni tibqa' sigrieta, jekk joghgbok tiktibx ismek. F'dan l-istudju ser jitnizzel biss in-numru tieghek biex kemm jista' jkun din l-informazzjoni tibqa' anonima.

Meta timla l-kwestjonarji, poggihom fl-envelopp. Imbaghad nigbru fl-ewwel gimgha wara li tohrog mill-isptar.

Ghalkemm is-sehem tieghek f'dan l-istudju huwa b'mod volontarju, imma l-kontribut tieghek se jkun jiswa hafna. Dan ghalix se jghin biex naraw hemmx relazzjoni bejn l-ispirtwalita` u l-esperjenza ta' l-attakk tal-qalb.

Fil-waqt li niringrazzjak bil-quddiem, infakkrek li nerga' narak meta tkun id-dar.

Jekk issib xi diffikulta` nitlobok li tikkuntattjani hawn,

Home: Tel No: 468227

Office Tel No (Institute of Health Care): 2595 1947

Secretary Tel No (Institute of Health Care): 244978

E-Mail: cba1@ihc.um.edu.mt

Donia Baldacchino

Lecturer, University of Malta.

Code No: M / F

Appendix E.5

(T4)

16, St. John's Street,
Siggiewi.
Malta GRM 13

Date...../...../.....

Dear Participant

Following your completion of the first and second sets of questionnaires, please find enclosed the third set of questionnaires as follows,

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale

Please follow the instructions on each questionnaire, which will take you about 30 minutes to complete in all. For confidentiality and anonymity purposes, please do not write your name on any questionnaires, as only the code number will be used in the comparison of the information given.

You are kindly requested to fill in these questionnaires between/...../..... and/...../.....(the first two days, 6 weeks after discharge from hospital). On completion of the questionnaires, please use the enclosed self-addressed envelope which I will then collect personally during the sixth week after your return home, that is between/...../..... and/...../.....I shall contact you a week before to make an appointment at your convenience.

Furthermore, this study aims at exploring the definition of spiritual well-being by an additional questionnaire which may be filled during any time during the following six weeks. You may send it to me by mail by using the self-addressed stamped envelope or it may be returned with the above set of questionnaires.

Should you have any difficulties, I shall be able to help you during my visit or you may also contact me on either of the following,

Home: Tel No: 468227
Office Tel No (Institute of Health Care): 2595 1947
Secretary Tel No (Institute of Health Care): 244978
E-Mail: cba11@ihc.um.edu.mt

Whilst thanking you, I wish you to get well soon.

Donia Baldacchino
Lecturer, University of Malta.

[Code No: M / F]

Appendix E.5.1 (T4)

16, Triq San Gwann,
Siggiewi.
Malta QRM 13

Date...../...../.....

Ghaziz Participant.....,

Wara s-sehem tieghek permezz ta' l-ewwel sett ta' kwestjonarji u l-interview, issa ghandek it-tielet pakkett b'dawn il-kwestjonarji.

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale

Ipprova imxi mad-direzzjoni ta' fuq kull kwestjonarju. B'kollox jehdulek madwar 30 minuta biex timlihom kollha. Jekk joghgbok, nitlobok li timla dawn il-kwestjonarji fl-ewwel jumejn wara li tmur id-dar. Biex l-informazzjoni tibqa' sigrieta, jekk joghgbok tiktibx ismek. F'dan l-istudju ser jitnizzel biss in-numru tieghek biex kemm jista' jkun din l-informazzjoni tibqa' anonima.

Nitlobok li timlha dawn il-kwestjonarju bejn/...../..... u/...../..... (jigifieri, l-ewwel jumejn, 6 gimghat wara li tkun hrigt mill-isptar. Meta timla l-kwestjonarji, poggihom fl-envelopp. Imbaghad nigbru fis-sitt gimgha wara li tkun hrigt mill-isptar. Dan ikun bejn/...../..... u/...../..... fejn jiena nikkuntattjak qabel biex niftehmu meta tkun tista' li nigi d-dar.

Dan l-istudju ghandu l-iskop ukoll li jara l-opinjoni tieghek fuq xi tfisser li tkun f'sikktek spiritwalment . Allura ghandek kwestjonarju iehor biex timlih tul dan iz-zmien sakemm nigi. Tista' jew tibghatuli bil-posta go l-envelopp li ghandu l-indirizz u l-bolla bil-lest. Jew inkella, nista' nigbru ma' l-ohrajn.

Fil-waqt li nirringrazzjak bil-quddiem, infakkrek li nerga' narak meta tkun id-dar.

Jekk issib xi diffikulta` nitlobok li tikkuntattjani hawn,

Home: Tel No: 468227
Office Tel No (Institute of Health Care): 2595 1947
Secretary Tel No (Institute of Health Care): 244978
E-Mail: cba1@ihc.um.edu.mt

Donia Baldacchino

Lecturer, University of Malta.

[Code No: M / F]

Appendix E.6

(T5)

16, St. John's Street,
Siggiewi.
Malta QRM 13

Date...../...../.....

Dear Participant,

Following completion of the previous sets of questionnaires, please find enclosed the last set of questionnaires as follows,

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale

Please follow the instructions on each questionnaire, which will again take you about 30 minutes to complete them all. For confidentiality and anonymity purposes, please do not write your name on any questionnaires, as only the code number will be used in the comparison of the returned information.

You are kindly requested to fill in these questionnaires between/...../..... and/...../.....(the first 2 days, 13 weeks after discharge from hospital(T5)). On completion of the questionnaires, please use the enclosed self-addressed envelope which I will be collecting personally during the 13th week after discharge, that is between/...../..... and/...../..... I shall contact you the week before to make an appointment at your convenience.

Furthermore, this study aims at exploring the role of the nurse in the delivery of care by an additional questionnaire which may be completed at any time during the following seven weeks. You may send it to me by mail by using the self-addressed stamped envelope or it may be collected with the above set of questionnaires.

Should you have any difficulties, I shall be able to help you during my visit or you may also contact me on either of the following,

Home: Tel No: 468227
Office Tel No (Institute of Health Care): 2595 1947
Secretary Tel No (Institute of Health Care): 244978
E-Mail: cba11@ihc.um.edu.mt

Whilst thanking you, I wish you a speedy recovery.

Donia Baldacchino
Lecturer, University of Malta.

[Code No: M / F]

Appendix E.6.1 (T5)

16, Triq San Gwann,
Siggiewi.
Malta QRM 13

Date...../...../.....

Ghaziz Participant.....,

Wara s-sehem tieghek permezz ta' l-ewwel sett ta' kwestjonarji u l-interview, issa ghandek l-ahhar pakkett b'dawn il-kwestjonarji.

- HAD scale
- JAREL SWB scale
- VAS SWB scale
- HSCS scale

Ipprova imxi mad-direzzjoni ta' fuq kull kwestjonarju. B'kollox jehdulek madwar 30 minuta biex timlihom kollha. Jekk joghgbok, nitlobok li timla dawn il-kwestjonarji fl-ewwel jumejn wara li tmur id-dar. Biex l-informazzjoni tibqa' sigrieta, jekk joghgbok tiktibx ismek. F'dan l-istudju ser jitnizzel biss in-numru tieghek biex kemm jista' jkun din l-informazzjoni tibqa' anonima.

Nitolbok li timla dawn il-kwestjonarju bejn/...../..... u/...../.....(jigifieri, l-ewwel jumejn, tlett xhur wara li tkun hrigt mill-isptar(T5). Meta timla l-kwestjonarji, poggihom fl-envelopp. Imbagħad nigrub fit-tielet xhur wara li tkun hrigt mill-isptar. Dan ikun bejn/...../..... u/...../..... fejn jiena nikkuntattjak gingha qabel biex niftehmu meta tkun tista' nigi d-dar.

Dan l-istudju għandu l-iskop ukoll li jara l-opinjoni tieghek fuq ir-rwol tan-ners fil-kura tal-pazjent. Allura għandek kwestjonarju iehor biex timlih tul dawn is-seba' gimghat. Tista' jew tibghatuli bil-posta go l-envelopp li għandu l-indirizz u l-bolla bil-lest. Jew inkella, nista' nigrub ma' l-ohrajn.

Fil-waqt li niringrazzjak bil-quddiem, infakkrek li nerga' narak meta tkun id-dar. Jekk issib xi diffikulta` nitlobok li tikkuntattjani hawn,

Home: Tel No: 468227
Office Tel No (Institute of Health Care): 2595 1947
Secretary Tel No (Institute of Health Care): 244978
E-Mail: cbal1@ihc.um.edu.mt

Donia Baldacchino

Lecturer, University of Malta.

[Code No: M / F]

Appendix E.7

16, St. John's Street,
Siggiewi.
Malta QRM 13

Date...../...../.....

Dear Participant,

I would like to inform you that the interview, done few weeks ago on your experience of the heart attack and spiritual coping, was transcribed. This was done by the help of the notes that I wrote during the interview and its recording.

Therefore, could you kindly check the extent to which it reflects the content of the interview.

I would appreciate that you send me this information in the self-addressed stamped envelope. If you feel the need to make any amendments, please write them on the same script. This will help in the validity of the invaluable information derived from your experience of the heart attack.

I would like to remind you that measures are being taken to ensure that any information you have volunteered will remain anonymous and confidential as much as possible. On completion of this study, the recording tape will be erased. When the final report will be completed, I shall send you a copy of the results. Only the code number will be used. No names will be included.

I thank you very much for your cooperation. I hope to receive the script within two weeks, that is, by/...../..... Although this script will remind you of your past experience, I recommend you to look at this event positively. I'm sure that you have learnt a lot and achieved a lot from this experience.

Whilst thanking you, I wish you all the best for your recovery. I send my best regards to you and to your family.

Donia Baldacchino
Lecturer, University of Malta.

16, Triq San Gwann,
Siggiewi,
Malta QRM 13.

Appendix E.7.1

Data/...../.....

Għażiż/a Partecipant/a.....,

Nixtieq ninfurmak li dik l-intervista li għamilna flimkien ftit ġimghat ilu fuq l-esperjenza tiegħek u l-użu tal-metodi biex tikkumbatti mal-problemi li jinqalghu wara l-attakk tal-qalb, issa nkiteb minni. Dan sar bl-għajnuna tan-noti li jiena ktibt waqt li konna nitkellmu kif ukoll billi smajt ir-*recording* ta' l-intervista ta' bejnietna.

Għalhekk issa nitolbok, jekk jogħġbok, biex taqrah sewwa u tara li dan jirrifletti dak kollu li tkellimna flimkien. Għalkemm għaddew ftit tal-ġimghat, naħseb li tista' tiftakar din id-diskursata.

Napprezza hafna jekk tgharrafni fuq il-qbil tiegħek fuq dak li tkellimna billi tibghatli lura bil-posta l-*iscript* fl-envelopp mehmuz li għandu l-bolla u l-indirizz tiegħi bil-lest. Jekk jidhirlek li tixtieq tagħmel xi tibdil, ibghathomli bil-miktub fuq l-istess *script* x'tixtieq tirranga. Dan ix-xogħol jgħin għall-validita' ta' l-informazzjoni imprezzabbli li harget mill-esperjenza tiegħek.

Nixtieq infakkrek li se jintuza kull mezz possibbli biex kull informazzjoni tiegħek tibqa' anonima u kunfidenzjali kemm jista' jkun. Wara li jispiċċa dan l-istudju, t-*tape* ta' dan l-intervju jiġi mhassar. Meta jitlesta r-rapport finali ta' dan l-istudju, bil-ħsieb li nibghatlek kopja tar-rizultati ta' din ir-riċerka fejn ser jidhru biss in-numri bil-kodiċi u mhux l-ismijiet tal-klijenti.

Filwaqt li nirringrazzjak tal-koperazzjoni tiegħek, nittama li nircievi lura l-*iscript* minghandek fi żmien ġimghatejn oħra, jiġifieri sal-...../...../..... Għalkemm dan l-*iscript* se jerga' jfakkrek fl-esperjenza diffiċli tiegħek, imma tajjeb li thares lejn il-pożittiv. Żgur li tghallimt u akkwistajt hafna għal saħħtek minn din l-esperjenza. Grazzi u awguri biex timxi 'l quddiem f'saħħtek. Inselli għalik u għall-familjari tiegħek.

Donia Baldacchino.
Lecturer,
Universita' ta' Malta.

CLIENTS' FEEDBACK ON VALIDITY OF INTERVIEW TRANSCRIPTS

I confirm the content of the transcript
as authentic. It reflects all that was said during the interviews with
Miss Donia Baldacchino, regarding my experience of heart attack.

I made amendments on the same transcript.

Yes

☐

No

☐

Client's signature

Date...../...../.....

Resercher's signature

Date...../...../.....

[Code No: M / F]

FEEDBACK
fuq il-kontenut tat-
transcript ta'l-intervisti

Jiena naqbel li dak kollu li hemm
 miktub fuq it-transkript, jirrifletti d-diskursata li kelli ma' Miss
 Donia Baldacchino, fuq l-esperjenza tieghi wara l-attakk tal-qalb.

Jiena ghamilt xi emendi fuq l-istess transkript ta' l-intervista.

Iva

Le

Firma tal-Klijent

Data...../...../.....

Firma tar-Resercher

Data...../...../.....

Appendix E.9

16, St. John's Street,
Siggiewi. QRM 13.

Date...../...../.....

Dear

Now that we have finished the collection of information about your MI experience, I would like to thank you for your valid contribution to this research. I really appreciated the fact that you accepted my invitation to talk about your experience.

Moreover rest assured that every means has been used to ensure that any information you have volunteered has remained anonymous and confidential. On completion, your contribution along with that of another 69 clients, will be collected together in a report which will be published by both the University of Malta and the University of Hull, Yorkshire, UK. This will be available for everyone interested. Later on I intend to send you a copy of the results of this research where there will be only the code numbers and no names. So I suggest that you remember your code number which is

Although this study has made you recollect an unpleasant event, it is these experiences that often teach us and help us adapt to what life has in store for us. May you face the future with determination.

Hopefully, this study will be an asset for the holistic care of patients and thus your contribution has been invaluable. I send my regards to you and your family.

Thank you.

Donia Baldacchino
Lecturer, University of Malta.

Appendix E.9.1

16, Triq San Gwann,
Siggiewi.
Malta. QRM13.

Data...../...../.....

Għażiż/a.....,

Issa li ġejna fi tmiem il-ġbir ta' l-informazzjoni fuq l-esperjenzi tiegħek waqt u wara l-esperjenza li kellek, nixtieq nirringrazzjak tal-kontribut sħiħ tiegħek f' din ir-riċerka. Apprezzajt hafna li lqajt l-istedina tiegħi biex nitkellmu flimkien fuq din l-esperjenza.

Nixtieq inkompli nserrahlek moħħok billi ngħidlek li se nuża kull mezz possibbli biex kull informazzjoni li tajt tibqa' anonima u kunfidenzjali kemm jista' jkun. Fl-aħħarta' dan l-istudju, l-informazzjoni tiegħek, flimkien ma' dik mogħtija minn 69 klijent ieħor/oħra, ser jingabru f' rapport li se jiġi ppubblikat mill-Universita' ta' Hull, Yorkshire, U.K. u mill-Universita' ta' Malta. Dan ikun disponibbli li jinqara minn kulhadd. 'Il quddiem bil-ħsieb li nibgħatlek kopja tar-riżultati ta' din ir-riċerka fejn ser jidhru biss in-numri ta' kodici u mhux ismijiet. Għalhekk nissuggerilek li tajjeb li tibqa' tiftakar in-numru personali tiegħek li huwa.....

Għalkemm dan l-istudju għgħlek tiftakar fl-esperjenza iebsa tiegħek, nixtieq infakkrek li l-esperjenzi fil-ħajja jistghu jgħallmuna u jgħhinuna biex naddattaw ruħna skond il-bżonn. Fil-waqt li nfakkrek fil-qawl Malti, "il-kuraġġ nofs il-fejqa", nawguralek li żżomm sħiħ fid-determinazzjoni tiegħek għall-futur.

Huwa ttamat li dan l-istudju jgħhin fil-kura sħiħa tal-klijenti. Għalhekk is-sehem tiegħek kien ta' importanza kbira. Inselli għalik u għall-familjari tiegħek. Grazie.

Donia Baldacchino

Lecturer l-Universita' ta' Malta.

Home: Tel No: 468227

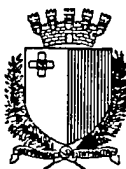
Office Tel No (Institute of Health Care): 2595 1947

Secretary Tel. No. (Institute of Health Care): 244978

E-Mail: cba1@ihc.um.edu.mt

**DIPARTIMENT TA'
L-INFORMAZZJONI FUQ IS-SAHHA**

Indirizz postali:
95, Guardamangia Hill, Guardamangia MSD 08
MALTA



**Appendix F.1
DEPARTMENT OF
HEALTH INFORMATION**

Postal address:
95, Guardamangia Hill, Guardamangia MSD 08
MALTA

Our Ref.:
Your Ref.:

Tel: (+356) 234915
Fax: (+356) 235910

19 February, 1999

**Ms Donia Baldacchino
Institute of Health Care**

The information you requested is the following:

Year of Admission	Number of cases
1996	393
1997	325
1998	365

These counts were performed on files in the Hospital Activity Analysis database held in this department. The database holds information about admissions to St. Luke's Hospital *reported* to this department by the wards concerned. The number includes cases with a diagnosis coded as ICD-9 code "410".

Regards

Dr. Joe M. Pace MD

Admissions to St. Luke's Hospital with a recorded discharge diagnosis of acute myocardial infarction (ICD-9 Code: 4100, ICD-10 Code: I21)

Source: Hospital Activity Analysis Database, Dept. of Health Information

1996

Age group (years)	Males	Females	Total
30-39	9	-	9
40-49	41	2	43
50-59	63	9	72
60-69	84	43	127
70-79	82	51	133
80-89	20	31	51
90+	2	3	5
Unspecified	6	2	8
Total	307	141	448

1997

Age group (years)	Males	Females	Total
20-29	1	-	1
30-39	6	-	6
40-49	22	4	26
50-59	55	8	63
60-69	66	37	103
70-79	55	62	117
80-89	15	26	41
90+	3	3	6
Unspecified	6	-	6
Total	229	140	369

1998

Age group (years)	Males	Females	Total
10-19	1	-	1
20-29	1	1	2
30-39	5	1	6
40-49	28	5	33
50-59	76	11	87
60-69	88	32	120
70-79	55	52	107
80-89	17	29	46
90+	1	2	3
Unspecified	1	-	1
Total	273	133	406

1999

Age group (years)	Males	Females	Total
10-19	1	-	1
20-29	1	-	1
30-39	4	-	4
40-49	18	1	19
50-59	51	9	60
60-69	64	35	99
70-79	50	41	91
80-89	9	20	29
90+	-	1	1
Unspecified	1	2	3
Total	199	109	308

2000*

Age group (years)	Males	Females	Total
30-39	3	1	4
40-49	13	-	13
50-59	31	4	35
60-69	44	12	56
70-79	26	22	48
80-89	9	9	18
90+	1	-	1
Unspecified	2	-	2
Total	129	48	177

2001**

Age group (years)	Males	Females	Total
20-29	1	-	1
30-39	4	-	4
40-49	22	2	24
50-59	39	9	48
60-69	32	22	54
70-79	40	46	86
80-89	12	20	32
90+	-	6	6
Unspecified	1	1	2
Total	151	106	257

	1996	1997	1998	1999	2000	2001**
Admissions to St. Luke's Hospital	40 845	40 648	45 011	43 616	41 223	39531
Admissions to medical wards	8 465	8 302	10 424	10 901	8 966*	8855

* N.B. The figures for 2000 may not be truly representative of the number of admissions due to MI as the returns of HAA forms were lower than previous years. When compared with the total number of admissions to medical wards, there were 68% which had an HAA form filled. In 1999 the response rate was 81%.

** Data for 2001 is still provisional. Again the percentage of medical admissions having an HAA form filled in 2001 was 69%.

SAMPLE RECRUITMENT CHECKLIST

[Code M / F No.....]

1. Age..... years
2. Date of Admission to CCU/...../.....
3. Date of Transfer to Med Ward/...../.....
4. Date of Discharge/...../.....
5. **Medications:**

Treatment BEFORE MI	Treatment on MEDICAL Ward	Treatment on DISCHARGE

6. **Characteristics of MI**

- a) **Myocardial Ischaemic pain** of more than 30 minutes' duration

.....

- b) **E.C.G. modifications:**

- new Q waves (less or equal to 0.04)

.....

- ST-segment elevations or depressions in at least 2 leads

ST elevations.....

ST depressions.....

- c) **Serum Enzyme Elevations:**

Creatinine phosphokinase (CPK) level elevated more than twice the upper limit of normal (normal level : 10-195 IU/l).

CPK level:/...../..... Admission to CCU:IU/l

7. **Location of MI:** ☐ Anterior ☐ Posterior
☐ Inferior ☐ Lateral
☐ Other

8. **Past Cardiac Diseases:**

Ischaemic Heart Disease.....
 Anginal attacks
 Others.....

9. **Ability to participate in the study**

- ☐ Willing to participate ☐ Mental Test Score
☐ Able to hear a normal or emphasised speaking voice
☐ Able to communicate in a meaningful conversation
☐ Read a large-print words
☐ Other

10. **Treatment post discharge**

Treatment at 6 weeks	Treatment at 13 weeks

Appendix F.2

MENTAL TEST SCORE

CODE - F / M No.....

PROTOCOL

Score (1) point for each good answer;
Score (0) points for a wrong / no answer;
Score (1/2) point to questions No 2, 7, 10;
Maximum score is (10) points.

	INFORMATION	SCORE
1	Age	
2	Date of birth	
3	Month	
4	Year	
5	Place orientation	
6	Time (morning, afternoon, evening, night)	
7	Recall address (e.g. 15, Merchants Street, Valletta)	
8	Dates of World War II	
9	Present Archbishop / President	
10	Count backwards 20 - 1	
	TOTAL	

REFERENCES

Jitapunkul S., Pillay I., Ebrahim S. (1991) The abbreviated Mental Test: its use and validity. *Age Aging* 20 :332 - 336.

Hodkinson H.M. (1972) Evaluation of a mental test score for assessment of mental impairment in the elderly. *Age Aging* 1 :233 - 238

SELECTION OF CLIENTS' SAMPLE

ALTERNATE	DATE OF ADM	FEM / MALE	AGE	CPK-IU/I	CODE NO
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -
YES	/ /	FEM / MALE	yrs	IU/I	F / M
NO	/ /	FEM / MALE	yrs	IU/I	A -

CLIENTS' EXCLUSION FROM SAMPLE

CODE NO	DATE OF ADM	FEM / MALE	AGE	CPK-IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I
E -	/ /	FEM / MALE	yrs	IU/I

Appendix F.5

CLIENTS' INFORMED CONSENT

The aim of this study is to investigate how spirituality can aid people to face problems which crop up following a heart attack. It is hoped that the result of this research will help in the care of patients.

The information from clients will be collected in five different times, during the three months following the heart attack; i.e. in C.C.U. (T1), in the medical ward (T2), after discharge from hospital (T3), 6 weeks after discharge (T4) and after a further 7 weeks (T5). About 4 questionnaires are to be filled in during different times after discharge from C.C.U. which take around half an hour in all. In the medical ward and during the first week after discharge from hospital, there will be two interviews which will take half an hour each. These will be recorded on tape if the client accepts.

Every means will be used to ensure that information will remain confidential and anonymous and therefore no names will appear. On termination of this study the questionnaires will be shredded and the tapes erased. At the end, your contribution to the study will be collected in a report which may contain quotations but never any names. This will be published by the University of Hull, Yorkshire, U.K. and by the University of Malta and is thus available to everyone.

Patients are free to refuse to participate or continue to collaborate in this research. Their decision will in no way affect the care they receive now or in the future. Although your participation is voluntary it would be greatly appreciated. Thank you.

Donia Baldacchino.
Lecturer, University of Malta.

CLIENTS' CONSENT

I, volunteer to
participate in this research study according to the
written information given to me by the researcher.

Client's signature.....

Researcher's signature.....

DATE...../...../.....

[F / M No.....]

L-INFORMAZZJONI U IL-KUNSENS TAL-KLIJENT
CLIENT'S INFORMED CONSENT

(T1)

L-iskop ta' dan l-istudju huwa li jigi nvestigat kif l-ispiritwalita` tista' tghin lill-persuna biex tikkumbatti mal-problemi li jinqalghu wara l-attakk tal-qalb. Huwa ttamat li r-rizultat ta' dan l-istudju jghin fil-kura tal-pazjent.

L-informazzjoni mill-klijent ser tingabar f'hames darbiet matul it-tlett xhur ta' wara l-attakk tal-qalb, jigfieri, meta l-klijent ikun fis-C.C.U.(T1), fis-sala tal-medicina(T2), wara l-hrug mill-isptar(T3), 6 gimghat wara l-hrug (T4) u wara 13-il gimghat ohra wara l-hrug mill-isptar (T5). Madwar 4 kwestjonarji se jimtlew f'hini jiet differenti wara il-hrug mis-CCU, li jiehd madwar nofs siegha b'kollox. Fis-sala tal-medicina u fl-ewwel gimgha wara l-hrug mill-isptar, se jsiru zewg intervisti, li jiehd madwar nofs siegha kull wahda. Jekk inti taççetta, dawn l-intervisti ser jigu rrekordjati fuq it-*tape recorder* biex l-informazzjoni tingabar ahjar.

Ser jintuza kull mezz possibbli biex l-informazzjoni tibqa' anonima, u ghalhekk mhux se jitnizzlu jew jissem mew ismijiet ta' klijenti u t-tejps jibqghu anonimi. Wara li jispiçca l-istudju, il-kwestjonarji jinharqu u t-*tapes* jithassru. Fl-ahhar ta' l-istudju, l-informazzjoni tieghek , tingabar f'rapport, li jista' jkun fih kwotazzjonijiet minghajr ismijiet tal-klijenti. Dan ir-rapport jigi ppubblikat mill-Universita` ta' Hull, Yorkshire, U.K. u mill-Universita` ta' Malta, u jkun disponibbli li jinqara minn kulhadd.

Il-klijenti huma liberi li jirriffjutaw li jiehd sehem jew jieqfu milli jkomplu jiehd sehem f'dan l-istudju. Din id-deçizjoni ma taffettwa bl-ebda mod il-kura prezenti jew futura tal-klijent. Ghalkemm is-sehem tieghek huwa volontarju, napprezza hafna l-partecipazzjoni tieghek f'din ir-ricerka. Grazie.

Donia Baldacchino

Lecturer

Universita` ta' Malta.

IL-KUNSENS TAL-KLIJENT

Jiena naċċetta li niehu sehem f'dan

I-istudju bħala voluntier, taht il-kundizzjonijiet moghtija lili bil-miktub.

FIRMATAL-KLIJENT

FIRMATAR-RIĈERKATUR

DATA...../...../.....

[**F / M No.....**]

Appendix G.1

TAQSIMA D : TAGHRIF FUQEK INNIFSEK

SECTION D : Demographic Data: (Please tick [X] where appropriate)

1. Gender / Ġens: male / raġel ☐ female / mara ☐
2. Age / Eta`..... years / snin
3. What is your marital status? / X'inhw l-istat tiegħek?

<input type="checkbox"/> single / waħdek	<input type="checkbox"/> married / miżżewweġ / a
<input type="checkbox"/> widow/er / armel/armila	<input type="checkbox"/> others / oħrajn
4. What is your **present** occupation? / F'hiex taħdem?
full-time
part-time

<input type="checkbox"/> unemployed / bla xogħol	<input type="checkbox"/> retired / irtirat
--	--
5. How many years of **education** did you undertake?
Kemmil sena ta' edukazzjoni kellek?
..... years in the Primary school / Skola Primarja
..... years in the Secondary school / Skola Sekondarja
..... years in the Higher secondary / Sekondarja Għolja
..... years in the Sixth Form / Sixth Form
..... years in the Tertiary school / Edukazzjoni Terzjarja
..... years in others / oħrajn
.....
- 6.1. Do you belong to any religious affiliation?
Inti membru ta' xi poplu/ghaqda ta' religjon? yes ☐ no ☐
- 6.2. If yes, to which religious affiliation do you belong ?
Jekk iva, ta' liema poplu/ghaqda ta' religjon inti membru?
.....

7.1. *Do you have a personal relationship with God?*
Għandek relazzjoni personali ma' Alla?

yes ☐ no ☐ uncertain ☐

7.2. *Jekk iva, spjega din ir-relazzjoni / If yes, describe this relationship.*

.....
.....

7.3. *How often did you use to go to church / place of worship for religious practices?* Kemm-il darba tmur fil-knisja / post ta' talb għall-attivitajiet reliġjużi?

- ☐ *VERY OFTEN, at least once daily*
BOSTA DRABI, ta' l-inqas darba kuljum
- ☐ *OFTEN, at least once a week*
SPISS, ta' l-inqas darba fil-gimgha
- ☐ *OCCASIONALLY, at least once a month*
KULTANT, mill-inqas darba fix-xahar
- ☐ *RARELY, at least once per six months*
RARI, mill-inqas darba kull sitt xhur
- ☐ *VERY RARE, at least once per year*
RARI HAFNA, ta' l-inqas darba fis-sena
- ☐ *NEVER / QATT*

8.1. *Do you live alone?* / Inti tghix wahdek? yes ☐ no ☐

8.2. *Do you have any significant others/ friends with whom you keep in contact?* / Għandek xi qrafa jew hbieb tal-qalb li magħhom iżżomm kuntatt?
yes ☐ no ☐

8.3. *Where do you reside?* Fejn toqghod?

- ☐ *at home / id-dar*
- ☐ *at your relatives'/ friends' house / Għand il-qrafa / hbieb*
- ☐ *in an institution / f'istituzzjoni*
- ☐ *others / ohrajn*

GRAZZI TAS-SEHEM TIEGHEK
THANK YOU FOR YOUR PARTICIPATION

Patients' interview schedule

SECTION 1 : TIME OF ACUTE HEART ATTACK

SECTION 2 : TRANSFER TO THE MEDICAL WARD

SECTION 3 : DEFINITION OF SPIRITUALITY / SPIRITUAL WELL-BEING

- 3.1. Xi tfisser ghalik il-kelma *spiritwalita`* ?
What does the term spirituality imply for you?
- 3.2. X'tifhem bil-frazi *thossok f'sikktek spiritwalment* ?
What do you understand by the term spiritual well-being ?

SECTION 4 : DEFINITION AND EXPERIENCE OF SPIRITUAL DISTRESS

SECTION 5 : NURSES' ROLE IN MEETING SPIRITUAL NEEDS

SECTION 6 : POSSIBLE IMPACT OF MI ON LIFE

JAREL SCALE : SPIRITUAL WELL-BEING (original version)

Please circle the choice that best describes how much you agree with each statement. Circle only ONE answer for each statement. There is no right or wrong answer.

	Strongly Agree	Moderately Agree	Agree	Disagree	Moderately Disagree	Strongly Disagree
1. Prayer is an important part of my life.	SA	MA	A	D	MD	SD
2. I believe I have spiritual well-being.	SA	MA	A	D	MD	SD
3. As I grow older, I find myself more tolerant of others' beliefs.	SA	MA	A	D	MD	SD
4. I find meaning and purpose in my life.	SA	MA	A	D	MD	SD
5. I feel there is a close relationship between my spiritual beliefs and what I do.	SA	MA	A	D	MD	SD
6. I believe in an afterlife.	SA	MA	A	D	MD	SD
7. When I am sick I have less spiritual well-being.	SA	MA	A	D	MD	SD
8. I believe in a supreme power.	SA	MA	A	D	MD	SD
9. I am able to receive and give love to others.	SA	MA	A	D	MD	SD
10. I am satisfied with my life.	SA	MA	A	D	MD	SD
11. I set goals for myself.	SA	MA	A	D	MD	SD
12. God has little meaning in my life.	SA	MA	A	D	MD	SD
13. I am satisfied with the way I am using my abilities.	SA	MA	A	D	MD	SD
14. Prayer does not help me in making decisions.	SA	MA	A	D	MD	SD
15. I am able to appreciate differences in others.	SA	MA	A	D	MD	SD
16. I am pretty well put together.	SA	MA	A	D	MD	SD
17. I prefer that others make decisions for me.	SA	MA	A	D	MD	SD
18. I find it hard to forgive others.	SA	MA	A	D	MD	SD
19. I accept my life situations.	SA	MA	A	D	MD	SD
20. Belief in a supreme being has no part in my life.	SA	MA	A	D	MD	SD
21. I cannot accept change in my life.	SA	MA	A	D	MD	SD

Appendix G.3

Reference: Hungelmann J.A., Kenkel-Rossi E., Klassen L., Stollenwerk R.M. (1996) Focus on Spiritual Well-Being: Harmonious Interconnectedness of Mind-Body-Spirit -Use of the JAREL Spiritual Well-Being Scale. *Geriatric Nursing*, Nov/Dec: 262-266.

JAREL SCALE : SPIRITUAL WELL-BEING (Hungelmann et al 1996)

Please read the following statements and then tick [X] each statement, stating the extent to which you agree or disagree with the following statements regarding your present state of spiritual well-being.

Aqra sewwa kull kategorija u immarka [X] t-twegibiet tieghek, skond dak li tahseb fuq l-istat tal-hajja spiritwali tieghek fil-prezent. ISSA.

Strongly agree	[NH]	Naqbel hafna
Moderately agree	[NMH]	Naqbel mhux hazin
Agree	[NF]	Naqbel ftit
Disagree	[MNF]	Ma naqbilx ftit
Moderately Disagree	[MTN]	Ma tantx naqbel
Strongly Disagree	[MNX]	Ma naqbel xejn

Reference:

Hungelmann JA, Kenkel-Rossi E, Klassen L, Stollenwerk RM. (1996)
Focus on Spiritual Well-Being: Harmonious Interconnectedness of Mind-Body-Spirit -Use of the JAREL Spiritual Well-Being Scale. *Geriatric Nursing*, Nov/Dec: 262-266.

JAREL SPIRITUAL WELL-BEING Scale (Hungelmann et al 1985)

		Naqbel hafna	Naqbel mhux hazin	Naqbel ffit	Ma naqbilx ffit	Ma tantx naqbel	Ma naqbel xejn
1	It-Talb huwa parti importanti f' hajti	NH	NMH	NF	MNF	MTN	MX
2	Nemmen li jiena b'sahhti spiritwalment	NH	NMH	NF	MNF	MTN	MX
3	Aktar ma nikber, aktar qed inhossni li nittollera it-twemmin ta' haddiehor	NH	NMH	NF	MNF	MTN	MX
4	Insib sens u skop fil-hajja tieghi	NH	NMH	NF	MNF	MTN	MX
5	Inhoss li hemm relazzjoni qawwija bejn it-twemmin spiritwali tieghi u dak li naghmel	NH	NMH	NF	MNF	MTN	MX
6	Nemmen f'hajja ohra wara l-mewt	NH	NMH	NF	MNF	MTN	MX
7	Meta nkun marid, inhossni inqas b'sahhti spiritwalment	NH	NMH	NF	MNF	MTN	MX
8	Nemmen f'qawwa suprema	NH	NMH	NF	MNF	MTN	MX
9	Jiena kapaci nircievi u naghti l-imhabba lill-ohrain	NH	NMH	NF	MNF	MTN	MX
10	Jiena sodisfatt/ a b'hajti	NH	NMH	NF	MNF	MTN	MX
11	Naghmel pjaniijiet ghalija nnfisi	NH	NMH	NF	MNF	MTN	MX
12	Alla ffit li xejn jaghmel sens f'hajti	NH	NMH	NF	MNF	MTN	MX
13	Jiena sodisfatt/ a bil-mod li qed nuza l-kapacitajiet tieghi	NH	NMH	NF	MNF	MTN	MX
14	It-talb ma jghinix biex niehu d-decizjonijiet tieghi	NH	NMH	NF	MNF	MTN	MX
15	Kapaci napprezza d-differenzi fl-ohrain	NH	NMH	NF	MNF	MTN	MX
16	Inhossni f'posti fil-hajja	NH	NMH	NF	MNF	MTN	MX
17	Nippreferi li haddiehor jiehu d-decizjonijiet ghalija	NH	NMH	NF	MNF	MTN	MX
18	Insibha bi tqila hafna li nahfer lil haddiehor	NH	NMH	NF	MNF	MTN	MX
19	Naccetta s-sitwazzjonijiet ta' hajti	NH	NMH	NF	MNF	MTN	MX
20	It-twemmin f'xi hadd suprem m'ghandux post f'hajti	NH	NMH	NF	MNF	MTN	MX
21	Ma nistax naccetta bidla f'hajti	NH	NMH	NF	MNF	MTN	MX

[Code No M/F No.....]

4 / 6. Nemmen f'ħajja oħra wara l-mewt
I believe in an afterlife

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

5 / 7. Meta nkun marid, inhossni inqas b'saħħti spiritwalment
When I am sick I have less spiritual well-being

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

6 / 8. Nemmen f'qawwa suprema
I believe in a supreme power

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

7 / 12. Alla f'tit li xejn jagħmel sens f'ħajti
God has little meaning in my life

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

8 / 9. Jiena kapaci nircievi u nagħti l-imħabba lill-oħrajn
I am able to receive and give love to others

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

9 / 14. **It-talb ma jgħinix biex nieħu d-deċiżjonijiet tiegħi**
Prayer does not help me in making decisions

|-----|

naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

10 / 10. Jiena sodisfatt/a b'ħajti
I am satisfied with my life

|-----|
naqbel hafna ma naqbel xejn
strongly agree *strongly disagree*

11 / 2. Nemmen li jien f'sikkti spiritwalment
I believe I have spiritual well-being

|-----|
 naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

12 / 11. Nagħmel pjanijiet għaliġa nnifsi
I set goals for myself

|-----|

naqbel hafna ma naqbel xejn
strongly agree *strongly disagree*

13 / 24. *I find meaning and purpose in my life*
Insib sens u skop fil-ħajja tiegħi

|-----|

naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

14 / 21. **Ma nistax naċċeta bidla f'ħajti**
I cannot accept change in my life

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

15 / 13. **Jiena sodisfatt/a bil-mod li qed nuża l-kapaċitajiet tiegħi**
I am satisfied with the way I am using my abilities

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

16 / 15. **Kapaċi napprezza d-differenzi fl-oħrajn**
I am able to appreciate differences in others

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

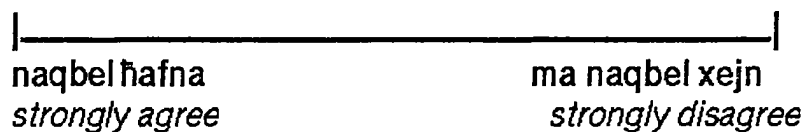
17 / 16. **Inħossni f'posti fil-ħajja**
I am pretty well put together

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

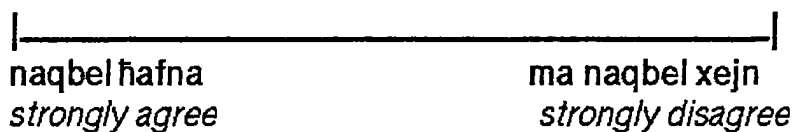
18 / 19. **Naccetta s-sitwazzjonijiet ta' ħajti**
I accept my life situations

|-----|
naqbel ħafna ma naqbel xejn
strongly agree *strongly disagree*

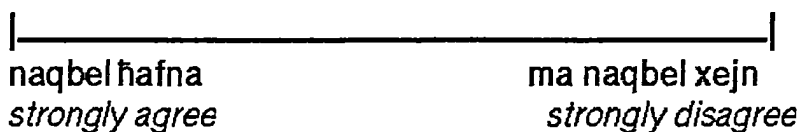
19 / 17. Nippreferi li ħaddieħor jieħu d-deċizjonijiet għalija
I prefer that others make decisions for me



20 / 18. **Insibha bi tqila li naħfer lil ħaddieħor**
I find it hard to forgive others



21 / 20. It-twelmin f'xi hadd suprem m'ghandux post f'hajti
Belief in a supreme being has no part in my life



Hospital Anxiety and Depression Scale

(Zigmond and Snaith 1983)

Appendix G.5

Doctors are aware that emotions play an important part in most illnesses.

If your doctor knows about these feelings, he will be able to help you more.

The questionnaire is designed to help your doctor to know how you feel. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have been feeling in the past week.

Do not take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.

1. I feel tense or wound up :

Most of the time

A lot of the time

Time to time-Occasionally

Not at all

8. I feel as if I am slowed down

Nearly all the time

Very often

Sometimes

Not at all

2. I still enjoy the things I used to enjoy :

Definitely as much

Not quite so much

Only a little

Hardly at all

9. I get a sort of feeling, like butterflies in stomach

Not at all

Occasionally

Quite often

Very often

3. I get a sort of frightened feeling as if

something awful is about to happen :

Very definitely and quite badly

Yes, but not too badly

A little, but it doesn't worry me

Not at all

10. I have lost interest in my appearance

Definitely

I don't take much care as I should

I may not take quite as much care

I take just as much care as ever

4. I can laugh and see the funny side of things

As much as I always could

Not quite so much now

Definitely not so much now

Not at all

11. I feel restless as if I have to be on the move

Very much indeed

Quite a lot

Not very much

Not at all

5. Worrying thoughts go through my mind

A great deal of time

A lot of the time

From time to time but not too often

Only occasionally

12. I look forward with enjoyment to things

As much as ever I did

Rather less than I used to

Definitely less than I used to

Hardly at all

6. I feel cheerful

Not at all

Not often

Sometimes

Most of the time

13. I get sudden feelings of pain

Very often indeed

Quite often

Not very often

Not at all

7. I can sit at ease and feel relaxed

Definitely

Usually

Not often

Not at all

14. I can enjoy a good book, radio or TV programme

Often

Sometimes

Not often

Very seldom

Hospital Anxiety and Depression Scale (Zigmond and Snaith 1983)

Aqra sewwa kull kategorija u mmarka [X] fil-kaxxa t-twegibiet tieghek li jirriflettu dak li qiegħed/a tħoss **fil-preżent, ISSA**. Jekk tista' ddumx taħseb wisq fuq it-twegibiet tieghek. Ir-rejazzjoni mmedjata tieghek għat-twegibiet tkun aktar preċiża minn dawk li ddum taħseb fuq kif għandek twegibhom.

IMMARKA KAXXA [X] WAHDA F'KULL TAQSIMA**1. Inhoss it-tensjoni u l-ansjeta`:**

	il-ħin kollu
	ħafna mill-ħin
	minn ħin għall-iehor
	qatt

2. Għadni niehu pjaċir nagħmel l-affarijiet li kont nagħmel qabel:

	żgur daqs qabel
	ftit inqas minn qabel
	ftit biss
	kwazi xejn

3. Inhossni mbeżża' qisu ser jigr xi haġa kerha

	Inhossu ħafna u hażin ħafna
	Iva, imma mhux daqstant
	ftit, iżda ma jinkwetanix
	lanqas xejn

4. Niċċajta u nidħak u nara l-aspett inqas serju ta' l-affarijiet

	L-aktar li nista' possibli
	Mhux daqstant issa
	Żgur li le, issa
	Lanqas xejn

5. Hsebijiet ta' nkwiēt jgħaddu minn moħħi:

	il-ħin kollu
	parti kbira tal-ħin
	minn ħin għall-ieħor, imma mhux spiss
	xi kultant

6. Inħossni kuntent/a:

	qatt
	mhux dejjem
	xi kultant
	kwazi il-ħin kollu

7. Kapaċi noqgħod bilqegħda komdu u nħossni rilassat/a:

	dejjem
	sikwit
	mhux ta' spiss
	qatt

8. Inħossni qiegħed/a inċedi:

	il-ħin kollu
	ta' spiss
	xi kultant
	qatt

9. Inħoss sens ta' biżgħa u nħoss tferfir fl-istonku:

	lanqas xejn
	xi kultant
	ta' spiss
	spissi ħafna

10. Tlift kull interess ta' kif inżomm persunti:

<input type="checkbox"/>	qatt ma naghti kas
<input type="checkbox"/>	ma naghtix kas daqskemm suppost
<input type="checkbox"/>	jista' jkun li ma tantx naghti kas
<input type="checkbox"/>	niehu hsieb kemm nista'

11. Inhossni bla kwiet, qisni ghandi nibqa' sejjer il-hin kollu:

<input type="checkbox"/>	hafna, hafna
<input type="checkbox"/>	mhux hażin
<input type="checkbox"/>	ftit li xejn
<input type="checkbox"/>	lanqas xejn

12. Inhares bil-ferh lejn l-affarijiet:

<input type="checkbox"/>	hafna bhal qabel
<input type="checkbox"/>	ftit inqas minn qabel
<input type="checkbox"/>	hafna inqas minn qabel
<input type="checkbox"/>	ftit li xejn

13. Kultant inhossni "ma nafx fejn se naghti rasi":

<input type="checkbox"/>	dejjem
<input type="checkbox"/>	ta' spiss
<input type="checkbox"/>	mhux ta' spiss
<input type="checkbox"/>	qatt

14. Niehu gost naqra ktieb tajjeb jew nisma' r-radju jew nara programm tat-Televixin:

<input type="checkbox"/>	spiss
<input type="checkbox"/>	xi kultant
<input type="checkbox"/>	mhux dejjem
<input type="checkbox"/>	rari

**THE HELPFULNESS OF
SPIRITUAL COPING STRATEGIES SCALE
(HSCS Scale)**

Read each category well and encircle ☐ the number according to how much you used each spiritual coping strategy and the extent to which you have found them helpful.

AIMS

- To rate on the scale the frequency of use of spiritual coping strategies.
- To rate on the scale the extent to which the respective spiritual method was found helpful to cope with the MI.

Time 3: To be marked on the first 48 hours post discharge: The use and helpfulness of those spiritual coping strategies, during your hospital stay.

Time 4: To be marked on the first 48/72 hours, 6 weeks after discharge : The use and helpfulness of those spiritual coping strategies during those 6 weeks.

Time 5: To be marked on the first 48/72 hours, 13 weeks after discharge : The use and helpfulness of those spiritual coping strategies during the 6 weeks between the 7th and 13th week after discharge.

FREQUENCY of the use of the spiritual coping strategies:


- (0) Never used/ Qatt : qatt
- (1) Seldom used/rari : mill-inqas darba fis-sitt xhur/ fis-sena;
- (2) Sometimes used/kultant : mill-inqas darba fix-xahar;
- (3) often used/ta' sikwit : ta' l-inqas darba kuljum / fil-gimgha;

HELPFULNESS of the spiritual coping strategies:

- (X) Not applicable / Ma japplikax;
- (0) Not helpful / ghajnuna ta' xejn;
- (1) Slightly helpful / ta' ftit ghajnuna;
- (2) Fairly helpful / ta' ghajnuna mhux hazin;
- (3) very helpful / ta' ghajnuna kbira

[F / M / T.....]

**IS-SIWI TA' L-UZU
TA' STRATEGIJI SPIRITWALI
(H.S.C.S. Scale)**

Aqra sewwa kull kategorija u immarka b' ċirku  t-twegibiet tieghek, skond dak li tiftakar li ghamilt f' dan l-ahhar zmien.

IL-FINIJIET:

- a) biex jimmarkaw fuq l-iskala l-frekwenza ta' kemm -il darba dawn l-istrategiji ntuzaw.
- b) biex jimmarkaw fuq l-iskala sa fejn dawn il-mezzi spiritwali kienu ta' ghajnuna ghalhom biex ghelbu l-istress ta' l-attakk tal-qalb.

Hin 3: Fl-ewwel 48 siegħa wara li gejt illicenzjat mill-isptar:
L-uzu u s-siwi tal-metodi spiritwali kemm domt l-isptar.

Hin 4: Fl-ewwel 48/72 siegħa, wara 6 gimghat li gejt lura d-dar: L-uzu u s-siwi tal-metodi spiritwali fl-ewwel sitt(6) gimghat li gejt lura d-dar.

Hin 5: Fl-ewwel 48/72 siegħa, fis-seba' 13-il-gimgha li gejt lura d-dar: L-uzu u s-siwi tal-metodi spiritwali bejn is-seba'(7) u t-tlettax-il gimgha(13) li gejt lura d-dar.

FREQUENCY / KEMM-IL DARBA NTUZAW IL-METODI:

- (0) Never used/ Qatt : qatt
- (1) Seldom used/rari : mill-inqas darba fis-sitt xhur/ fis-sena;
- (2) Sometimes used/kultant : mill-inqas darba fix-xahar;
- (3) often used/ta' sikwit : ta' l-inqas darba kuljum / fil-gimgha;

HELPLESSNESS /KEMM KIENU TA' GHAJNUNA L-METODI:

- (X) Not applicable / Ma japplikax;
- (0) Not helpful / ghajnuna ta' xejn;
- (1) Slightly helpful / ta' ftit ghajnuna;
- (2) Fairly helpful / ta' ghajnuna mhux hazin;
- (3) very helpful / ta' ghajnuna kbira

[F / M / T.....]

The HELPFULNESS OF SPIRITUAL COPING STRATEGIES scale (H.S.C.S. scale)
IS-SIWI TA' L-UZU TA' STRATEGIJI SPIRITWALI (H.S.C.S.) SCALE

Kemm -il darba jintuzaw: Gatt (0) ; rari (1) ; kultant (2) ; ta' sikwit (3)

Kemm kienu ta' ghajnuna : Ma japplikax (X) ; ghajnuna : xejn (0) ; ffit (1) ; mhux hazin (2) ; hafna (3)

IL-METODI SPIRITWALI (spiritual coping strategies)	KEMM -IL DARBA JINTUZAW (frequency)	KEMM KIENU TA' GHAJNUNA (helpfulness)
1. Tuza t-talb personali, privat - using personal/private prayer	0 1 2 3	X 0 1 2 3
2. Izzomm relazzjoni m'Alla / qawwa ohra, bhala l-ghajn ta' sahha u tama - Relationship with God/Ultimate other as the source of strength and hope	0 1 2 3	X 0 1 2 3
3. Tibni / zomm relazzjoni ma' hbiebek u qrabatek - Build / maintain a relationship with your friends, relatives	0 1 2 3	X 0 1 2 3
4. Tghid it-talb ma' xi haddiehor jew fi grupp - Pray with someone else or with a group of people	0 1 2 3	X 0 1 2 3
5. Tiddiskuti d-diffikultajiet, problemi tieghek ma' xi hadd li kellu attakk tal-qalb -Discussing your difficulties, problems with someone else who had experienced heart attack	0 1 2 3	X 0 1 2 3
6. Tuza oggetti, ikoni spiritwali, religjuzi - Using spiritual / religious objects / icons	0 1 2 3	X 0 1 2 3
7. Tara b'mod pozittiv is-sitwazzjoni tieghek. - seeing the positive side of your situation	0 1 2 3	X 0 1 2 3

Kemm -il darba jintuzaw: Qatt (0) ; rari (1) ; kultant (2) ; ta' sikwit (3)

Kemm kienu ta' ghajjnuna : Ma japplikax (X) ; ghajjnuna : xejn (0) ; ftit (1) ; mhux hazin (2) ; hafna (3)

IL-METODI SPIRITWALI (spiritual coping strategies)	KEMM -IL DARBA JINTUZAW (frequency)	KEMM KIENU TA' GHAJJUNA (helpfulness)
8. Tinqeda b'muzika religjuza jew programmi religjuzi tar-radio jew TV - Hearing radio or watching TV religious music and programmes	0 1 2 3	X 0 1 2 3
9. Tghix gurnata b'gurnata, bit-tama li l-futur ikun isbah ghalik - Living day by day hoping that the future will be brighter for you	0 1 2 3	X 0 1 2 3
10. Tuza kitba spiritwali / religjuza li tisprik spiritwalment - Reading spiritual / religious inspirational texts	0 1 2 3	X 0 1 2 3
11. Taccetta s-sitwazzjoni ta' l-attakk tal-qalb tieghek - Accepting the situation of your heart attack	0 1 2 3	X 0 1 2 3
12. Tifttex sens u skop biex tghix f'din is-sitwazzjoni iebssa - Finding meaning and purpose to live through your heart attack	0 1 2 3	X 0 1 2 3
13. Tiegħu gost bis-sbuhija ta' l-arti bħal, muzika, pittura, xogħol ta' l-idejn... - Appreciating the beauty of arts e.g. music, paintings, hand crafts ...	0 1 2 3	X 0 1 2 3
14. Tiftah qalbek ma' qrabatek u hbiebek - Relating to your relatives and friends by confiding in them	0 1 2 3	X 0 1 2 3

Kemm -il darba jintuzaw: Gatt (0) ; rari (1) ; kultant (2) ; ta' sikwit (3)

Kemm kien u ta' ghajnuna : Ma japplikax (X) ; ghajnuna : xejn (0) ; ftit (1) ; mhux hazin (2) ; hafna (3)

IL-METODI SPIRITWALI (spiritual coping strategies)	KEMM -IL DARBA JINTUZAW (frequency)	KEMM KIENU TA' GHAJNUNA (helpfulness)
15. Tmur il-knisja / post ta' talb ghal servizzi religjuzi - Church attendance for religious practices	0 1 2 3	X 0 1 2 3
16. Tuza r-riflessjoni bhala mezz biex taghraf il-kapacitajiet u l-qawwiet tieghek innifsek - using reflection as a means of identifying your potentials and strengths	0 1 2 3	X 0 1 2 3
17. Taghti ghajnuna lill-ohrajn bhala mezz biex taghti l-imhabba u l-paci - Helping others as a means of giving love and peace to others	0 1 2 3	X 0 1 2 3
18. Tafda f'Alla bit-tama li l-affarijiet jinbidlu għall-ahjar - Trusting in God, hoping that things will get better	0 1 2 3	X 0 1 2 3
19. Titqarben - receiving communion	0 1 2 3	X 0 1 2 3
20. Tiehu gost bin-natura, bhal bahar, xemx, pjanti, fjuri... - Appreciating nature, e.g. sea, sun, plants, flowers....	0 1 2 3	X 0 1 2 3

OTHER SPIRITUAL COPING STRATEGIES:

Kemm -il darba jintuzaw: Gatt (0) ; rari (1) ; kultant (2) ; ta' sikwit (3)

Kemm kien ta' ghajnuna : Ma japplikax (X) ; ghajnuna : xejn (0) ; ftit (1) ; mhux hazin (2) ; hafna (3)

	IL-METODI SPIRITWALI (spiritual coping strategies)	KEMM -IL DARBA JINTUZAW (frequency)	KEMM KIENU TA' GHAJNUNA (helpfulness)
21		0 1 2 3	X 0 1 2 3
22		0 1 2 3	X 0 1 2 3
23		0 1 2 3	X 0 1 2 3
24		0 1 2 3	X 0 1 2 3
25		0 1 2 3	X 0 1 2 3

TAQSIMA B / SECTION B

L-ORDNITAL-METODI SPIRITWALI LI GHENUK L-AKTAR

RANK ORDER OF SPIRITUAL COPING STRATEGIES

(Kull wahda tigi pprezentata fuq kard / Each to be presented on a separate card)

Aghzel l-aktar HAMES metodi spiritwali li thoss li ghenuk l-aktar fis-sitwazzjoni tieghek. (Nru 1 ikun l-aktar li ghinek)

Put in order of priority FIVE of the following spiritual coping strategies, which you found most helpful in your situation. (No 1 being the most helpful)

- ☐ Tuza t-talb personali, privat / *using personal/private prayer*
- ☐ Relazzjoni m'Alla / Qawwa ohra, bhala l-ghajn ta' sahha u tama
Relationship with God/Ultimate other as the source of strength and hope
- ☐ Tibni / izzomm relazzjoni ma' hbiebek u qrabatek.
Build / maintain a relationship with your friends, relatives.
- ☐ Tghid it-talb ma' xi haddiehor jew fi grupp
Pray with someone else or with a group of people
- ☐ Tiddiskuti d-diffikultajiet, problemi tieghek ma' xi hadd li kellu attack tal-qalb
Discussing your difficulties, problems with someone else who had experienced heart attack
- ☐ Tuza oggetti, ikoni spiritwali, religjuzi / *Using spiritual / religious objects / icons*
- ☐ Tara b'mod pozittiv is-sitwazzjoni tieghek / *seeing the positive side of your situation*
- ☐ Tingeda b'muzika religjuza jew programmi religjuzi tar-radio jew TV
Hearing radio or watching TV religious music and programmes
- ☐ Tghix gurnata b'gurnata, bit-tama li l-futur ikun isbah ghalik
Living day by day, hoping that the future will be brighter

- ☐ Tuża kitba spiritwali / reliġjuża li tispirak spiritwalment
Reading spiritual / religious inspirational texts
- ☐ Taċċetta s-sitwazzjoni ta' l-attakk tal-qalb tiegħek
Accepting the situation of your heart attack
- ☐ Tfittex sens u skop biex tghix f'din is-sitwazzjoni iebša
Finding meaning and purpose to live through your heart attack
- ☐ Tiehu gost bis-sbuhija ta' l-arti bħal, mużika, pittura, xogħol ta' l-idejn....
Appreciating the beauty of arts e.g. music, paintings, hand crafts ...
- ☐ Tiftaħ qalbek ma' qrabatek u hbiebek
Relating to your relatives and friends by confiding in them
- ☐ Tmur il-knisja / post ta' talb għal servizzi reliġjużi
Attending Church / place of worship for religious practices
- ☐ Tuża r-riflessjoni bħala mezz biex tagħraf il-kapaċitajiet u l-qawwiet tiegħek innifsek
Using self reflection as a means of identifying your potentials and strengths
- ☐ Tagħti għajjnuna lill-oħrajn bħala mezz biex tagħti l-imħabba u l-paċi
Helping others as a means of giving love and peace to others
- ☐ Tafda f'Alla bit-tama li l-affarijiet jinbidlu għall-aħjar
Trusting in God, hoping that things will get better
- ☐ Titqarben / receiving communion
- ☐ Tiehu gost bin-natura, bħal baħar, xemx, pjanti, fjuri.....
Appreciating nature such as sea, sun, plants, flowers....

**THE USE OF
SPIRITUAL COPING STRATEGIES (U.S.C.S.)
PATIENTS' SEMI-STRUCTURED INTERVIEW SCHEDULE**

(A brief version)

Several methods have helped people to cope with the stress of Myocardial Infarction(MI). Thus the patients will be asked :

- about the possible spiritual coping methods they have used after their first MI.
- to describe the nature of the spiritual coping strategies and the reasons why the respective method was found helpful.
- to put in order of priority the 5 spiritual coping strategies, which were found most helpful.

DATA COLLECTION by the use of the U.S.C.S. interview schedule

Time 3: **On the first 48 hours post discharge:** to identify the spiritual coping strategies used during their hospital stay.

[F / M No..... /]

**L-UŻU TA' STRATEĠIJI SPIRITWALI
BIEX WIEHED JGHIN LILU NNIFSU (U.S.C.S.)
SKEDASEMI-STRUTTURATA TA' L-INTERVISTA LILL-PAZJENTI**

(A brief version)

Bosta metodi għenu lil dawn in-nies biex ilaħħqu ma' l-istress ta' l-attakk tal-qalb. Għalhekk il-pazjenti ser isirulhom il-mistoqsijiet:

- dwar liema mezz spiritwali użaw biex għelbu l-istress wara li tahom l-ewwel attakk tal-qalb.
- biex jiddeskrivu n-natura ta' l-istrategiji spiritwali użati u b'liema mod dawn l-istrategiji kienu ta' benefiċċju għall-pazjent li uzahom.
- biex ipoġġu f'ordni ta' l-akbar importanza l-ewwel hames strategiji ewlenin li sabu li għenuhom l-aktar.

TAGHRIF MIĠBUR BL-UŻU TA' L-ISKEDA TA' L-INTERVISTA (USCS)

Hin 3: fl-ewwel 48 siegħa wara li nargu mill-isptar - biex jiġu maghrufa l-istrategiji spiritwali użati minn wara CCU sal-hruġ mill-isptar.

U.S.C.S.

(M/F.....)

L-UZUTAL-METODI SPIRITWALI BIEK WIEHED JGHIN RUHU
SECTION A : USE OF SPIRITUAL COPING STRATEGIES (U.S.C.S.)

1. Talb personali / privat
Personal / private prayer

1.1. Agħti eżempji jekk jogħġbok / *Please give examples.*

1.2. Għaliex tahseb li għinek dan it-talb? / *Why do you think did it help you?*

- =====
2. Relazzjoni m'Alla / Qawwa oħra, bħala l-għajn ta' saħħa u tama
Relationship with God/Ultimate other as the source of strength and hope

2.1. Agħti eżempji jekk jogħġbok / *Please give examples*

2.2. Għaliex tahseb li għinitek din ir-relazzjoni? / *Why do you think did it help you?*

- =====
3. Tibni / iżzomm relazzjoni ma' ħbiebek u qrabatek
Build / maintain a relationship with yur friends, relatives.

3.1. Agħti eżempji jekk jogħġbok / *Please give examples*

3.2. Għaliex tahseb li għinitek din ir-relazzjoni? / *Why do you think did it help you?*

=====

4. Tgħid it-talb ma' xi haddieħor jew fi grupp
Pray with someone else or with a group of people

4.1. Aġhti eżempji jekk jogħġbok / *Please give examples*

4.2. Għaliex tahseb li għinek dan it-talb / *Why do you think did it help you?*

=====

5. Tiddiskuti d-diffikultajiet, problemi tiegħek ma' xi hadd li kellu
attakk tal-qalb
*Discussing your difficulties, problems with someone else who had
experienced a heart attack.*

5.1. Aġhti eżempji jekk jogħġbok / *Please give examples*

5.2. Kif għinitek din id-diskursata? *Why do you think did it help you?*

=====

6. Tuża ogġetti, ikoni spiritwali, reliġjużi
Using spiritual / religious objects / icons

6.1. Aġhti eżempji jekk jogħġbok / *Please give examples*

6.2. Għaliex tahseb li għinuk dawn l-ogġetti? *Why do you think did these help
you?*

=====

7. Tara b'mod pożittiv is-sitwazzjoni tiegħek
Seeing the positive side of your situation

7.1. Aġhti eżempji jekk jogħġbok / *Please give examples*

7.2. Għaliex tahseb li għinek dan il-pożittiv? / *Why do you think did it help you?*

=====

8. Tinqeda b'muzika reliġjuża jew programmi reliġjużi tar-radio jew TV.
Hearing radio or watching TV religious music and programmes.

8.1. Aġhti eżempji jekk jogħġbok / *Please give examples*

8.2. Għaliex tahseb li għinuk? *Why do you think did they help you?*

=====

9. Tghix gurnata b'gurnata, bit-tama li l-futur ikun isbah ghalik.
Living day by day hoping that the future will be brighter .

- 9.1. Aghti eżempji jekk jogħġbok / *Please give examples*
9.2. Ghaliex tahseb li ghinek? Why do you think did it help you?

=====

10. Tuza kitba spiritwali / religjuż li tispirak spiritwalment
Reading spiritual / religious inspirational texts

- 10.1. Aghti eżempji jekk jogħġbok / *Please give examples*
10.2. Ghaliex tahseb li ghinuk? Why do you think did they help you?

=====

11. Taccetta s-sitwazzjoni ta' l-attakk tal-qalb tiegħek.
Accepting the situation of your heart attack.

- 11.1. Aghti eżempji jekk jogħġbok / *Please give examples*
11.2. Ghaliex tahseb li ghinitek? Why do you think did it help you?

=====

12. Tfittex sens u skop biex tghix f'din is-sitwazzjoni iebsa
Finding meaning and purpose to live through your heart attack

- 12.1. Aghti eżempji jekk jogħġbok / *Please give examples*
12.2. Ghaliex tahseb li ghinek dan il-mod? Why do you think did it help you?

=====

13. Tieħu gost bis-sbuhija ta' l-arti bħal, muzika, pittura, xogħol ta' l-idejn
Appreciating the beauty of arts e.g. music, paintings, hand crafts

- 13.1. Aghti eżempji jekk jogħġbok / *Please give examples*
13.2. Ghaliex tahseb li tghinek din l-arti?/ Why do you think did it help you?
- =====

14. Tiftaħ qalbek ma' qrabatek u ħbiebek
Relating to your relatives and friends by confiding in them

14.1. Agħti eżempji jekk jogħġbok / *Please give examples*

14.2. Għaliex tahseb li għinitek? / *Why do you think did it help you?*

=====

15. Tmur il-knisja / post ta' talb għal servizzi reliġjużi.
Church attendance for religious practices .

15.1. Agħti eżempji jekk jogħġbok / *Please give examples*

15.2. Għaliex tahseb li jgħinek li tmur il-knisja, post ta' talb? / *Why do you think did church attendance help you?*

=====

16. Tuża r-riflessjoni bħala mezz biex tagħraf il-kapaċitajiet u l-qawwiet tiegħek innifsek .
Using self reflection as a means of identifying your potentials and strengths

16.1. Agħti eżempji jekk jogħġbok / *Please give examples*

16.2. Għaliex tahseb li tgħinek din ir-riflessjoni? / *Why do you think did reflection help you?*

=====

17. Tagħti għajjnuna lill-oħrajn bħala mezz biex tagħti l-imħabba u l-paċi.
Helping others as a means of giving love and peace to others

17.1. Agħti eżempji jekk jogħġbok / *Please give examples*

17.2. Għaliex tahseb li għinitek din l-għajjnuna? / *Why do you think did it help you?*

=====

18. Tafda f'Alla bit-tama li l-affarijiet jinbidlu għall-aħjar
Trusting in God, hoping that things will get better

18.1. Agħti eżempji jekk jogħġbok / *Please give examples*

18.2. Għaliex tahseb li għinitek? / *Why do you think did it help you?*

=====

19. Titqarben / *receiving communion*

19.1. Aghti eżempji jekk jogħġbok / *Please give examples*

19.2. Għaliex tahseb li ghinek? / *Why do you think did it help you?*

=====

20. Tieġu gost bin-natura, bhal bahar, xemx, pjanti, fjuri...

Appreciating nature such as the sea, sun, plants, flowers.....

20.1. Aghti eżempji jekk jogħġbok / *Please give examples*

20.2. Għaliex tahseb li ghinitek in-natura? / *Why do you think did it help you?*

=====

21. OHRAJN / *OTHERS*

=====

Appendix H.1

RESULTS OF RELIABILITY AND VALIDITY OF HAD scale (Zigmond and Snaith 1983)

Table H.1.1. Terminology used in the test-retest of HAD scale

In this study, the items are referred to as follows:

<i>Subscale:</i>	<i>Pre variables:</i>	<i>Post variables:</i>
anxiety	: a1, a2, a3, a4, a5, a6, a7; apre = sum of a1 to a7;	a11, a22, a33, a44, a55, a66, a77 ; apost = sum of a11 to a77;
depression	: d1, d2, d3, d4, d5, d6, d7; dpre = sum of d1 to d7;	d11, d22, d33, d44, d55, d66, d77. dpost = sum of d11 to d77;
	adpre = apre+dpre;	adpost= apost+adpost.

Table H.1.2. Test-Retest Reliability of the HAD scale (Zigmond and Snaith 1983).

Variables	Parameter	Original	Maltese	Back Translation	All Groups
Anxiety Pre-Post					
a1-a11	Spearman's ρ	0.98	0.95	0.84	0.94
	Kappa	0.84	0.89	0.88	0.87
a2-a22	Spearman's ρ	0.93	0.87	0.96	0.91
	Kappa	0.79	0.68	0.87	0.77
a3-a33	Spearman's ρ	0.94	0.86	0.96	0.91
	Kappa	0.78	0.84	0.82	0.81
a4-a44	Spearman's ρ	0.97	0.95	0.98	0.96
	Kappa	0.97	0.94	0.94	0.95
a5-a55	Spearman's ρ	1.00	0.97	0.99	0.99
	Kappa	1.00	0.93	0.91	0.95
a6-a66	Spearman's ρ	0.93	0.98	0.88	0.93

	Kappa	0.84	0.97	0.76	0.88
a7-a77	Spearman's ρ	0.98	0.92	0.97	0.95
	Kappa	0.94	0.94	0.95	0.95
<i>Sum of anxiety variables pre and post:</i>					
apre-apost	Spearman's ρ	0.98	0.93	0.98	0.98

Variables	Parameter	Original	Maltese	Back Translation	All Groups
Depression Pre-Post					
d1-d11	Spearman's ρ	1.00	0.82	0.99	0.94
	Kappa	1.00	0.67	0.92	0.87
d2-d22	Spearman's ρ	0.99	0.92	0.96	0.96
	Kappa	0.97	0.83	0.83	0.88
d3-d33	Spearman's ρ	1.00	0.90	0.94	0.95
	Kappa	1.00	0.91	0.91	0.94
d4-d44	Spearman's ρ	0.98	0.91	0.98	0.95
	Kappa	0.91	0.86	0.95	0.91
d5-d55	Spearman's ρ	0.91	0.97	1.00	0.95
	Kappa	0.90	0.94	1.00	0.94
d6-d66	Spearman's ρ	0.99	1.00	0.99	0.99
	Kappa	0.97	1.00	0.95	0.98
d7-d77	Spearman's ρ	0.97	0.85	1.00	0.93
	Kappa	0.96	0.68	1.00	0.86
<i>Sum of depression variables pre and post:</i>					
dpre-dpost	Spearman's ρ	0.99	0.97	0.99	0.98
<i>Sum of anxiety and depression variables together, pre and post:</i>					
adpre-adpost	Spearman's ρ	0.99	0.99	0.96	0.98

**Table H.1.3. Factor Analysis of Anxiety subscale of HAD scale
(Zigmond and Snaith 1983)**

Variables	Parameter	Original	Maltese	Back Translation	All Groups
Anxiety Only					
Anxiety only	Cronbach's Alpha	.8772	.9014	.8910	.8934
Pre and Post	Eigenvalues > 1	5	5	5	6
	Secondary Factors	2	1	1	1
Anxiety Pre	Cronbach's Alpha	.7394	.7927	.8175	.7817
	Eigenvalues > 1	3	2	2	1
	Secondary Factors	1	1	1	1
Anxiety Post	Cronbach's Alpha	.7307	.7899	.7401	.7655
	Eigenvalues $\lambda > 1$	3	2	1	1
	λ =	2.72, 1.11, 1.03, 0.70.	3.14, 1.01, 0.86.	2.82 0.99	
	λ_1/λ_2 =	2.45	3.11	2.85	
	Secondary Factors	1	1	1	

**Table H.1.4. Factor Analysis of Anxiety subscale of HAD scale
(Zigmond and Snaith 1983)**

Variables	Parameter	Original	Maltese	Back Translation	All Groups
Depression Only					
Depression Only	Cronbach's Alpha	.7527	.8652	.7851	.8167
	Eigenvalues > 1	6	5	5	6
Pre and Post	Secondary Factors	3	2	2	2
Depression Pre	Cronbach's Alpha	.4940	.7256	.5086	.6068
	Eigenvalues > 1	3	3	3	2
	Secondary Factors	1	1	2	1
Depression Post	Cronbach's Alpha	.4516	.7024	.5094	.6004
	Eigenvalues $\lambda > 1$	3	2	3	2
	$\lambda =$	1.69, 1.34, 1.16, 0.91.	2.62, 1.10, 0.96.	2.20, 1.59, 1.29, 0.71.	
	$\lambda_1/\lambda_2 =$	1.26	2.38	1.38	
	Secondary Factors	2	1	1	1

**Table H.1.5. Factor Analysis of Anxiety subscale of HAD scale
(Zigmond and Snaith 1983)**

Variables	Parameter	Original	Maltese	Back Translation	All Groups
Anxiety & Depression					
Anxiety & Depression	Cronbach's Alpha	.8594	.9262	.8909	.9041
	Eigenvalues > 1	7	8	8	10
Pre and post	Secondary Factors	3	2	3	3
Anxiety & Depression Pre only	Cronbach's Alpha	.7229	.8459	.7823	.8010
	Eigenvalues > 1	6	4	5	3
	Secondary Factors	2	1	2	1
Anxiety & Depression Post only	Cronbach's Alpha	.7049	.8460	.7693	.7996
	Eigenvalues > 1	5	5	4	3
	Secondary Factors	2	1	2	1

Appendix H.2

RESULTS OF RELIABILITY AND VALIDITY OF JAREL SWB scale

Table H.2.6. Terminology used in the test-retest of the JAREL SWB

In this study, the items are referred to as follows:

<i>Scale:</i>	<i>Pre variables:</i>	<i>Post variables:</i>
JAREL:	a1, a2, a3, a4, a5, a6, a7, a8, a9,	b1, b2, b3, b4, b5, b6, b7, b8, b9,
21 items	a10, a11, a12, a13, a14, a15,	b10, b11, b12, b13, b14, b15,
	a16, a17, a18, a19, a20, a21;	b16, b17, b18, b19, b20, b21;
	atot = sum of a1 to a21.	btot = sum of b1 to b21;

Table H.2.7. Test-Retest Reliability of JAREL Spiritual Well being Scale (Hungelmann et al 1985)

Variables	Parameter	Original (English)	Maltese	Back Translation	All Groups
<i>pre-post</i>					
a1-b1	Spearman's ρ	0.69	1.00	0.88	0.87
	Kappa	0.36	1.00	0.76	0.73
a2-b2	Spearman's ρ	0.57	1.00	0.98	0.87
	Kappa	0.17	1.00	0.91	0.73
a3-b3	Spearman's ρ	0.62	0.82	0.84	0.73
	Kappa	0.21	0.58	0.68	0.50
a4-b4	Spearman's ρ	0.42	0.82	1.00	0.79
	Kappa	0.44	0.66	1.00	0.70
a5-b5	Spearman's ρ	0.47	0.96	0.96	0.82
	Kappa	0.13	0.90	0.91	0.66
a6-b6	Spearman's ρ	0.77	1.00	1.00	0.93
	Kappa	0.57	1.00	1.00	0.88
a7-b7	Spearman's ρ	0.34	0.96	0.96	0.69
	Kappa	0.19	0.82	0.91	0.63
a8-b8	Spearman's ρ	0.44	1.00	1.00	0.85
	Kappa	0.26	1.00	1.00	0.81

a9-b9	Spearman's ρ	0.59	0.92	1.00	0.85
	Kappa	0.56	0.88	1.00	0.82
a10-b10	Spearman's ρ	0.66	0.96	1.00	0.91
	Kappa	0.47	0.92	1.00	0.82
a11-b11	Spearman's ρ	0.39	0.96	1.00	0.83
	Kappa	0.17	0.92	1.00	0.73
a12-b12	Spearman's ρ	0.48	0.98	0.85	0.77
	Kappa	0.31	0.97	0.81	0.71
a13-b13	Spearman's ρ	0.32	0.98	1.00	0.83
	Kappa	0.21	0.95	1.00	0.75
a14-b14	Spearman's ρ	0.33	0.98	0.99	0.75
	Kappa	0.10	0.95	0.96	0.69
a15-b15	Spearman's ρ	0.62	0.99	0.91	0.88
	Kappa	0.39	0.97	0.75	0.75
a16-b16	Spearman's ρ	0.38	0.97	0.99	0.82
	Kappa	0.05	0.90	0.96	0.68
a17-b17	Spearman's ρ	0.71	0.97	0.99	0.89
	Kappa	0.30	0.94	0.90	0.74
a18-b18	Spearman's ρ	0.31	0.98	0.98	0.72
	Kappa	0.07	0.88	0.91	0.64
a19-b19	Spearman's ρ	0.39	0.98	0.89	0.80
	Kappa	0.11	0.95	0.88	0.70
a20-b20	Spearman's ρ	0.65	0.97	1.00	0.87
	Kappa	0.51	0.92	1.00	0.82
a21-b21	Spearman's ρ	0.76	0.99	0.99	0.88
	Kappa	0.46	0.98	0.92	0.82
<i>Sum of variables pre and post:</i>					
atot - btot	Spearman's ρ	0.72	0.99	0.99	0.91

Table H.2.8. Internal Reliability of the JAREL SWB scale.

Factor Analysis was performed on the JAREL SWB scale in the English, Maltese and back-translation versions, and on all groups together. For each group, Cronbach's alpha is reported for the variables comprising this scale. The test (pre) and and retest (post) variables are considered both together and separately for each group. For each factor analysis, the first three eigenvalues were given, the number of factors each explaining more than 12% of the variance, (most often this number is 2), and the percentage variance explained by the first two factors.

Variables	Parameter	Original	Maltese	Back Translation	All Groups
The JAREL SWB scale					
Pre and post <i>42 items</i>	Cronbach's Alpha	.9017	.8909	.8842	.8986
	Eigenvalues > 5.0	1	2	2	2
	λ =	10.31, 4.47, 3.10.	8.78, 6.23, 4.54.	11.56, 6.06, 4.08.	8.79, 5.67, 3.09.
	%variance explained by first 2 factors	35%	36%	42%	34%
Pre only <i>21 items</i>	Cronbach's Alpha	.7786	.7830	.7617	.7852
	Eigenvalues > 2.5	2	2	2	2
	λ =	4.51, 2.90, 2.12.	4.49, 3.18, 2.27.	5.79, 2.98, 2.23.	4.33, 2.83, 1.81.
	%variance explained by first 2 factors	35%	37%	42%	34%
Post only <i>21 items</i>	Cronbach's Alpha	.8178	.7717	.7469	.7941
	Eigenvalues λ > 2.5	2	2	2	2
	λ =	5.55, 2.74, 2.00.	4.32, 3.06, 2.29.	5.20, 3.13, 1.88.	4.43, 3.03, 1.67.
	%variance explained by first 2 factors	39%	35%	40%	36%

Table H.2.9. Two factor solution for the items in the JAREL SWB scale.

The two factor solution is worked out for each group separately and for all three groups together. For comparison, we give the loadings of each item on each factor for all four cases. For clarity, loadings below 0.4 are not listed and can be considered to be 0. The items which comprise the first factor are given first: those items loading on Factor 1 in all four groups are listed first followed by those items which have loadings on three of the groups. These items are then followed by items loading on Factor 2: those items loading on Factor 2 in all 4 groups are listed next, followed by those which have loadings on three of the groups. Finally those variables which have loadings on only one or two of the groups, or have loadings < 0.4 are listed last.

It can be seen that the factor structure remains very similar across the four groups. Factor 1 is made up of the items b4, b15, b16, b3, b9, b10, b13, b19 in most groups, whilst Factor 2 includes the items b1, b5, b6, b8, b20, b2, b14 in most groups. In the bottom rows, we give for each group, the variance explained by the two factors, Cronbach's alpha for the two factors, and the correlation between the two factors.

\ Groups:	Factor 1				Factor 2			
	Eng	Mal	BaT	All	Eng	Mal	BaT	All
Items								
b4	.72	.49	.72	.68				.42
b15	.58	.47	.80	.68				
b16	.70	.64	.72	.71				
b3	.58		.64	.47				
b9	.76	.43		.40				
b10	.42	.73	.77	.74				
b13		.85	.62	.73				
b19		.64	.60	.58				
b1					.71	.59	.65	.70
b5					.78	.70	.74	.72
b6					.69	.43	.43	.46
b8			-.44		.85	.65	.52	.63
b20	.46		-.42		.65	.51	.54	.71
b2						.59	.80	.56
b14	.69					.75	.47	.57
b7			.41					
b11		.72		.49				
b12	.59					.70		.70
b17			.57					
b18			.74					
b21	.59							.43
<hr/>								
VP	4.63	3.66	5.18	3.81	3.48	3.68	3.15	3.64
α	0.74	0.79	0.82	0.81	0.82	0.76	0.72	0.78
Corr f1-f2	0.10	0.13	0.04	0.18	<i>End of Table IV.</i>			

Table H.2.10. Cluster analysis of the 21 items in the JAREL SWB scale.

The sorted and shaded correlation matrix clearly shows that the items separate naturally into two distinct clusters. One cluster is made up of the items b3, b4, b10, b13, b16, b15, b19, b9 and b11, whilst another cluster is composed of b1, b2, b5, b8, b12, b20, b14 and b6. The first cluster of items describes mainly the attitude of a subject towards him/herself and towards fellow humans. On the other hand, items in the second cluster describe mainly the attitude of a subject towards religion and his/her belief in God. This correlation structure is also observed in each of the three groups when they are taken separately.

```

b1      X
b2      XX
b5      XXX
b8      +.XX
b12     ++-+X
b20     -.-+XX
b14     +X+ ++X
b6      ..---- X
b18           . - X
b21     ...++..+X
b3      .      - .X
b4      .- . . -.-+X
b10     .      . .XX
b13     .      .. +++X
b16     -      . -+XXX
b15     .- . . --+X-++X
b19     .      . ..-+---X
b9      .-... . .--+--- X
b11     . . .      -+---..X
b7      .      ..      . X
b17     .      . . . . . .X

```

The entries in this correlation matrix have been printed according to the following scheme:

		less than or equal to	0.109,
.	0.109	to and including	0.219,
-	0.219	to and including	0.328,
+	0.328	to and including	0.437,
X		greater than	0.437.

Appendix H.3

RESULTS OF RELIABILITY AND VALIDITY OF HSCS SCALE

Table H.3.11. Terminology used in the test-retest of HSCS scale

In this study, the items are referred to as follows:

<i>Scale:</i> HSCS	<i>Pre variables:</i> Test	<i>Post variables:</i> Retest
<i>Frequency of use of the 20 items:</i>	f1x, f2x, f3x, f4x, f5x, f6x, f7x, f8x, f9x, f10x, f11x, f12x, f13x, f14x, f15x, f16x, f17x, f18x, f19x, f20x.	f1y, f2y, f3y, f4y, f5y, f6y, f7y, f8y, f9y, f10y, f11y, f12y, f13y, f14y, f15y, f16y, f17y, f18y, f19y, f20y.
<i>Helpfulness of the 20 items:</i>	h1x, h2x, h3x, h4x, h5x, h6x, h7x, h8x, h9x, h10x, h11x, h12x, h13x, h14x, h15x, h16x, h17x, h18x, h19x, h20x.	h1y, h2y, h3y, h4y, h5y, h6y, h7y, h8y, h9y, h10y, h11y, h12y, h13y, h14y, h15y, h16y, h17y, h18y, h19y, h20y.

In brief, the nomenclature of the variables can be described as follows:

f refers to frequency, *h* refers to helpfulness, the integer *n* refers to item number *n*, which can take values from 1 to 20, *x* refers to test (or pre) variables, whilst *y* refers to retest (or post) variables. Thus for example, h14y refers to the helpfulness of the 14th item in the retest. The other variables can be interpreted in a similar manner. Every item is therefore represented by four variables, frequency and helpfulness in both test and retest. As can be seen below, these four variables are mainly interchangeable.

Table H.3.12. Correlations and Test-Retest Reliability.

The association between the pre and the post values of the frequency and helpfulness of each item in the HSCS scale is assessed using Spearman's Coefficient of Correlation. These are given for the English, Maltese, back-translation and bilingual versions of the HSCS scale, and for all groups together. In this Table, the correlation between the frequency and helpfulness of each item are given in the test and the retest separately. Most of the cross tabulations given below yielded a highly significant value of χ^2 ($p < 0.0001$) for most items for each of the five groups of scales.

HSCS Scale: Spearman Correlation ρ .

For each item,

first line gives ρ for frequency between the test and the retest,

second line gives ρ for helpfulness test vs retest,

third line gives ρ for frequency vs helpfulness in the test, whilst

line four gives ρ for frequency vs helpfulness in the retest.

Variables	Original (English)	Maltese	Back Translation	Bilingual	All Groups
N subjects	52	53	54	49	208
f1x-f1y	0.54	0.48	0.38	0.62	0.50
h1x-h1y	0.63	0.56	0.54	0.56	0.57
f1x-h1x	0.57	0.51	0.55	0.47	0.52
f1y-h1y	0.35	0.36	0.26	0.27	0.31
f2x-f2y	0.77	0.78	0.66	0.76	0.74
h2x-h2y	0.66	0.68	0.74	0.68	0.69
f2x-h2x	0.81	0.72	0.63	0.76	0.73
f2y-h2y	0.64	0.70	0.71	0.75	0.70
f3x-f3y	0.46	0.43	0.42	0.40	0.43
h3x-h3y	0.34	0.37	0.37	0.42	0.37
f3x-h3x	0.59	0.50	0.54	0.57	0.55
f3y-h3y	0.34	0.27	0.43	0.45	0.38
f4x-f4y	0.57	0.59	0.62	0.56	0.59
h4x-h4y	0.63	0.62	0.67	0.61	0.63
f4x-h4x	0.79	0.75	0.83	0.88	0.80
f4y-h4y	0.78	0.71	0.79	0.84	0.78
f5x-f5y	0.55	0.58	0.65	0.66	0.61
h5x-h5y	0.67	0.53	0.75	0.71	0.66
f5x-h5x	0.68	0.72	0.65	0.72	0.69
f5y-h5y	0.66	0.65	0.69	0.78	0.69

f6x-f6y	0.67	0.67	0.67	0.79	0.70
h6x-h6y	0.69	0.63	0.68	0.72	0.68
f6x-h6x	0.85	0.84	0.85	0.90	0.86
f6y-h6y	0.62	0.57	0.63	0.93	0.68
f7x-f7y	0.34	0.30	0.33	0.51	0.37
h7x-h7y	0.48	0.48	0.62	0.57	0.54
f7x-h7x	0.79	0.76	0.76	0.83	0.78
f7y-h7y	0.59	0.50	0.56	0.86	0.62
f8x-f8y	0.29	0.30	0.31	0.64	0.37
h8x-h8y	0.64	0.60	0.57	0.64	0.61
f8x-h8x	0.95	0.92	0.94	0.94	0.94
f8y-h8y	0.48	0.33	0.44	0.92	0.53
f9x-f9y	0.43	0.35	0.52	0.58	0.47
h9x-h9y	0.26	0.23	0.36	0.26	0.28
f9x-h9x	0.62	0.57	0.61	0.61	0.60
f9y-h9y	0.29	0.48	0.31	0.52	0.40
f10x-f10y	0.58	0.49	0.51	0.66	0.56
h10x-h10y	0.73	0.68	0.73	0.70	0.71
f10x-h10x	0.90	0.88	0.88	0.92	0.89
f10y-h10y	0.57	0.52	0.53	0.87	0.61
f11x-f11y	0.27	0.21	0.33	0.37	0.29
h11x-h11y	0.37	0.18	0.32	0.33	0.30
f11x-h11x	0.84	0.71	0.60	0.81	0.74
f11y-h11y	0.42	0.43	0.37	0.68	0.47
f12x-f12y	0.19	0.18	0.14	0.38	0.22
h12x-h12y	0.54	0.52	0.56	0.46	0.52
f12x-h12x	0.77	0.58	0.61	0.66	0.66
f12y-h12y	0.35	0.33	0.30	0.59	0.39
f13x-f13y	0.64	0.65	0.51	0.72	0.62
h13x-h13y	0.48	0.38	0.55	0.51	0.48
f13x-h13x	0.62	0.63	0.60	0.69	0.63
f13y-h13y	0.44	0.59	0.59	0.71	0.58
f14x-f14y	0.52	0.52	0.44	0.70	0.54
h14x-h14y	0.67	0.53	0.63	0.64	0.62
f14x-h14x	0.65	0.61	0.63	0.70	0.65
f14y-h14y	0.36	0.39	0.51	0.59	0.46

f15x-f15y	0.54	0.46	0.55	0.61	0.54
h15x-h15y	0.50	0.53	0.50	0.48	0.50
f15x-h15x	0.61	0.56	0.63	0.67	0.62
f15y-h15y	0.65	0.52	0.45	0.65	0.57
f16x-f16y	0.51	0.64	0.61	0.56	0.59
h16x-h16y	0.48	0.41	0.43	0.47	0.45
f16x-h16x	0.66	0.57	0.55	0.68	0.61
f16y-h16y	0.54	0.61	0.73	0.76	0.66
f17x-f17y	0.66	0.55	0.49	0.81	0.61
h17x-h17y	0.45	0.57	0.36	0.60	0.49
f17x-h17x	0.68	0.65	0.63	0.78	0.68
f17y-h17y	0.46	0.47	0.49	0.58	0.49
f18x-f18y	0.50	0.62	0.47	0.57	0.54
h18x-h18y	0.60	0.66	0.59	0.62	0.61
f18x-h18x	0.64	0.68	0.63	0.66	0.65
f18y-h18y	0.44	0.40	0.37	0.48	0.42
f19x-f19y	0.56	0.54	0.48	0.69	0.56
h19x-h19y	0.65	0.66	0.70	0.67	0.67
f19x-h19x	0.82	0.72	0.70	0.88	0.78
f19y-h19y	0.70	0.73	0.72	0.86	0.75
f20x-f20y	0.13	0.28	0.18	0.36	0.22
h20x-h20y	0.60	0.47	0.60	0.57	0.55
f20x-h20x	0.55	0.50	0.53	0.71	0.56
f20y-h20y	0.56	0.50	0.57	0.75	0.58

Table H.3.13. Internal Reliability of the HSCS Scale.

Factor Analysis was performed on the HSCS scale in the English, Maltese, back-translation and bilingual versions, and on all groups together. For each group, Cronbach's alpha (α) is reported for the variables comprising this scale. The test and retest versions of the frequency and helpfulness of each item are analysed separately for each of the five groups. For each factor analysis, we give the first three eigenvalues (λ), the number of factors each explaining more than 10% of the variance, (most often this number is 2), and the percentage variance explained by the first two factors. The two factor structure of the items in the HSCS scale is discussed further in the text, and in Tables 9, 10 and 11.

Variables	Parameter	Original	Maltese	Back T.	Bilingual	All Groups
-----------	-----------	----------	---------	---------	-----------	------------

The HSCS scale, *test only*, 20 items for each analysis.

Frequency	α	.73	.68	.65	.75	.71
<i>Test only:</i>	$\lambda > 2.0$	2	2	2	2	2
<i>f1x-f20x.</i>						
	$\lambda =$	4.21,	3.77,	3.81,	4.10,	3.89,
		2.87,	2.35,	2.46,	2.84,	2.59,
		1.90.	1.84.	1.86.	1.99.	1.81.
	%variance explained by first 2 factors:	35%	31%	31%	35%	32%
Helpfulness	α	.75	.63	.75	.74	.73
<i>Test only:</i>	$\lambda > 2.0$	2	2	2	2	2
<i>h1x-h20x.</i>						
	$\lambda =$	4.01,	3.43,	3.99,	3.95,	3.78,
		2.48,	2.18,	2.47,	2.40,	2.33,
		1.83.	1.92.	1.74.	1.82.	1.78.
	%variance explained by first 2 factors:	32%	28%	32%	32%	31%

continued ...

Variables	Parameter	Original	Maltese	Back T.	Bilingual	All Groups
-----------	-----------	----------	---------	---------	-----------	------------

The HSCS scale, *retest only, 20 items for each analysis.*

Frequency	α	.71	.67	.68	.77	.71
<i>Restest only:</i>	$\lambda > 2.0$	2	3	2	2	2
<i>f1y-f20y.</i>						
	$\lambda =$	3.95,	3.54,	3.67,	4.55,	3.84,
		2.74,	2.71,	2.93,	3.17,	2.82,
		1.89.	2.12.	1.93.	1.87.	1.83.
%variance explained						
by first 2 factors:		33%	31%	33%	39%	33%
Helpfulness	α	.81	.73	.79	.82	.79
<i>Restest only:</i>	$\lambda > 2.0$	2	2	2	2	2
<i>h1y-h20y.</i>						
	$\lambda =$	4.72,	4.09,	4.34,	5.07,	4.43,
		2.68,	2.58,	2.39,	2.90,	2.48,
		1.73.	1.69.	1.77.	1.70.	1.60.
%variance explained						
by first 2 factors:		37%	33%	34%	40%	35%

Table H.3.14. Cluster analysis of the 20 items in the HSCS Scale.

The correlations between the helpfulness of all 20 items in the HSCS scale are calculated for the HSCS in the bilingual version, namely the 4'th group. Only the retest version of the variables (h1y to h20y) are considered. Cluster analysis with average linkage is then performed on the absolute values of these correlations. In this technique, the items are reordered so that clusters of items with high correlations are grouped together. A standard output of this technique is the sorted and shaded correlation matrix, with denser symbols representing larger correlations and vice-versa.

The sorted and shaded correlation matrix clearly shows that the items separate naturally into two distinct clusters. One cluster is made up of the items 1, 2, 4, 6, 8, 10, 15, 18, 19, whilst another cluster is composed of items 5, 7, 9, 11, 12, 16, 17. The first cluster of items includes the religious coping strategies, based mainly on the subject's attitude towards religion and his/her belief in God, whilst the second cluster comprises the humanistic coping strategies, ie. those items based on the subject's attitude towards him/herself and towards fellow humans. This correlation structure is also observed in each of the other three groups when they are taken separately and when taken together. The same structure can be observed if one uses the test variables or the frequency variables.

```

h1y      X
h15y     XX
h2y      XXX
h18y     X++X
h4y      +-+.X
h6y      +X+-XX
h19y     +X++XXX
h8y      ---+X-X
h10y     ... --XX
h5y      -    --X
h11y     -...-. .XX
h17y     . . . . ++X
h7y      +-X .--. ...X
h16y     ..-. .- ...+X
h9y      +.-.. . ++--X
h12y     . ... .- ++X
h13y     - . . . . -.-X
h20y     -. .- .. .+X
h3y      . . . . .X
h14y     . . . -.-. -.-X

```

The entries in this correlation matrix have been printed according to the following scheme:

.	0.123	less than or equal to	0.123,
-	0.245	to and including	0.245,
+	0.368	to and including	0.368,
X		greater than	0.491.

Table H.3.15. Sorted and shaded correlation matrix obtained from a factor analysis assuming a two-factor solution.

All 80 variables are considered (both frequency and helpfulness in test and retest versions) and the analysis is performed on the four groups pooled together. As seen in Table III, two factors seem to be sufficient to describe the HSCS scale adequately. This was also observed by the present authors in the case of the Jarel scale. *(Please quote reference here).*

h6y	X
f19y	-X
f15x	..-X
f4y	---X
h19x	---X
f19x	..++XX
f2y	..-..X
h15y	..-..X
h2y	..-..X
h19y	-X-++---X
h6x	..-..-X
h15x	..-..-X
h8x	..-..-X
h4y	..-X-..-X
h2x	..-..-X
f4x	..-..-X
h4x	..-..-X
f6y	..-..-X
f8x	..-..-X
f15y	..-..-X
f6x	..-..-X
f2x	..-..-X
f18x	..-..-X
h18x	..-..-X
h8y	..-..-X
f1x	..-..-X
h18y	..-..-X
h10x	..-..-X
f10x	..-..-X
h1y	..-..-X
f18y	..-..-X
f8y	..-..-X
f10y	..-..-X
f1y	..-..-X
h1x	..-..-X
f14x	..-..-X
h5y	..-..-X
f5y	..-..-X
f5x	..-..-X
h9y	..-..-X
h17y	..-..-X
f3x	..-..-X
f17y	..-..-X
f9y	..-..-X
h5x	..-..-X
f14y	..-..-X
h12x	..-..-X
h3x	..-..-X
h16x	..-..-X
h12y	..-..-X
h14x	..-..-X
h17x	..-..-X
h14y	..-..-X
f9x	..-..-X
f16x	..-..-X
f20y	..-..-X
h13y	..-..-X
f17x	..-..-X
h7x	..-..-X
h11x	..-..-X
f12x	..-..-X
f11y	..-..-X
h7y	..-..-X
f16y	..-..-X
f13y	..-..-X
h11y	..-..-X
f11x	..-..-X
h16y	..-..-X
h20y	..-..-X
h9x	..-..-X
f7x	..-..-X
f3y	..-..-X
f12y	..-..-X
f13x	..-..-X
f7y	..-..-X
h3y	..-..-X
f20x	..-..-X
h20x	..-..-X
h13x	..-..-X
h10y	..-..-X

The entries in this correlation matrix have been printed according to the following scheme:

.	0.185	less than or equal to	0.185,
-	0.369	to and including	0.369,
+	0.554	to and including	0.554,
X		greater than	0.738.

Table H.3.16. Two factor solution for the items in the HSCS scale.

The two factor solution is worked out for each group separately and for all the four groups together. For comparison, we give the loadings of each item on each factor for the different groups. For clarity, items which have loadings greater than 0.4 on Factor 1 are given first, followed by items which have loadings greater than 0.4 for Factor 2. Finally, items which have loadings on only one or two of the groups, or have loadings smaller than 0.4 are listed last.

It can be seen that the factor structure remains very similar across the four groups. Factor 1 is made up of the items 1, 2, 4, 6, 8, 10, 15, 18, 19 in every group, whilst Factor 2 includes the items 5, 7, 9, 11, 12, 14, 17 in most groups. This factor structure remains practically unaltered if the test variables or the frequency variables are used. In the bottom rows, we give for each group, the variance explained by the two factors (VP), Cronbach's alpha (α) for the two factors, and the coefficient of correlation (ρ) between the two factors.

\Group Items	Factor 1					Factor 2				
	Eng	Mal	BaT	Bil.	All	Eng	Mal	BaT	Bil.	All
h1y	.54	.60	.55	.60	.57	.32	.31	.34	.39	.35
h2y	.63	.75	.65	.65	.69	.09	.13	.17	.20	.13
h4y	.59	.49	.58	.66	.59	.16	.26	.12	-.03	.12
h6y	.85	.78	.82	.82	.81	-.16	-.16	-.10	-.14	-.12
h8y	.75	.68	.66	.72	.68	-.33	-.31	-.19	-.29	-.25
h10y	.68	.53	.43	.63	.40	-.17	-.49	-.18	-.41	-.20
h15y	.71	.73	.58	.71	.70	.14	.01	.16	.13	.09
h18y	.60	.54	.62	.54	.59	.08	.13	.07	.20	.11
h19y	.58	.61	.63	.66	.62	.16	.09	.00	.14	.10
h5y	-.18	-.13	-.06	-.20	-.14	.70	.65	.50	.75	.64
h7y	.15	.27	.16	.36	.24	.45	.39	.56	.50	.48
h9y	-.01	.21	.14	.09	.10	.69	.66	.66	.73	.69
h11y	-.06	.03	-.13	.04	-.05	.49	.27	.48	.66	.50
h12y	.10	.10	.13	.19	.11	.56	.55	.56	.48	.56
h14y	-.16	-.23	-.10	-.28	-.20	.53	.34	.39	.46	.43
h17y	-.02	-.09	-.12	.01	-.08	.64	.59	.59	.59	.61
h3y	.00	-.11	.00	.03	-.03	.09	.21	.37	.19	.23
h13y	.14	.07	.09	.29	.12	.38	.34	.47	.13	.36
h16y	.18	.16	.03	.21	.15	.38	.30	.41	.40	.38
h20y	.23	.11	.21	.32	.19	.34	.23	.39	.01	.27
VP	4.18	3.94	3.64	4.55	3.87	3.16	2.70	2.96	3.33	2.94
α	0.82	0.77	0.79	0.78	0.79	0.74	0.59	0.71	0.73	0.70
$\rho(f1-f2)$	0.21	0.09	0.16	0.16	0.15					

Table I.1. Coding system of the H.S.C.S. scale

HSCS scale	
Since the 20 strategies are all positive statements, they were coded the same according to the following categories of the Frequency and Helpfulness scales.	
Frequency	Helpfulness
	X = not applicable
0 = never used	0 = not helpful
1 = seldom used (at least once in 6 months/year)	1 = slightly helpful
2 = sometimes used (at least once in a month)	2 = fairly helpful
3 = often used (at least once daily)	3 = very helpful

Table I.2. Coding system of Factor 1 : Anxiety of The HAD scale

HAD scale. Factor 1 : Anxiety	
1. I feel tense or 'wound up'	(3) Most of the time;(2) a lot of the time;(1) From time to time, occasionally;(0)not at all
3. I get a sort of frightened feeling as if something awful is about to happen	(3) very definitely and quite badly ; (2) yes, but not too badly; (1) a little, but it doesn't worry me; (0) not at all
5. Worrying thoughts go through my mind	(3) A great deal of the time; (2) A lot of the time; (1) From time to time but not too often; (0) only occassionally
7. I can sit at ease and feel relaxed	(0) Definitely (1) usually (2) not often (3) not at all
9. I get a sort of frightened feeling like 'butterflies' in the stomach	(0) not at all; (1) occasionally; (2) quite often; (3) very often
11. I feel restless as if I have to be on the move	(3) very much indeed; (2) quite a lot; (1) not very much; (0) not at all
13. I get sudden feelings of panic	(3) very often indeed; (2) quite often; (1) not very often; (0) not at all

Table I.3. Coding system of Factor 2 : Depression of The HAD scale

HAD scale. Factor 2 : Depression	
2. I still enjoy the things I used to enjoy	(0) definitely as much; (1) not quite so much; (2) only a little; (3) hardly at all.
4. I can laugh and see the funny side of things	(0) as much as I always could; (1) not quite so much now; (1) (2) definitely not so much now; (3) not at all
6. I feel cheerful	(3) not at all; (2) not often; (1) sometimes; (0) most of the time
8. I can sit at ease and feel relaxed	(3) nearly all the time; (2) very often; (1) sometimes; (0) not at all
10. I have lost interest in my appearance	(3) definitely; (2) I don't take so much care as I should; (1) I may not take quite as much care; (0) I take just as much care as ever
12. I look forward with enjoyment to things	(0) as much as ever I did; (1) rather less than I used to (1) (2) definitely less than I used to; (3) hardly at all
14. I can enjoy a good book or radio or TV programme	(0) often; (1) sometimes; (2) not often; (3) very seldom

Table I.4. Coding system of Factor 1 : Existential well-being of JAREL SWB scale

JAREL SWB scale. Factor 1 : Existential well-being	
3. As I grow older, I find myself more tolerant of others' beliefs	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
4. I find meaning and purpose in my life	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
9. I am able to receive and give love to others	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
10. I am satisfied with my life	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
11. I set goals for myself	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
13. I am satisfied with the way I am using my abilities	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
15. I am able to appreciate differences in others	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
16. I am pretty well put together	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
19. I accept my life situations	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
Additional statements: Factor 1 : Existential well-being	
17. I prefer that others make decisions for me	(1) strongly agree; (2) moderately agree; (3) agree (4) disagree (5) moderately disagree (6) strongly disagree
21. I cannot accept change in my life	(1) strongly agree; (2) moderately agree; (3) agree (4) disagree (5) moderately disagree (6) strongly disagree

Table I.5. Coding system of Factor 2 : Religious well-being of JAREL SWB scale

JAREL SWB scale. Factor 2 : Religious well-being	
1. Prayer is an important part of my life	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
2. I believe I have spiritual well-being	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
5. I feel there is a close relationship between my spiritual beliefs and what I do	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
6. I believe in an afterlife	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
8. I believe in a supreme power	(6) strongly agree; (5) moderately agree; (4) agree (3) disagree (2) moderately disagree (1) strongly disagree
12. God has little meaning in my life	(1) strongly agree; (2) moderately agree; (3) agree (4) disagree (5) moderately disagree (6) strongly disagree
14. Prayer does not help me in making decisions	(1) strongly agree; (2) moderately agree; (3) agree (4) disagree (5) moderately disagree (6) strongly disagree
20. Belief in a supreme being has no part in my life	(1) strongly agree; (2) moderately agree; (3) agree (4) disagree (5) moderately disagree (6) strongly disagree
Additional statements: Factor 2 : Religious well-being	
7. When I am sick I have less spiritual well-being	(1) strongly agree; (2) moderately agree; (3) agree (4) disagree (5) moderately disagree (6) strongly disagree
18. I find it hard to forgive others	(1) strongly agree; (2) moderately agree; (3) agree (4) disagree (5) moderately disagree (6) strongly disagree

Table I.6. Coding system of personal characteristics with 2 categories: gender, marital status, ihd, angina, class, living alone/with others, religious affiliation, location of residence in Malta.

Characteristic	Coding of categories	Characteristic	Coding of categories
Gender	1 = male 2 = female	Marital status	1 = widow/er, single separated, 2 = married
History of IHD Isch. Heart disease	1 = past history 2 = no past history	History of Angina	1 = past history 2 = no past history
Class/occupation	1 = skilled occupation 2 = unskilled	Location of residence In Malta	1 = north of Malta 2 = south of Malta
Religious Affiliation	1 = no religion 2 = Roman Catholic	Living alone/with others	1 = living alone 2 = living with others

Table I.7. Coding system of personal characteristics with more than 2 categories: age, education, relationship with God, church attendance and drug treatment which influence mood states.

Characteristic	Coding of categories	Characteristic	Coding of categories
Education	1 = 4-7 years 2 = 8-12 years 3 = 13-20 years	Relationship with God	1 = no relationship 2 = uncertain 3 = with relationship
Age	1 = 40-49 years 2 = 50-59 years 3 = 60 –69 years 4 = 70-79 years 5 = 80-89 years	Church attendance for religious practices	1 = never 2 = very rare 3 = rarely 4 = occasionally 5 = often 6 = very often
Drug treatment which may influence mood states	1 = No Beta blockers , no sedatives, no antidepressants 2 = On Beta blockers only 3 = On sedatives only 4 = On antidepressants only 5 = On Beta blockers and sedatives		

Table I.8. Categories of total scores of anxiety, depression and spiritual well-being

Variable	Coding of categories
Anxiety and Depression	1 = normal level (0-7) 2 = mild level (8-10) 3 = moderate level (11-14) 4 = severe level (15-21)
JAREL SWB and JAREL SWB (VAS)	1 = 110 – 130 2 = 131 – 150 3 = 151 – 170 4 = 171 – 190 5 = 191 - 210
Rank order of spiritual coping strategies	1 = 5 th rank (least helpful) 2 = 4 th rank 3 = 3 rd rank 4 = 4 th rank 5 = 5 th rank (most helpful)

APPENDIX J.1.

Ms Donia Baldacchino.
 16, St. John's Street,
 Siggiewi.
 Malta QRM 13.
 e-mail: cbal1@ihc.um.edu.mt
 Fax No: (356) 244973 (Institute of Health Care)

22nd November, 2001

The Editor
 Aspen Publishers, Inc.,
 Permissions Department,
 200 Orchard Ridge Drive,
 Suite 200,
 Gaithersburg,
 MD 20878

Dear Editor,

I am Donia Baldacchino, doctoral student at the University of Hull, Yorkshire, UK. I conducted a longitudinal research study in Malta on *Spiritual coping strategies, mood states and spiritual well-being of patients with Myocardial Infarction*, under the supervision of Dr. Peter Draper and Mr. Gerald Bowman. Presently, I am writing up the thesis, hopefully to be submitted by January 2002.

Part of my literature review consists of a discussion about the spiritual dimension of a person. To enhance comprehension of this complex concept, I would like to include the following diagram,

Figure 1-5 : the Bio-Psycho-Social-Spiritual Model (p.19) from the book named, *Holistic Nursing*, by Dossey B.M., Keegan L., Guzzetta C.E., Kolkmeier L.G. (1995), ISBN: 0-8342-0574-2.

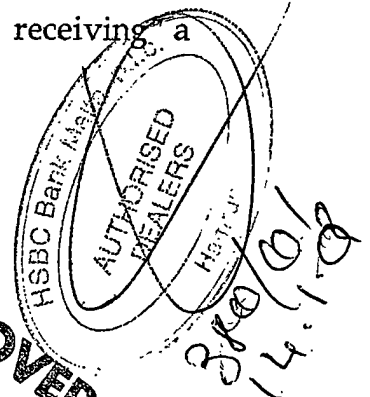
Could you kindly give me permission to use the above mentioned figure according to the copyright regulations. Correspondence may be sent to me on the above address/ e-mail. Whilst thanking you, I look forward to receiving a positive response soon.

Yours' sincerely,

Donia Baldacchino

Donia Baldacchino.

PLEASE TURN OVER





HSBC Bank Malta p.l.c.
233, Republic Street, Valletta VLT 05, Malta

Branch: Payments Serv Dept

Date: 14 JAN 2002

COVERING ADVICE FOR CASHIER'S ORDER/BANK CHEQUE/DEMAND DRAFT ISSUED:

We enclose our Cashier's Order/Cheque/Demand Draft No. 034121

Drawn on HSBC BANK USA NEW YORK

For USD 35.00** issued at the request of MARY DOLORES FARRUGIA

In favour of ASPEN PUBLISHERS INC*

Details:

HSBC BANK MALTA PLC
HAMRUN



Note: Authorised signature not required if computer generated validation is printed.

TT/DD AMT	USD	*35.00	DR CCY/AMT	USD	*35.00
TRN REFERENCE	DD MTA034121MNY				
CHARGE CURRENCY	USD				
COMMISSION	*0.00				
POSTAGE	*0.00				
CABLE	*0.00				
STAMP DUTY	*0.00				
TOTAL CHARGES USD			TOTAL CHG		
A/C No./NAME	090-910126-850	SUSPENSE A/C-TELEGRAPHIC TRF	TOTAL COST USD		
23/USD35					
NAR					
14JAN02 18:14 090 AR17B 0251 C818					
DD ADV N EC FORM 380/01					

1-3 Baxter's Place
Leith Walk
Edinburgh
EH1 3AF

tel - 0131-524 1747
fax - 0131-524 1720

14 January, 2002

Ms. Donia Baldacchino
16 St John's Street
Siggiewi
QRM 13
Malta

Dear Ms. Baldacchino,

SUBJECT: COPYRIGHT CLEARANCE FOR THESIS:

1 x figure: The nature of the Spiritual Dimension, page 3, Stoter, *Spiritual Aspects of Health Care*, 1995, Mosby, 0723419558

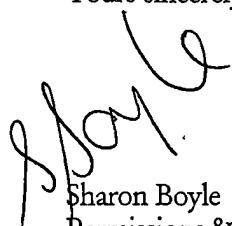
Thank you for your letter requesting permission to use the above material.

We are happy to grant permission for this use of our material provided that:

1. complete credit is given to the source, including the Mosby copyright notice
2. the material to be used has appeared in our publication without credit or acknowledgement to another source
3. if commercial publishing should arise, you must contact us again to clear copyright

We understand that microfilm publication of your thesis and abstract may be a requirement of your university under an agreement made with University Microfilms, Inc (UMI) and we agree to distribution of your thesis by UMI. We would point out, however, that no permission is granted for other sale of this material.

Yours sincerely,



Sharon Boyle
Permissions & Copyright Executive
Churchill Livingstone, Mosby, WB Saunders, Baillière Tindall

RCN PUBLISHING COMPANY

FOR PHOTOCOPY/REPRODUCTION OF ARTICLES ONLY

Barbara Hancock . Figure 2 Nightingale's conception of holism from article.
Are nursing theories holistic? *Nursing Standard* January 12, vol 14, no 17 2000
p. 37-41.

Please note: The article/s should be fully acknowledged with the name of the author/s and relevant magazine.

COPYRIGHT FEES/ROYALTIES

The fee required for copyright will be discretionary but all copyright release for commercial purposes will be charged at £100 per 1,000 words minimum.

The fee will be waived at the editor's discretion where copyright clearance is requested for educational or charitable purposes.

The fee charged where appropriate will appear on the bottom section of this form once copyright release has been granted and the signed form has been returned to you. Payment should be made within 14 days of receipt.

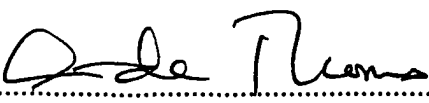
SIGNED : see attached letter

DATE RECEIVED : 22.11.01

NAME: Donia Baldacchino

DESIGNATION: 16 St John's Street, Siggiewi. Malta QRM 13.

RCN Publishing Co Ltd hereby agrees to release copyright for the purposes specified above. There will be no fee ~~a fee of £.....~~ which is payable within 14 days of receipt of this copyright clearance.

Signed: 

Date: 17.1.02

Linda Thomas, Editor in Chief, *RCN Publishing Company*

RCN Publishing Company Ltd, Nursing Standard House, 17-19 Peterborough Road, Harrow, Middlesex HA1 2AX
Telephone 020 8423 1066

Registered Office: 20 Cavendish Square, London W1G 0RN. Registered in England No. 2119155

Ms Donia Baldacchino.
16, St. John's Street,
Siggiewi.
Malta QRM 13.
e-mail: cball1@ihc.um.edu.mt
Fax No: (356) 244973 (Institute of Health Care)

RECEIVED

DEC 17 2001

PERMISSIONS

Appendix J.4.

22nd November, 2001

The Editor
W.B. SAUNDERS COMPANY,
A Division of Harcourt Brace and Company,
The Curtis Centre,
Independence Square West,
Philadelphia,
Pennsylvania 19106.
United States of America.

Dear Editor,

I am Donia Baldacchino, doctoral student at the University of Hull, Yorkshire, UK. I conducted a longitudinal research study in Malta on *Spiritual coping strategies, mood states and spiritual well-being of patients with Myocardial Infarction*, under the supervision of Dr. Peter Draper and Mr. Gerald Bowman. Presently, I am writing up the thesis, hopefully to be submitted by January 2002.

Part of my literature review consists of a discussion about the spiritual dimension of a person. To enhance comprehension of this complex concept, I would like to include the following diagram,

Figure 1-1 : The person's interrelatedness (p.19) from the book named,
Spiritual Dimensions of Nursing Practice by Verna Benner Carson (1989),
ISBN: 0-7216-2249-6

Could you kindly give me permission to use the above mentioned figure according to the copyright regulations. Correspondence may be sent to me on the above address/ e-mail. Whilst thanking you, I look forward to receiving a positive response soon.

Yours' sincerely,



Donia Baldacchino.

565

NO ELECTRONIC RIGHTS.
PRINT MEDIA ONLY.

Permission granted by the copyright owner provided complete credit is given to original source, and provided material to be used has appeared in our publication without credit or acknowledgment to another source.

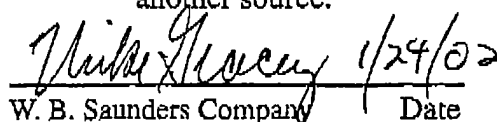

W. B. Saunders Company Date

Table K.1. Active Religious Movements in Malta**APPENDIX K.1.**

Name	Foundation year	Approximate number of members
Ananda Marga Progressive Women's Spiritual Association	unknown	unknown
Bahai	1953	40
Bible Baptist Church	1985	60
Church of Christ	1974	unknown
Church of England		unknown :English persons
Christadelphians	unknown	Members from UK
Evangelical Baptist church	unknown	unknown
Evangelical Trinity Church	1990	20
Free Masonry	unknown	unknown
Jehova Witnesses	1920	532
Mormons: The Church of Jesus Christ of Latter-Day Saints	1988	American missionaries come to Malta for a period of 2 years
Mosta Full Gospel Praise Centre	unknown	unknown
New Age	unknown	unknown
New Apostolic Church	1982	18
One Holy Catholic Apostolic and Palmarian Church	1974	2
Philadelphia Church of God	unknown	21
Rosicrucian	unknown	unknown
Satanism	unknown	unknown
Societology	unknown	1
Seventh Day Adventists	1977	17
Unification Movement (Moonies)	1973	60
Worldwide Church of God (Plain Truth)	1977	19
Zen (Buddhist)	1996	unknown

APPENDIX K2

Characteristics of the recruited sample, alternate and excluded groups

1. Personal Characteristics of recruited sample, alternate and excluded groups.

Table K2.1. Gender of original recruited sample, alternate and excluded groups.

Gender	Recruited sample		Alternate sample		Excluded sample	
	n=70		n= 68		n=103	
	No	%	No	%	No	%
male	46	65.7	55	80.9	66	64.1
female	24	34.3	13	19.1	37	35.9
Total	70	100	68	100	103	100

Table K2.1. shows that the majority of patients throughout all the three groups are male patients.

Table K2.2. Age of original recruited sample, alternate and excluded groups

Age	Recruited sample		Alternate sample		Excluded sample	
	n= 70		n=68		N=103	
	No	%	No	%	No	%
40 - 44	9	12.9	1	1.5	5	4.9
45 - 49	2	2.9	4	5.9	9	8.7
50 - 54	8	11.4	9	13.2	8	7.8
55 - 59	12	17.1	7	10.3	8	7.8
60 - 64	9	12.9	13	19.1	12	11.7
65 - 69	10	14.3	15	22.1	13	12.6
70 - 74	8	11.4	11	16.2	18	17.4
75 - 79	5	7.1	6	8.8	12	11.7
80 - 84	6	8.6	2	2.9	9	8.7
85 - 89	1	1.4	0	0.0	7	6.8
Total	70	100	68	100	103	100

Table K2.2. demonstrates that the age group with the highest number of patients with MI in the recruited group is 55-59 years (n=12, 17.1%), alternate group is 65-69 years (n=15, 22.1%) and excluded group is 70-74 years (n=18, 17.5%). Thus Table K2.1. and Table K2.2. show that the majority of reasons of MI may be due to older age.

Table K2.3. Location of residence in Malta of original recruited sample, alternate and excluded groups.

Location in Malta	Recruited sample		Alternate sample		Excluded sample	
	n= 70		n=68		n=103	
	No	%	No	%	No	%
North	38	54.3	43	63.2	65	63.1
South	32	45.7	25	36.8	38	36.9
Total	70	100	68	100	103	100

Table K2. 3 shows that majority of patients are from the north of Malta.

2. Mental Test score and reasons for exclusion of patients

Table K2.4. Mental Test score of original recruited sample and alternate group

Total score	Recruited sample		Alternate group		Total	
	n= 70		n=68			
	No	%	No	%	No	%
8.0	3	4.3	2	2.9	5	7.1
8.5	8	11.4	21	30.9	29	41.4
9.0	14	20.0	21	30.9	35	50.0
9.5	13	18.6	15	22.1	28	18.6
10.0	32	45.7	9	13.2	41	5.9
Total	70	100	68	100		

Table K2.4 shows that the majority of recruited sample had a score of 9-10 (n=59, 80%), whilst the majority of the alternate group scored mostly between 8.5 - 9.0 (n=42, 61.8%).

Table K.2.5. Reasons for exclusion of sample of patients with MI in CCU

Reasons for exclusion of patients	CCU (T1) (n = 103)	
	No	%
Past history of MI	14	13.6
Past history of CABG	5	4.9
Blind: diabetic retinopathy	4	3.9
Refused to participate	5	4.9
Tourists	14	13.6
Foreigner retired in Malta (English speaking)	1	0.9
Discharged at request after 3 days in CCU	7	6.8
Transferred to a private hospital from CCU	1	0.09
Complicated due to medical disorders e.g heart block/pacemaker, renal failure	12	11.7
Complicated due to surgical disorders e.g. amputation, oesophageal ulcers, tracheostomy	6	5.8
Psychiatric illness- on anti-psychiatric drugs	2	1.9
No knowledge of her MI	1	0.09
Illiterate	13	12.6
Impaired hearing	6	5.8
Deaf and dumb	1	0.09
Awaiting for CABG during the first 3 months post MI	4	3.9
Dementia : Low Mental Test Score	6	5.8
Refugee: awaiting transfer to another county	1	0.09
Passed away on 2 nd day admitted to CCU (cardiogenic shock)	8	7.8

Table K2.5 shows a multitude of reasons why these patients were excluded. The major reasons were tourists (n=14, 13.6%), past history of MI (n=14, 13.6%), illiteracy (n=13, 12.6%) and certified as complicated due to medical disorders, secondary to their MI.

3. Medical Characteristics of original recruited sample

Table K2. 6. Location of MI of **original** recruited sample on CCU (T1)

Location of MI	n=70	
	No	%
Anterior	18	25.7
Inferior	30	42.9
Posterior	1	1.4
Lateral	2	2.9
Subendocardial	1	1.4
Ant - Inferior	1	1.4
Ant - Lateral	9	12.9
Ant - Posterior	1	1.4
Lateral - Posterior	1	1.4
Inferior - Lateral	1	1.4
Inferior - Posterior	5	7.2
Total	70	100

Table K2.6 demonstrates that the highest number of patients had inferior MI (n=30, 42.9 %) and anterior MI (n=18, 25.7%).

Table K2.7. Creatinine Phosphokinase (CPK) elevation on admission to CCU of original recruited sample on CCU (T1)

CPK range	n=70	
	No	%
400 – 1000 iu/l	41	58.5
1001 – 2000 iu/l	16	22.9
2001 – 3000 iu/l	9	12.9
3001 – 4000 iu/l	3	4.3
4001 + iu/l	1	1.4
Total	70	100

The patients were recruited when their CPK level on admission to CCU (T1) was elevated more than twice the upper limit of normal. (Normal level: 10 – 195 iu/l)

Table K2.7 shows that the highest CPK rise was between 400-1000 iu/l (n=41, 58.6%)

Table K2.8. Changes in ECG : ST elevation and / or ST depression of original recruited sample on CCU (T1)

No of ECG leads	ST elevation		ST depression		Total	
	n= 62		n=8			
	No	%	No	%	No	%
2	6	9.7	2	25.0	8	11.4
3	17	27.3	1	12.5	18	25.7
4	7	11.3	2	25.0	9	12.9
5	12	19.4	2	25.0	14	20.0
6	4	6.5	1	12.5	5	7.1
7	9	14.5	0	0.0	9	12.9
8	7	11.3	0	0.0	7	10.0
Total	62	100	8	100	70	100

Table K2.8 shows that the highest number of patients who had both ST elevation and ST depression was 18 (25.7%) whilst the highest number who had ST elevation in 3 ECG leads (n=17, 27.3%) followed by 12 patients having ST elevation in 5 ECG leads.

Table K2.9. Duration of hospital stay in CCU and medical ward of original recruited sample

Duration in days	CCU		Medical ward	
	n= 70		n=70	
	No	%	No	%
1 day	0	0	1	1.4
2 days	6	8.6	5	7.1
3 days	17	24.3	10	14.3
4 days	27	38.5	18	25.7
5 days	14	20.0	20	28.6
6 days	6	8.6	16	22.9
Total	70	100	70	100

To maintain a homogenous sample and lessen the number of confounding variables, the inclusion criteria included hospital stay for up to 4 days (plus or minus 1 day) in CCU and up to 5 days (plus or minus 1 day) in the medical ward. Thus, Table K2.9 shows that the majority of patients (n=27, 38.5 %) stayed in CCU for 4 days, whilst the majority (n=20, 28.6%) stayed for 5 days in the medical ward.

Table K2.10. Duration of hospital stay of original recruited sample

Duration in days of hospital stay	n=70	
	No	%
3 – 4 days	1*	1.4
5 – 6 days	34	48.6
7 – 8 days	29	41.4
9 –10 days	6**	8.6
Total	70	100

* Discharge at request after the first day in a medical ward

** Stayed in hospital, either because of public holidays or awaiting angiogram and / or angioplasty before discharge home.

Table K2.10 shows that the majority of patients (n=34, 48.6%), had a 5 to 6 days hospital stay with 29 patients (41.4%) staying for about a week.

4. Gender, attrition rate and reasons for attrition of sample across time.

Table K2.11. Attrition rate of sample over time (T1-T5)

Sample	T1 In CCU n=63		T2 On transfer to medical Ward n=63		T3 On discharge home n=53		T4 6 weeks after discharge n=53		T5 13 weeks after discharge n=51		TOTAL	
	No	%	No	%	No	%	No	%	No	%	No	%
Attrition of sample	0	0	7	10	10	14.3	0	0	2	2.8	19	27.1

Table K2.12 shows an overall attrition rate of 19 patients (27.1%). 17 patients were lost during the first two data collection times (T2 and T3), after which it remained stable.

Table K2.12. Gender of lost patients from sample over time

Gender of lost patients	T1 In CCU		T2 On transfer to med. ward		T3 On discharge home		T4 6 weeks after discharge		T5 13 weeks after discharge		TOTAL	
	No	%	No	%	No	%	No	%	No	%	No	%
male	0	0	5	7.1	7	10	0	0	1	1.4	13	18.6
female	0	0	2	2.9	3	4.3	0	0	1	1.4	6	8.5
Total	0	0	7	10	10	14.3	0	0	2	2.8	19	27.1

Table K2.12 shows that the majority of patients lost after 3 months (T5) were males (n=13, 18.6%). This is an acceptable proportion, as the majority of patients in the original recruited sample were males (n=46, 65.7%) (Table 2).

Table K2.13. Reasons for attrition of sample

Sample	T2 On transfer to medical Ward (n = 63)		T3 On discharge home (n = 53)		T4 6 weeks after discharge (n = 52)		T5 13 weeks after discharge (n = 51)		TOTAL (n=19)	
	No	%	No	%	No	%	No	%	No	%
Withdrew from the study	1	14.3	3	30	0	0	0	0	4	21.0
Discharge home from CCU	3	42.8	0	0	0	0	0	0	3	15.9
Developed complications of MI	1	14.3	2	20	0	0	0	0	3	15.9
Listed for CABG during data collection	1	14.3	4	40	0	0	0	0	5	26.0
Awaiting transfer to a State institution	1	14.3	0	0	0	0	0	0	1	5.1
Could not be traced	0	0	0	0	0	0	1	50	1	5.1
Died from a surgical condition (intestinal obstruction)	0	0	0	0	0	0	1	50	1	5.1
Died from aortic aneurysm	0	0	1	10	0	0	0	0	1	5.1
TOTAL	7	100	10	100	0	0	2	100	19	100

Table K2.13 shows that the majority of lost patients (n=5, 26%) were awaiting CABG, whilst 4 patients withdrew from the study, due to not able to keep appointments (n=4, 21%).

Pilot study : Quantitative data of sample**Table K3.1.** : Gender, marital status, social class, location of residence, living alone/with others, history of IHD and angina of sample in pilot study

Characteristics	Categories	n=7
Gender	Males	3
	females	4
Marital status	Married	5
	Single	2
Social class / occupation	Skilled	4
	Unskilled	3
Location of residence in Malta	North	5
	South	2
Living alone/with others	Living alone	2
	Living with others	5
History of IHD	No history of IHD	4
	Past history	3
History of angina	No history of angina	6
	Past history	1

Table K3.1. shows that the majority of patients are females (n=4), married (n=5), with skilled occupation (n=4), from north of Malta (n=5), living with others (n=5), no history of IHD (n=4) and no history of angina (6). Since this is a convenient sample, it is incomparable with research which provides evidence about the higher percentage of male patients with MI than females.

Table K3.2. Age, education, church attendance and drug treatment of sample in pilot study

Characteristics	Categories	n=7
Age	40 - 49 years	1
	50 – 59 years	2
	60 – 69 years	4
Years of education		
	4 - 7 years	1
	8 -11 years	4
	12 –15 years	2
Religious affiliation	Roman Catholic	7
Church attendance before MI	Very rare	1
	Often	1
	Very often	5
Drug treatment influencing mood states before admission to hospital	No B blockers, no sedatives, no antidepressants	3
	on B blockers only	2
	on sedatives	1
	on B blockers and sedatives	1
Drug treatment influencing mood states on transfer to the medical ward	on B blockers only	4
	on antidepressants only	3

Table 15 shows that the majority of patients were aged 60-69 years, with 8-11 years education. All patients were Roman Catholic and the majority attended church *very often* (n=5) for religious practices before MI. Since Table 1 shows 3 patients with past history of IHD and one with angina, this Table demonstrates that 3 patients were on Beta blockers before MI. On the medical ward, 4 patients were treated with Beta blockers, which according to research, has beneficial effects on the recovery of MI with consequent possible effect on reduction of stress (Hjalmarsen 1987).

Figure K3.1. Mean scores of religious, existential and total spiritual well-being, measured by JAREL SWB scale in Likert-form.

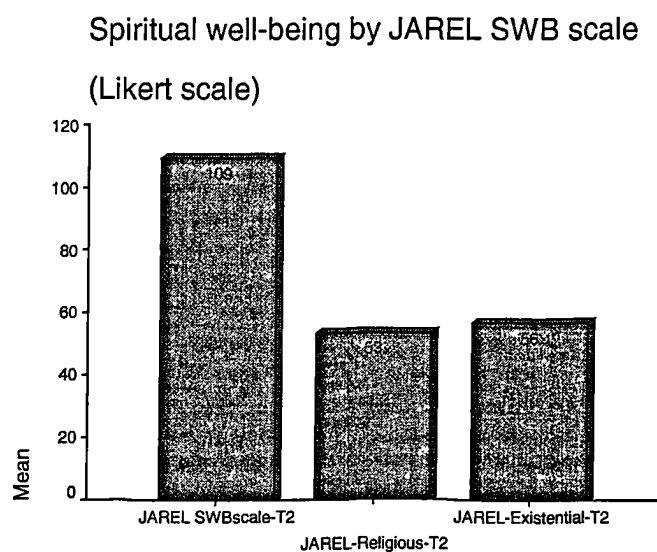
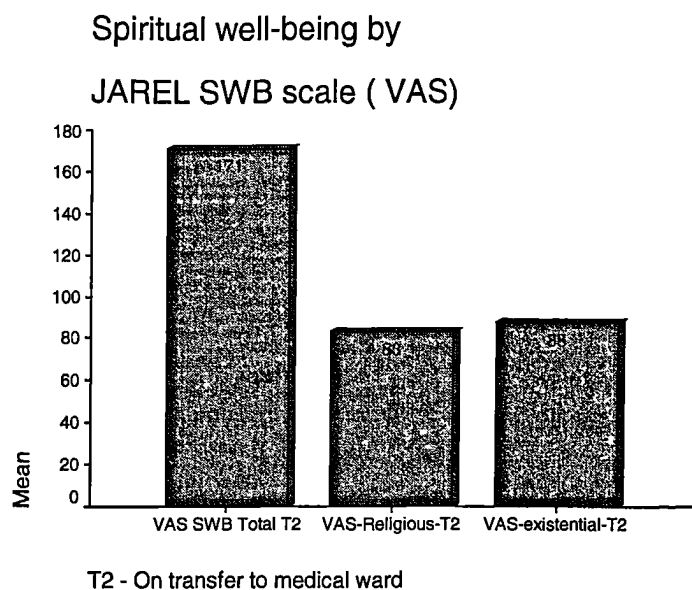


Figure K3.2. Mean scores of religious, existential and total spiritual well-being, measured by JAREL SWB scale in VAS form



Although no statistical analysis was done, Figures K.1. and K.2. demonstrate similar levels of religious, existential and total spiritual well-being.

Figure K.3.3. Anxiety and depression levels on the medical ward.

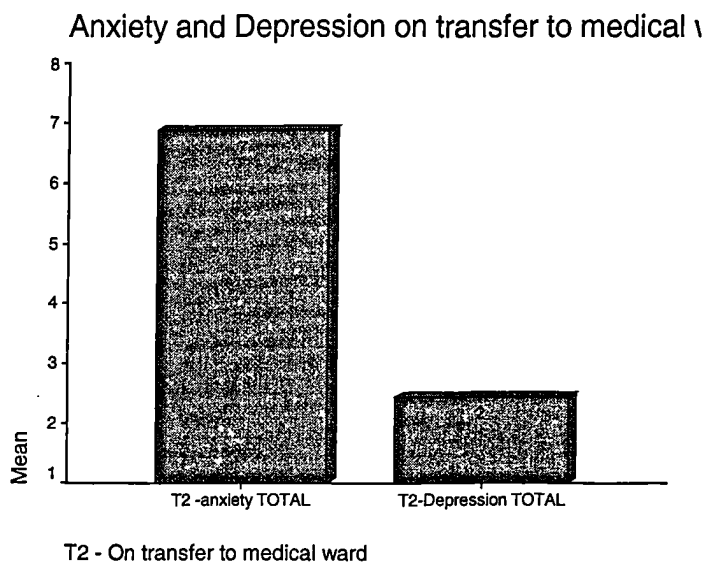


Figure K3.3. demonstrates higher levels of anxiety within normal levels of (0 – 7) and depression (0-7) on the medical ward. This is comparable with research whereby patients were found to have normal to mild anxiety (0-10) (Thompson 1987, 1986)

Figure K3.4. Frequency, Helpfulness and Use and Helpfulness (UH) of overall combined spiritual coping strategies on the medical ward.

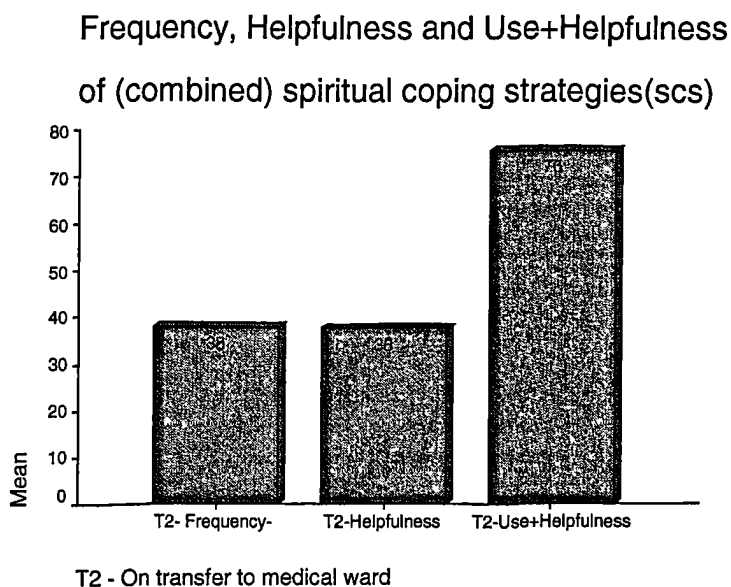


Figure K3.4. demonstrates similarity in the frequency and helpfulness of spiritual coping strategies. This supports the high correlation between them as found in the test-retest of HSCS on nursing students. This is seen also in Fig. 5 and 6.

Figure K3.5. Frequency, helpfulness and use and helpfulness (UH) of overall **religious** spiritual coping strategies on the medical ward.

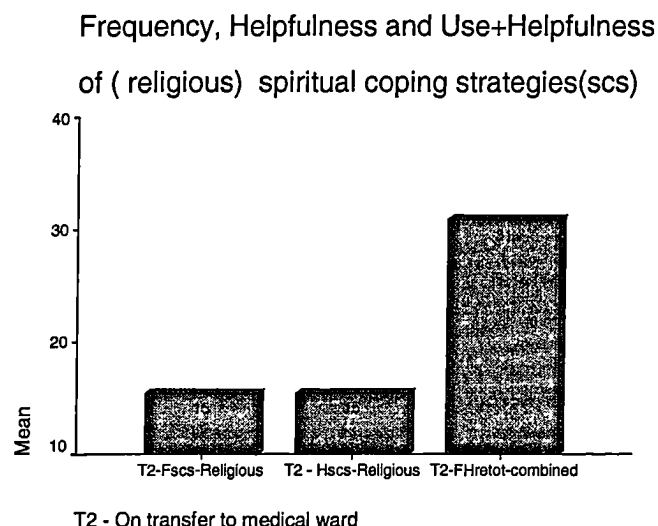
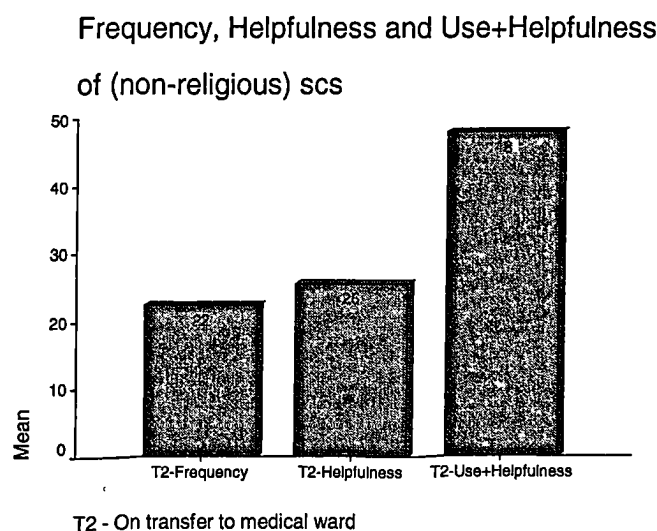


Figure K3.6. Frequency, Helpfulness and Use and Helpfulness (UH) of overall combined spiritual coping strategies on the medical ward.



Figures K3.4. – K3.6. demonstrate use and helpfulness of scs in the recovery period. This may explain the reason for having lower levels of both anxiety and depression within normal levels. Additionally a relationship may be found between spiritual coping strategies and high levels of SWB. This may be supported by the qualitative data which describe the reasons why the used scs were found helpful in their recovery period.

**Individual differences in scores of SCS across time
derived from HSCS scale.**

Figure K.4.1. Individual differences in the levels of (combined) SCS, six weeks after discharge (T4) against the original value during hospitalisation (T3)

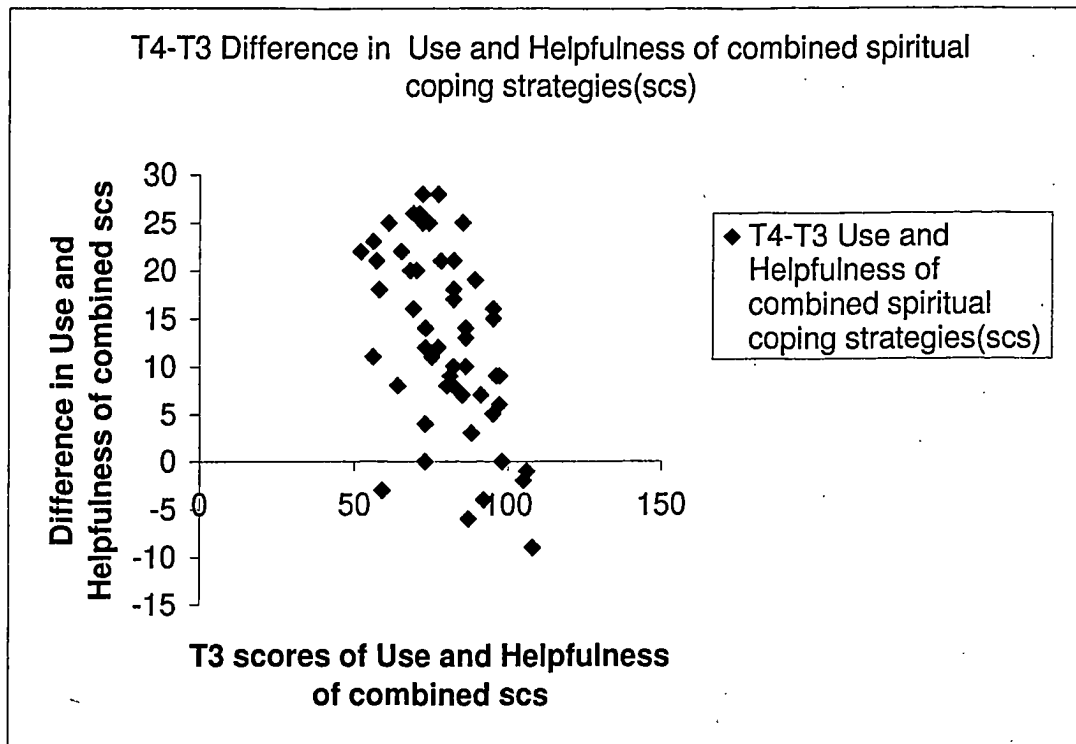


Figure K.4.1. shows that 84.9% of patients (n=45) reported increased combined SCS. The findings revealed that those patients who started off with extreme low scores in SCS on discharge home, that is during hospitalisation (T3), increased radically during the first six weeks after discharge (T4) between +4 and +28. Similarly, those patients who scored high in SCS increased their high scores across time.

Figure K.4.2. Individual differences in the levels of SCS (combined) 3 months after discharge (T5) against the original value on during hospitalisation (T3)

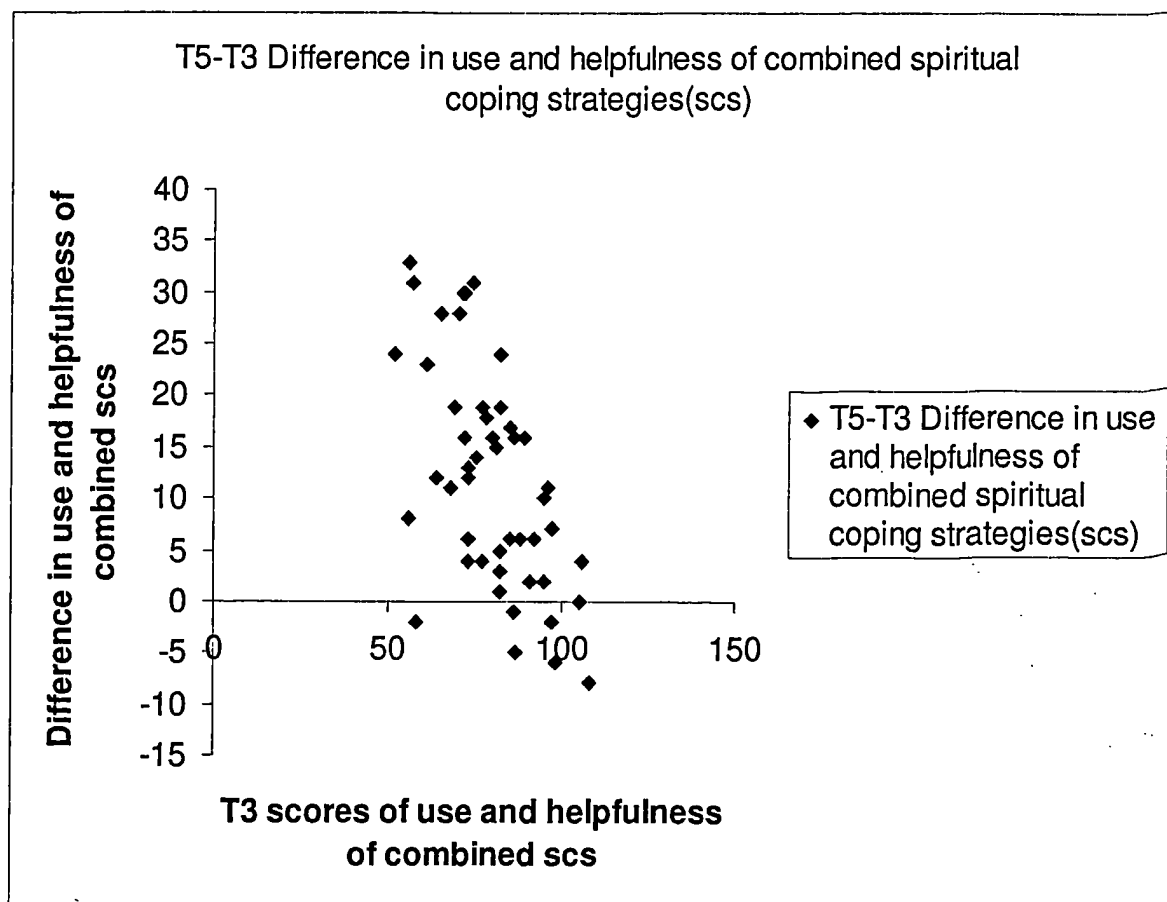


Figure K.4.2. shows that both the patients who started off with high and low scores in SCS, continued using the combined SCS by the third month after discharge (T5).

Figure K.4.3. Individual differences in the levels of use and helpfulness of RCS, six weeks after discharge (T4) against the original value during hospitalisation (T3)

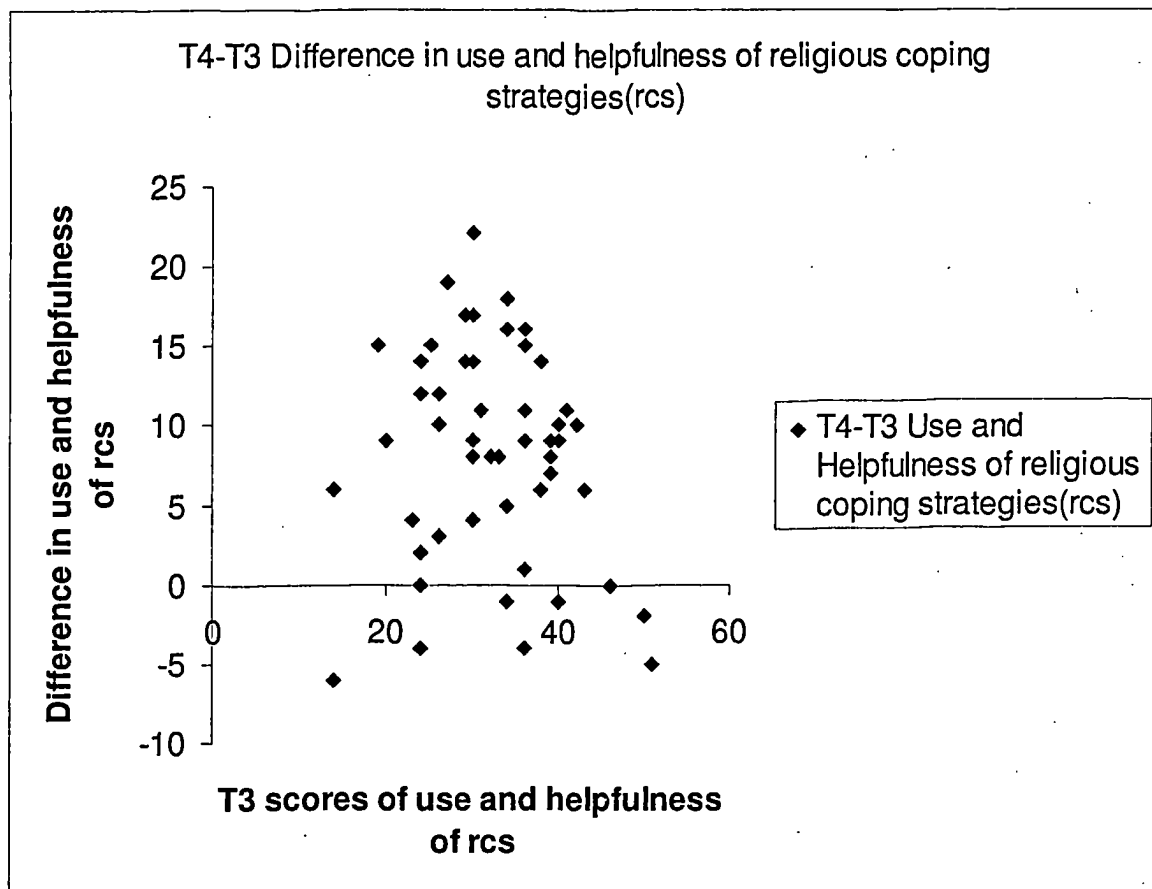


Figure K.4.3 exhibits increased scores in the RCS during hospitalisation(T3) between +1 and +22. Once again, those patients with extreme low scores in hospital reported higher religious coping during the first six weeks after discharge.

Figure K.4.4. Individual differences in the levels of use and helpfulness of RCS three months after discharge (T5) against the original value during hospitalisation (T3)

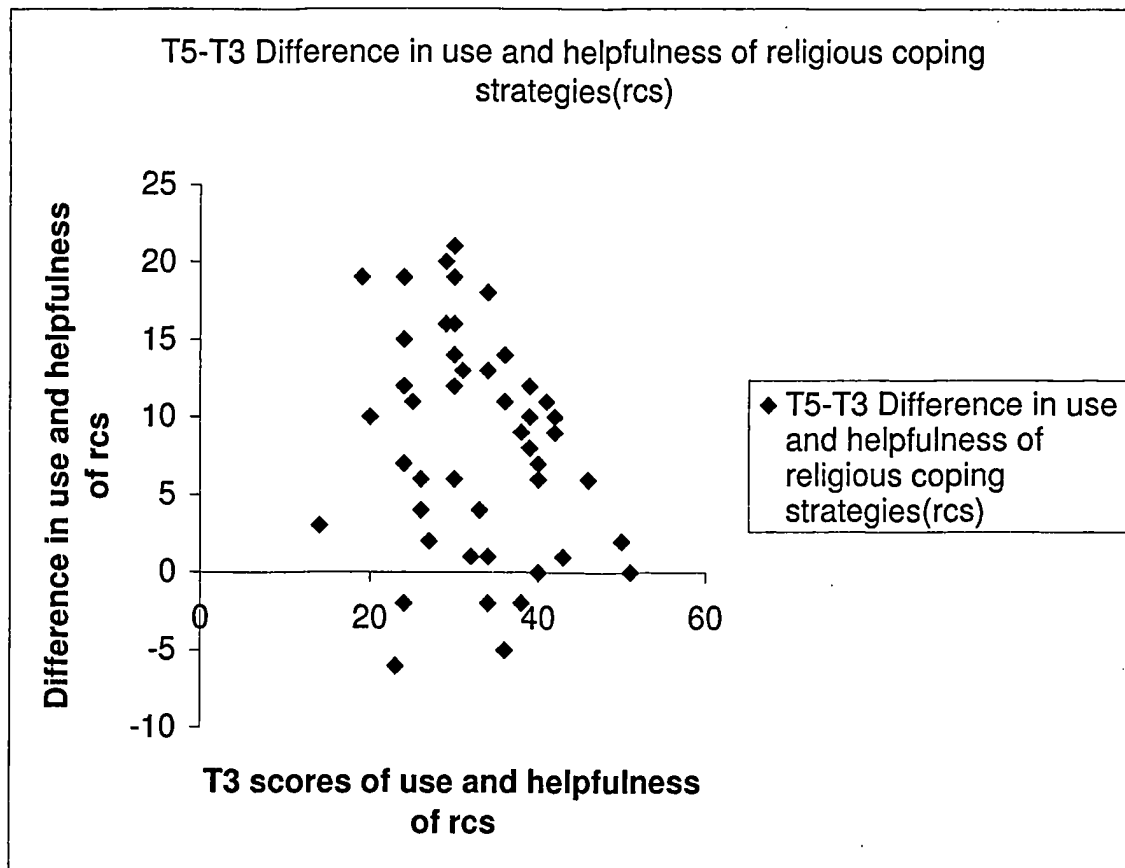


Figure K.4.4. demonstrates a similar picture to Figure K.4.3. Both patients who started off with extreme low scores or high scores in hospital, kept their increased scores of RCS by the third month after discharge(T5).

Figure K.4.5. Individual differences in the levels of use and helpfulness of NRCS, six weeks after discharge (T4) against the original value during hospitalisation (T3)

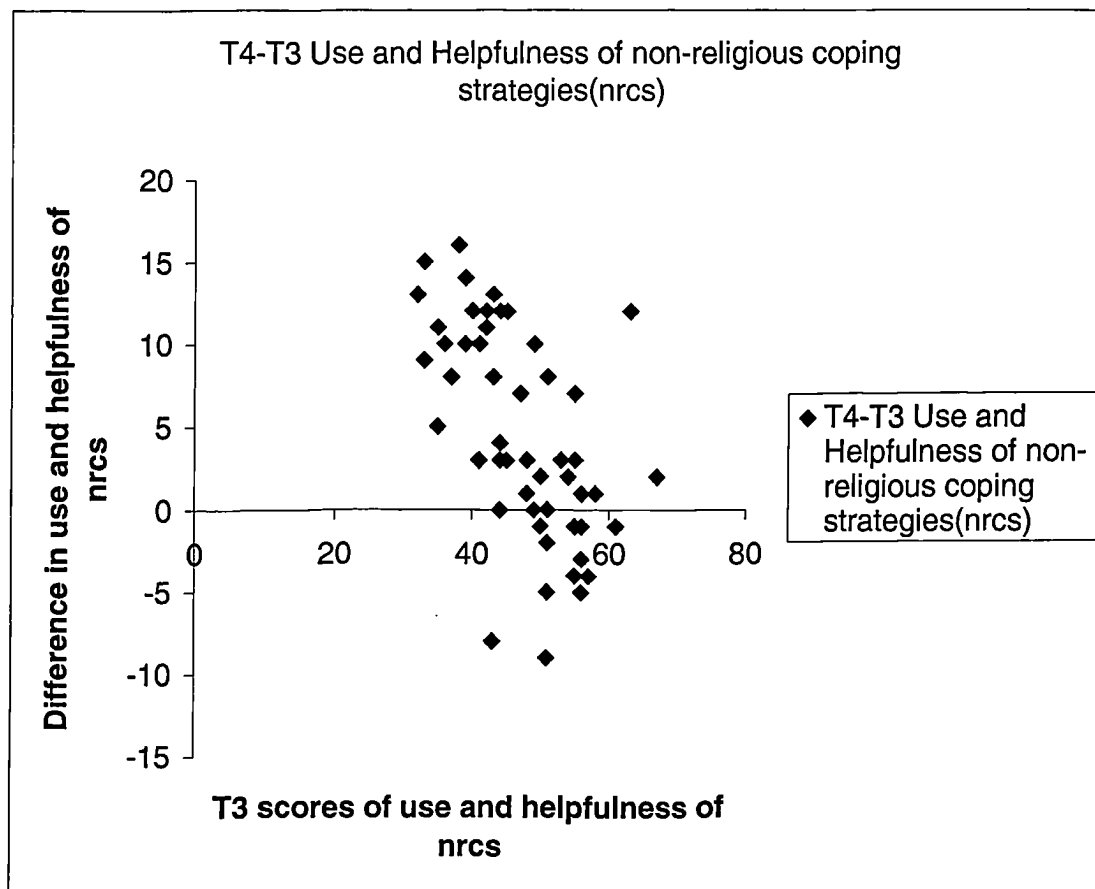


Figure K.4.5. shows an increase in scores of NRCS on discharge home in 71.7% of patients (n=38). This increase was between +1 and +16. Additionally, 5.7% (n=3) had the same scores, whilst 22.6% (n=12) had a decrease in scores during the first six weeks after discharge (T4) of -1 to -9.

Figure K.4.6. Individual differences in the levels of use and helpfulness of NRCS, three months after discharge (T5) against the original value during hospitalisation (T3)

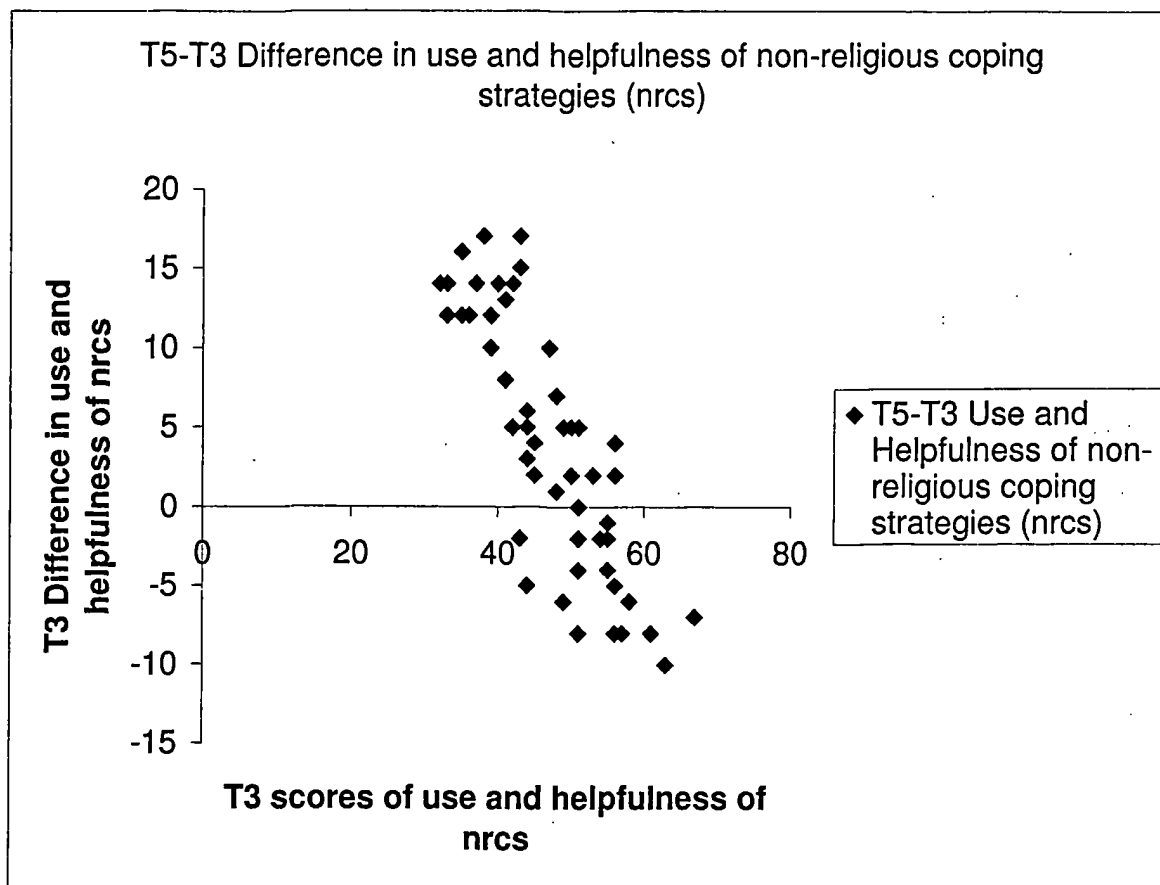


Figure K.4.6. shows an increase in NRCS in 62.7% of patients (n=32) in the range of +1 and +16 between the sixth and thirteenth week after discharge. Also, a reduction is shown in 35.3% (n=18) between -1 and -10. Therefore, it appears that the number of patients reporting less NRCS is higher than that reported in Figure 7.6, that is at six weeks after discharge(T4).

Spiritual coping strategies: a review of the nursing research literature

Donia Baldacchino MSc BSc Cert Ed RGN

Lecturer in Nursing Studies, Institute of Health Care, University of Malta, Malta, Sicily
and Doctoral Candidate, University of Hull, Hull, UK

and Peter Draper PhD BSc RN RNT

Director of MSc Programme, School of Health, University of Hull, Hull, UK

Submitted for publication 13 July 2000

Accepted for publication 23 February 2001

Correspondence:

Donia Baldacchino,

16 St John's Street,

Siggiewi,

Malta QRM 13.

E-mail: cbal1@ihc.um.edu.mt

BALDACCHINO D. & DRAPER P. (2001) *Journal of Advanced Nursing* 34(6), 833–841

Spiritual coping strategies: a review of the nursing research literature

Aims of the paper. This paper reviews some of the limited nursing research-based literature, orientated towards the use of spiritual coping strategies in illness. This review aims at identifying those spiritual coping strategies used by the believers and nonbelievers followed by implications for holistic nursing care.

Literature search. The CINAHL AND MEDLINE CD Rom databases were searched, identifying literature published from 1975 onwards which amounted to 187 articles. The majority of the literature traced were found anecdotal with only few studies investigating directly spiritual coping strategies. Following scrutiny of the available articles, only five research studies explored directly the spiritual coping strategies used in various illness, four of which were conducted in USA and one in UK. Because of the small scale research studies, generalization of the findings of this review is limited to the samples used.

Theoretical background. Research suggests that spiritual coping strategies, involving relationship with self, others, Ultimate other/God or nature were found to help individuals to cope with their ailments. This may be because of finding meaning, purpose and hope, which may nurture individuals in their suffering. Spirituality is often referred by literature as being synonymous with religiosity. Thus the use of spiritual coping strategies is restricted to individuals who hold religious beliefs. However, the definition of spirituality indicates that this concept is broader than religiosity. The theories on stress-coping (Folkman & Lazarus 1984) and the *numinous* experience (Otto 1950) outline the rationale for the use of these strategies which are applicable to both the believers and nonbelievers.

Implications. This review suggests that the onset of illness may render the individual, being a believer or nonbeliever to realize the lack of control over his/her life. However the use of spiritual coping strategies may enhance self-empowerment, leading to finding meaning and purpose in illness. This implies that holistic care incorporates facilitation of various spiritual coping strategies to safeguard the wholeness and integrity of the patients.

Keywords: spiritual/religious methods, coping, stress, illness, meaning, purpose, self-transcendence, connectedness, hope, nursing

Introduction

The first author's interest in the patients' spiritual resources was promoted by her clinical experience, working as a staff nurse in the intensive care unit and coronary care unit in Malta. Over a 3-year period, I was often impressed by the peaceful outcome on the patient following spiritual assistance. Additionally, the patients' strong will to live, accompanied by a positive outlook to their future, used to astonish me, as I used to observe a sense of self-empowerment to persevere in their recovery period. For these patients, spirituality was synonymous with religious practice. For other patients, it may take different forms as discussed in this paper. The role of coping in illness forms the basis of a longitudinal research project, addressing the spiritual coping strategies of patients with myocardial infarction during hospitalization and their recovery period.

Apart from the religious coping strategies used by patients with a religious affiliation, this paper identifies other spiritual strategies from the nursing research-based literature published from 1975 onwards. The definition of spirituality and the possible impact of illness on the patient are described. Additionally, a brief description of the theories of Otto (1950) on the *numinous* experience and Folkman and Lazarus (1984) on stress-coping mechanism provide a rationale for the use of the possible spiritual coping strategies used during illness. This paper concludes with an outline of the implications to nursing, in an attempt to enhance holistic care.

Aims of literature review

This review aims to:

- identify research based literature in nursing, orientated towards the use of spiritual coping strategies in illness;
- distinguish between those spiritual coping strategies used by the believers and nonbelievers;
- deduce implications for nursing practice;
- disseminate this literature to the nursing students, staff and other members of the multidisciplinary team;
- provide suggestions for future research.

The CINAHL AND MEDLINE CD Rom databases were searched, identifying literature published from 1975 onwards. The key words used were a combination of 'spiritual methods/strategies', 'religious methods/strategies', 'coping' and 'illness', 'meaning and purpose in life', 'self-transcendence' and 'connectedness'. Further sources of references were found in the literature, obtained from the initial search which amounted to 187 papers. On analysing these papers, the majority were found to be anecdotal with only few studies related to spiritual coping strategies.

Hence, a set of criteria was established for the selection of the appropriate studies for review, namely,

- aims and objectives of the study clearly stated, addressing directly or indirectly the identification of spiritual coping strategies;
- reliability and validity of study addressed;
- research design and method described clearly;
- findings presented unambiguously;
- discussion of findings orientated towards specific spiritual coping strategies in illness;
- recommendations outlined according to the aims and objectives of the study.

Following scrutiny of the available articles, only twelve research based studies met the criteria, five of which, explored directly the spiritual coping strategies used in various illnesses namely, Diabetes Mellitus in United States of America (USA) (Landis 1996); haemodialysis in USA (Smith Baldree *et al.* 1982); malignancy in USA (Sodestrom & Martinson 1987); Coronary Artery Bypass surgery in USA (Saudia *et al.* 1991) and medical and surgical ailments in United Kingdom (UK) (Simsen 1985, 1986). Moreover, the review is backed up by rationales derived from some of the anecdotal articles. As these spiritual coping strategies, used in various types of acute and chronic illness are derived from small scale studies, the findings may not be generalized without further research.

Definition of spirituality

Spirituality is derived from the Latin word spiritus, spirit, the essential part of the person (Piles 1990), which 'controls the mind and the mind controls the body' (Neuman 1995, p. 48). Thus, the spirit is the vital life force which motivates people (Golberg 1998) and influences one's life, health, behaviour and relationships (Stuart *et al.* 1989). This is supported by Stoll (1979) saying that spirituality is the mainstream of life which unifies all aspects of the human being (Burkhardt 1989, Reed 1992). Hence, it denotes that spirituality encompasses physical, psychological and social components (Henderson 1967, Colburn 1990, Neuman 1995). Therefore, being in tune with this vital, unifying force of the spiritual dimension, Orley (1994) contends that a more balanced state of physical, mental and social well-being will result, as it helps the person to strive for meaning and purpose in life (Dickinson 1975, O'Brien 1982, Brooke 1987).

Furthermore, spirituality is broader than religion (Cawley 1997, Nagai-Jacobson & Burkhardt 1989). Narayanasamy (1991) argues that spirituality is 'a quality that goes beyond religious affiliation, that strives for inspirations, reverence, awe, meaning and purpose, even in those who do not believe

in any god' (p. 3). Consequently McSherry (1997) and Burnard (1988b) point out that if spirituality is defined only synonymously with religion and a belief in God, then several persons, namely the atheists, agnostics, humanists and hedonists would be excluded from the possibility of using spiritual coping mechanisms. Therefore, spirituality applies to both believers and nonbelievers, including the presence of diverse cultural beliefs (Cawley 1997) and religious beliefs (Burnard 1988b, Narayanasamy 1991, McSherry 1996, Matthews 1997).

The possible impact of illness on the patient

Illness is defined as a holistic complex state incorporating the physical, social, emotional and spiritual components (McGilloway & Donnelly 1977, Neuman 1995). Thus the person as a whole is affected because according to Bradshaw (1994), 'man is unique and his nature is a unity; not a dualistic composition of physical body and spiritual soul, but an entity in which both find expression in the whole' (p. 3). Therefore, physical illness is in itself a stressor that depletes the individual's resources (Roberts & Fitzpatrick 1994). During hospitalization the majority of patients tend to become anxious because of the fear of the unknown, an uncertain future, and possible resultant complications of their respective illnesses (Smith 1976, Bowman *et al.* 1992, Shuldham *et al.* 1995). Additionally, the person's whole sense of meaning is threatened (Simsen 1985, Burnard 1987).

Referring to the patients with acute myocardial infarction, Rose *et al.* (1994) explain that patients may face both an immediate life-threatening illness and the potential for living with a major chronic illness. Consequently, Thornbury (1982) explains that an individual may decrease the levels of stress by behaving and thinking in a specific way, leading to a successful adaptation to stressful situations. Frankl (1962) in his autobiography of his imprisonment in a Nazi concentration camp in World War II, describes how he and the group survived by nurturing themselves with a sense of meaning, purpose and hope in that overwhelming and stressful life. Hence, when the person faces emotional stress, physical illness or death, the spiritual dimension comes into focus (Ross 1996, McSherry & Draper 1998).

Hafen *et al.* (1996) explain that spirituality may help individuals to interpret crisis in a 'growth-producing way' (p. 385) and as a result, illness may be used as a means of spiritual growth. However, Soeken and Carson (1987) point out that every individual reacts differently in times of crisis. Therefore, an individual may experience 'disharmony of mind, body, and spirit which can turn patients either towards or away from the growth process' (p. 605).

An indication of spiritual growth is given by Hall (1986) who explains that individuals may be found to transcend themselves to reach a higher power such as God/forces of nature, relationships with others in an attempt to cope effectively with the stressful situation. Consequently, patients may find meaning and purpose in their illness resulting in making constructive changes in life and reorganizing personal values (O'Connor *et al.* 1990).

Theoretical background

Stress-coping (Folkman & Lazarus 1984) and the numinous experience (Otto 1950)

Illness can be a source of stress because of the respective demands on the individual. When the demand is perceived as threatening, unpleasant or overwhelming, it becomes a stressor that requires mobilization of resources to adapt and cope with it (Roberts & Fitzpatrick 1994). Coping is defined by Folkman and Lazarus (1984) as the person's constantly changing cognitive and behavioural efforts to manage specific internal and/or external demands that are appraised as taxing or exceeding the person's resources.

Folkman and Lazarus (1984) explain that the individual first appraises the stressor by identifying its meaning whether it is threatening or challenging (primary appraisal). Following this interpretation, the individual determines whether the coping resources and options available are sufficient to cope with the situation (secondary appraisal). Thus an attempt to cope with the stressor is made by various ways of coping namely information seeking, direct action, inhibition of action and intrapsychic modes.

According to Sodestrom and Martinson (1987), the direct action mode of coping may be through spiritual practices such as reflection, whereby 'inward turning' tends to help the individual to get to know the complexity of one's inner self as a spiritual phenomenon (Lane 1987); relationship with others for support and security; relationship with God through self-transcendence, by going beyond oneself to reach a higher power, longing for self-completeness. Thus, effective spiritual coping strategies may help the individual to find meaning and purpose in illness, resulting in self-empowerment to cope with the current stress until adaptation takes place.

However, it is argued that the same spiritual methods may have been used by the individual for various other reasons before the onset of illness. Similarly, in times of crisis, spirituality may serve as a dynamic, integrative and creative life force to instil hope and motivation towards change and coping (Goddard 1995, Dreyer 1996, McSherry 1997, Golberg 1998). Consequently, this coping process is applicable

to both believers and nonbelievers. This is supported by the theory of Otto (1950), 'The idea of the Holy', whereby the numinous experience, unique to every individual, was identified as the essence of spirituality.

Otto (1950) defines the numinous experience as a complex feeling state of a personal incompleteness, longingness to reach a higher power and find existential meaning. This is also accompanied by the cognitive perspective as the individual can perceive the indicator of a higher power. A crisis situation may make the individual aware of the personal incompleteness which may result in a longingness to find existential meaning. Consequently, the use of spiritual coping strategies, such as relationship with friends, family, God/nature may help the individual to transcend beyond the self to reach a higher power, resulting in self-empowerment and ability to cope with the stressful situation.

Otto (1950) contends that the numinous experience is independent of the moral/ethical values and the belief system of the individual. Therefore, it implies that a person may experience a higher power, even if one does not submit him/herself to any form of religion or belief system. This is demonstrated by the following research findings on the use of spiritual coping strategies.

Spiritual coping strategies of patients in illness

The available, limited nursing research is more orientated towards religious coping mechanisms. However, Ellison (1983) asserts that spiritual coping strategies incorporate both the religious and existential methods of coping. Therefore, this review attempts to address the overall spiritual coping strategies apart from the religious methods, which are common to both believers and nonbelievers. The research designs adopted in the following nursing studies are mainly quantitative in nature. Burns and Grove (1997) claim that quantitative research allows rigorous measurement, objectivity and systematic generation of data for statistical analysis. However, Ingall (2000) argues that amalgamation of qualitative and quantitative methods will contribute to a broader and in depth knowledge about the use of spiritual coping strategies.

Smith Baldree *et al.* (1982) investigated the overall coping mechanisms of 35 patients on haemodialysis. The Jalowiec Coping Scale (Jalowiec & Powers 1981) with an acceptable Spearman's reliability coefficient (0.79, $P > 0.001$), was used. Although the use of a self-rating questionnaire may cause problems with clarity of meaning, it is less threatening to patients, with the advantage of revealing honesty in the responses (Oppenheim 1992). The most frequent coping strategies used were hoping that things would get better,

praying and trusting in God, maintaining control over the situation, looking at the problem objectively, worrying, accepting the situation, and thinking through different ways to solve the problem. Thus in chronic illness various forms of coping mechanisms are used such as spiritual, positive and negative coping mechanisms. According to Otto (1950) the various awful stressors of illness may render the patient aware of his/her loss of power over his/her life. Consequently, irrespective of any religious affiliation, the patient may go beyond him/herself to reach a higher power to gain control over his/her life process.

Furthermore, intrinsic and extrinsic religiosity appear to play an important role in coping. Allport and Ross (1967) explain that an extrinsically motivated person *uses* his/her religion for one's own benefit, whereas the intrinsically motivated *lives* religion according to his own beliefs in an altruistic way. This is exhibited by Acklin *et al.* (1983) who investigated the relationship between transcendent meaning, religious orientation and coping in a sample of 44 adult patients, 26 with cancer and 18 with nonlife threatening illness, mean age of 42 years. Overall, it was found that transcendent meaning, religiosity and church attendance play a positive role in coping with life-threatening illness. Additionally, the noncancer patients demonstrated a positive association between transcendent meaning and extrinsic religiousness. The triangulation method by the use of four instruments to identify spiritual coping contributes towards the validity of results (Cormack 1996). However the small sample limits generalization of the results.

Increased frequency of church attendance appears to be used as a means of socialization and support, which may decrease feelings of withdrawal and isolation. Consequently, social support by means of relationships with family and friends may help also the nonbelievers to find meaning and purpose to live during illness. Additionally, awareness of a shorter-life span due to malignancy may precipitate a search for meaning and purpose in life which enhances coping in a crisis situation (Barnard 1984, Barnard 1988a, 1988b, Coward 1995).

Relationships in life are explained by Reed (1992) in her concept of the transcendent-self based on the contextual world-view of the nature of human beings. The transcendent self is seen as empowering the individual for connectedness intrapersonally, within oneself through contemplation, whereby the individual connects with the inner self and acknowledges his/her strengths; interpersonally with others and the natural environment for social support, and transpersonally to the unseen, God, or power greater than the self and ordinary resources for empowerment. This position is supported by Haase *et al.* (1992) stating that connectedness is

awareness and insights in life and by appreciating more the love and support of the ones around. Thus relationship with self, others and a higher power/God may contribute towards adaptation to the disease (Stevens Barnum 1994, Martsof & Mickley 1998). The use of a random sample divided into two groups allows a better representation of the target population and comparison between the groups, with possible generalization of results (Burns & Grove 1997).

Finally, positiveness in life as a way of coping was explored by Belcher *et al.* (1989) who interviewed 35 clients with acquired immune deficiency syndrome (AIDS). It was found that some patients considered AIDS as 'a challenge, a way to reorder priorities, to take better care of self and to cherish themselves more than in the past' (p. 24). Additionally, a positive meaning was given to AIDS by some patients who regarded it as a 'second career' dealing with its demands on a daily basis as opposed to a negative meaning whereby AIDS was calculated as a punishment 'a daily smack in the face' (p. 23) which inhibited adaptation. Thus it infers that a positive outlook to life with optimism, is applicable to both believers and nonbelievers, and enables coping in a crisis situation (Belcher *et al.* 1989, Thomas 1989, Carson *et al.* 1990, Bradshaw 1996). This cross-sectional study exhibited how patients viewed AIDS differently, at one point in time. However had a longitudinal design been adopted, any possible fluctuation in coping may have been detected (Polit & Hungler 1999).

Conclusion

In times of a crisis situation, such as life-threatening illness, individuals may experience disharmony of mind, body and spirit (Soeken & Carson 1987). Hence, in order to meet the demands of illness, the clients of nursing may find meaning and purpose in illness by the use of various coping strategies, common to both believers and nonbelievers. The paucity of nursing research identified the following spiritual coping strategies such as, meditation/contemplation whereby the individual connects with the inner self and acknowledges his/her strengths (Reed 1992); relationship with others, family and friends (Hüngelmann *et al.* 1985, Mull *et al.* 1987, Thomas 1989); hopefulness that things would get better (Smith Baldree *et al.* 1982); helping others by giving and receiving love (Hüngelmann *et al.* 1985) and appreciating nature, in phenomena like sunset, spring, mountains and arts (Burkhardt 1989, Stoll 1989).

However, research suggests that the believers may use their religiosity as an additional way of coping with their illness such as by a relationship with God/Ultimate other, as a source of strength, security and hope through various

religious practices like prayers (Smith Baldree *et al.* 1982, Mull *et al.* 1987, Saudia *et al.* 1991, McIntosh 2000) and participation in community religious practices in places of worship (Acklin *et al.* 1983, Sodestrom & Martinson 1987, Burkhardt 1994).

Conclusively, according to Otto (1950), confrontation of illness may render the individual, being a believer or non-believer, to realize the personal nothingness and lack of control over his/her life. However, the use of spiritual coping strategies may help the individual in self-empowerment leading to finding meaning and purpose in illness, achieving a sense of personal wholeness by unifying the bio-psycho-social perspectives (Henderson 1967, Simsen 1988, Neuman 1995). Hence, illness may be considered as a spiritual encounter (Ross 1995), experiencing self-growth through life crisis situations (Burkhardt 1994, Stevens Barnum 1994, Bradshaw 1996).

Methodological limitations and suggestions for further research

Generalization of findings derived from the available small scale studies is limited because of methodological limitations. Examples of these are: the use of nonrandom sampling techniques; research instruments used for the first time, which may need further validity and reliability testing; the use of only quantitative research designs in such a subjective spiritual dimension, which tends to keep the rationale concealed, without support from the qualitative data; and the implementation of cross-sectional design which limits the discovery of any changes in the spiritual coping strategies in the follow up or recovery period.

Consequently, it is suggested that further larger-scale longitudinal research be carried out to identify the use of spiritual coping strategies over a longer period of time, to illustrate any fluctuations between the acute phase and recovery period of illness. Additionally, amalgamation of quantitative and qualitative methods (Carr 1994, Ingallil 2000) may help in outlining the rationale for the use of spiritual coping strategies. Conversely, quantitative research may depict any possible relationship between the use of spiritual coping strategies and other variables such as the personal characteristics and well-being of patients. While considering the subjective nature of the spiritual dimension of coping, methodological triangulation may enhance data collection and interpretation of findings, yielding convergent validity of results (Hinds 1989).

Despite these limitations, the findings reported here shed light on the possible spiritual coping methods used in an

viewed as 'richer than social support...as it is a significant, shared and meaningful personal relationship with another person, a spiritual being, nature or perhaps an aspect of one's inner self' (p. 146). Hence, this broader spiritual dimension of connectedness applies to both believers and nonbelievers, whereby the individual may find inner peace, meaning and purpose in life (Yalom 1982, Doyle 1992). This is reinforced by Boyd (1998) and Riley (1998) who say that the meaning and purpose in life may be of religious or secular type, depending on whether one is orientated to God or not. Therefore both the believers and nonbelievers may find meaning and purpose in life to cope with their illness.

However, the believers may have an additional coping capacity derived from various personal and/or group religious practices, such as prayers and rituals. This is substantiated by Reed (1986) who, by the use of the Religious Perspective Scale, used on a sample of 114 patients, divided into two groups, one with terminal illness ($n=57$) and a healthy group ($n=57$), identified private prayer and participation in religious activities as coping mechanisms. Thus the religious dimension as part of spirituality, which was more predominant in patients with illness, may enhance self-transcendence in an attempt to reach a higher power/God, the source of hope and strength (Thomas 1989, Reed 1992, Coward & Lewis 1993, Coward 1995).

Similar findings were identified by Reed (1987) in a sample of 300 adults subdivided into three groups, 100 in each group. Group 1 with terminal cancer illness, who were aware of its terminal nature; Group 2 with nonlife threatening illness and Group 3 of healthy adults. By the use of the Spiritual Perspective Scale and an open-ended question, it was found that terminally ill hospitalized adults (Group 1) had stronger faith or more meaningful prayer which provided them with a greater perception of strength and security to overcome the uncertainties of malignancy.

It is noted that the questionnaire used by Reed (1986) was highly orientated towards religious practices. However, although Reed's (1987) tool incorporated a broader dimension of spiritual coping mechanisms, consistency in the findings was identified. Thus coping is enhanced by transcending beyond the personal suffering of illness and experiencing 'larger horizons of life beyond the self' (p. 332), which may help the patients with terminal illness to live a meaningful life (Acklin *et al.* 1983).

Sodestrom and Martinson (1987) also demonstrated the use of religious practices as a means of coping. By interviewing a sample of 25 patients with cancer in USA (24 Christians and 1 humanist), it was found that 88% of patients found their meaning and purpose in illness through their belief in and relationship with God. This high percentage may be because

of the religious affiliation of the sample, the majority of whom were Christians. Although interviewing techniques may cause interviewer bias, as interviewing enhances understanding of the questions on such a complex dimension, it far outweighs the limits of an interview. The patients' spiritual coping strategies consisted of prayer (84%); religious objects, music, TV/radio (64%); reading Bible (56%); attending church (52%) and requesting communion (32%). Soeken and Carson (1987) note that 'through prayer and other rituals such as communion, the patient feels the power of God and adopts that power in the fight against the disease and in overcoming loneliness' (p. 609).

According to McGilloway and Donnelly (1977), Forbis (1988), Mickley and Soeken (1993), even if the patients had never affirmed much religion in their lives, in times of crisis, they may turn to their religion for help, as a source of hope and strength, rendering illness as a spiritual encounter (Ross 1995). This is supported by various research studies which found that spiritual support from belief in God, private/group prayers and worship were considered as helpful in adaptation to illness by patients with Diabetes Mellitus (Landis 1996), medical and surgical patients (Simsen 1985) and Coronary Artery Bypass Graft surgery (Saudia *et al.* 1991). The reasons for worshipping by religious practices and rituals given by Wulff (1997) are twofold, namely to communicate with some supernatural being, and to induce some desired mental state such as personal comfort and internal peace. Thus coping with illness may be optimized.

Furthermore, in the absence of religion, Burnard (1988b) explains that the nonbelievers, may meet their spiritual needs through their inner self, nature, arts, music, relationships, work and so on. This is supported by Stoll (1989) who views spirituality as,

my being, my inner person. It is me expressed through my body, my thinking, my feelings, my judgements and creativity...Through my spirituality, I give and receive love; I respond to and appreciate God, other people, a sunset, a symphony and spring (p. 6).

Burkhardt (1994) also found that spirituality is experienced through caring connectedness with self, others, Ultimate other and nature such as mountains, the ocean, by preserving and protecting the world. In consequence, spirituality and spiritual coping strategies may apply to human beings universally (Stoll 1989).

Apart from the religious practice of believing in God, Smith (1995) identified other spiritual coping mechanisms in a random sample of 172 polio survivors and 80 persons with no polio in USA. By the use of the Spirituality Orientation Inventory (Elkins *et al.* 1988), it was revealed that polio survivors coped with their illness by increasing their

attempt to cope with the stressful situation of illness. This implies that the nurses may incorporate these findings in their nursing care to promote holistic care of patients by addressing the body, mind and spirit (Oldnall 1995).

Implications for nursing

As nurses are present day and night with the patients, they are in a position to safeguard the wholeness and integrity of the patient (Granstrom 1985, Forbis 1988). Thus nurses can incorporate research findings in their practice to promote the holistic health of patients. This implies that the nurse's role is to include the assessment of the patients' usual spiritual coping strategies, to help them cope with the new demands of illness.

This responsibility requires the nurse to learn how to assess the spiritual coping strategies. Ross (1996) asserts that 'if nurses are to fulfil their function of promoting health, then spiritual care is a nursing responsibility and not an optional extra' (p. 38). Thus it is suggested that education modules on holistic care, encompassing the spiritual dimension, be included in the pre- and postregistration nursing education. New insights into the meaning of spiritual coping strategies to patients will enable the nurse to facilitate the patients' performance of their spiritual coping strategies during hospitalization. As, the spiritual dimension in care is complex (Mansen 1993, Ross 1994) the nurse is to work in collaboration with the multidisciplinary team, including the hospital chaplain, so as to meet the spiritual needs of both believers and nonbelievers.

References

- Acklin M.W., Brown E.C. & Mauger P.A. (1983) The role of religious values in coping with cancer. *Journal of Religion and Health* 22, 322–333.
- Allport G.W. & Ross J.M. (1967) Personal religious orientation and prejudice. *Journal of Personality and Social Psychology* 5, 432–443.
- Barnard D. (1984) Illness as a crisis of meaning: Psycho-spiritual agendas in health care. *Pastoral Psychology* 33, 74–82.
- Belcher A.E., Dettmore D. & Holzemer S.P. (1989) Spirituality and sense of well-being in persons with AIDS. *Holistic Nursing Practice* 3, 16–25.
- Bowman G.S., Webster R.A. & Thompson D.R. (1992) The reactions of 40 patients unexpectedly admitted to hospital. *Journal of Clinical Nursing* 1, 335–338.
- Boyd J. (1998) Two orientations of the self. *Journal of Psychology and Theology* 26, 110–122.
- Bradshaw A. (1994) *Lighting the Lamp. The Spiritual Dimension of Nursing Care*. Scutari Press, Middlesex.
- Bradshaw A. (1996) The legacy of nightingale. *Nursing Times* 92, 42–43.
- Brooke V. (1987) The spiritual well-being of the elderly. *Geriatric Nursing* 8, 194–195.
- Burkhardt M.A. (1989) Spirituality: an analysis of the concept. *Holistic Nursing Practice* 3, 69–77.
- Burkhardt M.A. (1994) Becoming and connecting: elements of spirituality for women. *Holistic Nursing Practice* 8, 12–21.
- Burnard P. (1987) Spiritual distress and the nursing response: theoretical considerations and counselling skills. *Journal of Advanced Nursing* 12, 377–382.
- Burnard P. (1988a) Searching for meaning. *Nursing Times* 84, 34–36.
- Burnard P. (1988b) The spiritual needs of atheists and agnostics. *Professional Nurse* 4, 130–132.
- Burns N. & Grove S.K. (1997) *The Practice of Nursing Research*. W.B. Saunders Co., Philadelphia.
- Carr L.T. (1994) The strengths and weaknesses of quantitative and qualitative research: what method for nursing? *Journal of Advanced Nursing* 20, 716–721.
- Carson V., Soeken K.L., Shanty J. & Terry L. (1990) Hope and spiritual well-being: essentials for living with Aids. *Perspectives in Psychiatric Care* 26, 28–34.
- Cawley N. (1997) An exploration of the concept of spirituality. *International Journal of Palliative Nursing* 3, 31–36.
- Colburn K. (1990) Clinical and personnel issues in providing interdisciplinary services for the terminally ill. *Caring Magazine* November, 14–16.
- Cormack D.F.S. (1996) *The Research Process in Nursing*. Blackwell Science Ltd, Oxford.
- Coward D.D. (1995) The lived experience of self – transcendence in women with AIDS. *Journal of Obstetrics and Gynaecological and Neonatal Nursing* 24, 314–318.
- Coward D.D. & Lewis F.M. (1993) The lived experience of self-transcendence in gay men with AIDS. *Oncology Nursing Forum* 20, 1363–1367.
- Dickinson C. (1975) The search for spiritual meaning. *American Journal of Nursing* 75, 1789–1793.
- Doyle D. (1992) Have we looked beyond the physical and psychosocial? *Journal of Pain and Symptom Management* 7, 302–311.
- Dreyer G.D. (1996) Help patients recover by exploring spirituality. *Case Management Advisor* July, 97–98.
- Elkins D., Hedstrom L.J., Hughes L.L., Leaf J.A. & Saunders C. (1988) Toward a humanistic phenomenological spirituality. *Journal of Humanistic Psychology* 28, 5–18.
- Ellison C.W. (1983) Spiritual well-being: conceptualisation and measurement. *Journal of Psychology and Theology* 11, 330–340.
- Folkman S. & Lazarus R.S. (1984) *Stress, Appraisal and Coping*. Springer Co., New York, pp. 181–221.
- Forbis P.A. (1988) Meeting patients' spiritual needs. *Geriatric Nursing* 9, 158–159.
- Frankl V. (1962) *Man's Search for Meaning: an Introduction to Logotherapy*. Simon and Schuster, Touchstone, USA.
- Goddard G. (1995) Spirituality as integrative energy: a philosophical analysis as requisite precursor to holistic nursing practice. *Journal of Advanced Nursing* 22, 808–815.
- Golberg B. (1998) Connection: an exploration of spirituality in nursing care. *Journal of Advanced Nursing* 27, 836–842.
- Granstrom S.L. (1985) Spiritual nursing care for oncology patients. *Topics in Clinical Nursing* 4, 35–45.

- Haase J.E., Britt T., Coward D.D., Leidy N.K. & Penn P.E. (1992) Simultaneous concept analysis of spiritual perspective, hope, acceptance and self-transcendence. *IMAGE: Journal of Nursing Scholarship* 24, 141–147.
- Hafen B.Q., Kauen K.J., Frandsen K.J. & Smith L. (1996) The healing power of spirituality. *Spirituality and Health* 4, 377–399.
- Hall C.M. (1986) Crisis as opportunity for spiritual growth. *Journal of Religion and Health* 25, 8–17.
- Henderson V. (1967) *The Nature of Nursing*. The MacMillan Co., New York.
- Hinds P.S. (1989) Method triangulation to index change in clinical phenomena. *Western Journal of Nursing Research* 11, 440–447.
- Hungelmann J.A., Kenkel-Rossi E., Klassen L. & Stollenwerk R.M. (1985) Spiritual well-being in older adults: harmonious interconnectedness. *Journal of Religion and Health* 24, 147–153.
- Ingalill R.H. (2000) Interventions in nursing care, areas of urgency, methodological obstacles and possibilities. *Keynote Address Paper Presented at the 10th Biennial WENR Conference*, Reykjavik, Iceland, pp. 1–16.
- Jalowiec A. & Powers M.J. (1981) Stress and coping in hypertensive and emergency room patients. *Nursing Research* 30(1), 10–14.
- Landis B.J. (1996) Uncertainty, spiritual well-being and psychosocial adjustment to chronic illness. *Issues in Mental Health Nursing* 17, 217–231.
- Lane J.A. (1987) The care of the human spirit. *Journal of Professional Nursing* 3, 332–337.
- Mansen T.J. (1993) The spiritual dimension of individuals: conceptual development. *Nursing Diagnosis* 4, 140–146.
- Martsolf D. & Mickley J.R. (1998) The concept of spirituality in nursing theories: differing world-views and extent of focus. *Journal of Advanced Nursing* 27, 294–303.
- Matthews D.A. (1997) Faith and medicine: reconciling the twin traditions of healing. *Mind/Body Medicine* 2, 3–119.
- McGilloway F.A. & Donnelly L. (1977) Religion and patient care: the functionalist approach. *Journal of Advanced Nursing* 2, 3–13.
- McIntosh P. (2000) Faith is powerful medicine. *Reader's Digest* May, 149–152.
- McSherry W. (1996) Raising the spirits. *Nursing Times* 92, 48–49.
- McSherry W. (1997) *A Descriptive Survey of Nurses' Perceptions of Spirituality Care*. Unpublished M. Phil Thesis. University of Hull, Yorkshire, UK.
- McSherry W. & Draper P. (1998) The debates emerging from the literature surrounding the concept of spirituality as applied to nursing. *Journal of Advanced Nursing* 27, 683–691.
- Mickley J. & Soeken K. (1993) Religiousness and hope in Hispanic and Anglo-American women with breast cancer. *Oncology Nursing Forum* 20, 1171–1177.
- Mull C.S., Cox C.L. & Sullivan J.A. (1987) Religion's role in the health and well-being elders. *Public Health Nursing* 4, 151–159.
- Nagai-Jacobson M.G. & Burkhardt M.A. (1989) Spirituality: cornerstone of holistic nursing practice. *Holistic Nursing Practice* 3, 18–26.
- Narayanasamy B. (1991) *Spiritual Care: a Resource Guide*. Quay Publishing, Guildford.
- Neuman B. (1995) *The Neuman System Model*, 3rd edn. Appleton and Lange, Norwalk, pp. 3–61.
- O'Brien M.E. (1982) Religious faith and adjustment to long-term haemodialysis. *Journal of Religion and Health* 21, 68–80.
- O'Connor A.P., Wicker C.A. & Germino B.B. (1990) Understanding the cancer patient's search for meaning. *Cancer Nursing* 13, 167–175.
- Oldnall A. (1995) Guest editorial: on the absence of spirituality in nursing theories and models. *Journal of Advanced Nursing* 21, 417–418.
- Oppenheim A.N. (1992) *Questionnaire Design. Interviewing and Attitude Measure*. Pinter, London.
- Orley J. (1994) Spiritual dimensions. *World Health* 47, 9.
- Otto R. (1950) *The Idea of the Holy: An Inquiry Into the Non-Rational Factor in the Idea of the Divine and its Relation to the Rational*. Oxford University Press, London, pp. 25–65.
- Piles C.L. (1990) Providing spiritual care. *Nurse Educator* 15, 36–41.
- Polit D.F. & Hungler B.P. (1999) *Nursing Research. Principles and Methods*. J.B. Lippincott Co., Philadelphia.
- Reed P.G. (1986) Religiousness among terminally ill and healthy adults. *Research in Nursing and Health* 9, 35–41.
- Reed P.G. (1987) Spirituality and well-being in terminally ill hospitalised adults. *Research in Nursing and Health* 10, 335–344.
- Reed P.G. (1992) An emerging paradigm for the investigation of spirituality in nursing. *Research in Nursing and Health* 15, 349–357.
- Riley B.B. (1998) Types of spiritual well-being among persons with chronic illness: their relation to various forms of quality of life. *Archives of Physical Medicine and Rehabilitation* 79, 258–264.
- Roberts B.L. & Fitzpatrick J. (1994) Margin in life among hospitalised and non-hospitalised elderly persons. *International Journal of Nursing Studies* 31, 573–582.
- Rose S.K., Conn V.S. & Rodeman B.J. (1994) Anxiety and self-care following myocardial infarction. *Issues in Mental Health Nursing* 15, 433–444.
- Ross L. (1994) Spiritual care: The nurse's role. *Nursing Standard* 8, 33–37.
- Ross L. (1995) The spiritual dimension: its importance to patients' health, well-being and quality of life and its implications for nursing practice. *International Journal of Nursing Studies* 33, 457–468.
- Ross L. (1996) Teaching spiritual care to nurses. *Nurse Education Today* 16, 38–43.
- Saudia T.L., Kinney M.R. & Young-Ward L. (1991) Health Locus of control and helpfulness of prayer. *Heart and Lung* 20, 60–65.
- Shuldham G.M., Cunningham G., Hiscock M. & Luscombe P. (1995) Assessment of anxiety in hospital patients. *Journal of Advanced Nursing* 22, 87–93.
- Simsen B. (1985) Spiritual needs and resources in illness and hospitalisation. Unpublished MSc Thesis, University of Manchester, Great Britain.
- Simsen B. (1986) The spiritual dimension. *Nursing Times* 26, 41–42.
- Simsen B. (1988) Nursing the Spirit. *Nursing Times* 84, 31–33.
- Smith M.C. (1976) Patient responses to being transferred during hospitalisation. *Nursing Research* 25, 192–196.
- Smith D. (1995) Power and spirituality in polio survivors: a study based on Rogers' Science. *Nursing Science Quarterly* 8, 133–139.
- Smith Baldree K., Pelletier Murphy S. & Powers M.J. (1982) Stress identification and coping patterns in patients on haemodialysis. *Nursing Research* 31, 107–112.

- Sodestrom K. & Martinson I.M. (1987) Patients' spiritual coping strategies: a study of nurse and patient perspectives. *Oncology Nursing Forum* 14, 41–46.
- Soeken K.L. & Carson V.J. (1987) Responding to the spiritual needs of the chronically ill. *Nursing Clinics of North America* 22, 603–609.
- Stevens Barnum B.J. (1994) *Nursing Theory: Analysis, Application and Evaluation*. J.B. Lippincott Co., London.
- Stoll R.I. (1979) Guidelines for spiritual assessment. *American Journal of Nursing*, 79, 1572–1577.
- Stoll R.I. (1989) The essence of spirituality. In *Spiritual Dimensions of Nursing Practice* (Carson V.B. ed.), W.B. Saunders Co., Toronto, pp. 4–23.
- Stuart E.M., Deckreo J.P. & Mandle C.L. (1989) Spirituality in health and healing: a clinical program. *Holistic Nursing Practice* 3, 35–46.
- Thomas S.A. (1989) Spirituality: an essential dimension in the treatment of hypertension. *Holistic Nursing Practice* 3, 47–55.
- Thornbury K.M. (1982) Coping: implications for health practitioners. *Patient Counselling and Health Education* 4, 3–9.
- Wulff D.M. (1997) *Psychology of Religion*. John Wiley and Sons, New York, pp. 517–523.
- Yalom I.D. (1982) The 'Terrestrial' meanings of life. *International Forum for Logotherapy* 5, 92–102.



PERGAMON

International Journal of Nursing Studies 39 (2002) 207–214

INTERNATIONAL JOURNAL OF
NURSING
STUDIES

www.elsevier.com/locate/ijnurstu

Reliability testing of the hospital anxiety and depression (HAD) scale in the English, Maltese and back-translation versions

Donia R. Baldacchino^{a,*}, Gerald S. Bowman^b, Anton Buhagiar^c

^a *Institute of Health Care, University of Malta, Malta*

^b *School of Health, University of Hull, Yorkshire, UK*

^c *Department of Mathematics, University of Malta, Malta*

Received 17 August 2000; accepted 23 February 2001

Abstract

This paper discusses the translation of the hospital anxiety and depression (HAD) scale (Zigmond, Snaith, *Acta Psychiatr. Scand.* 67 (1983) 361) into the Maltese language. The HAD scale is a well-validated and reliable measure of anxiety and depression originating in the United Kingdom. To ensure accuracy in the translation of the tool, the translation process was based on the Maltese Translation Guidelines issued by Chetcuti (Tahrig għall-ezamijiet tal-Malti. Biex tagħmel traduzzjoni tajba, Veritas Press, Malta, 1975, pp. 9–10) and those of Sechrest et al. (*J. Cross-Cultural Psychol.*, 3 (1) (1972) 41). The composition of the Maltese language, which is Semitic in nature, is described and examples from different languages are given. The Maltese version of the HAD scale will facilitate the investigation of mood states in future studies on patients.

Reliability testing of the HAD scale is then performed on the English version, the Maltese version and on the back-translation. The test–retest reliability of the three versions is examined using cross-tabulations of each item (pre values with post values), all of which gave highly significant values of chi-squared ($p = 0.0000$). These cross-tabulations also yielded high values for the Kappa measure of reliability and for Spearman's coefficient of correlation ($\kappa \geq 0.8$ and $\rho \geq 0.9$ for most items of anxiety and depression in all the three versions).

The internal consistency of the three versions is also examined statistically using Cronbach's alpha and factor analysis. Both the anxiety and the depression subscales in the Maltese version can each be parsimoniously described by one factor. Each subscale therefore has a dimensionality of one. This explains why good levels of internal consistency are observed for the Maltese translation of the HAD scale ($\alpha = 0.79$ for the anxiety subscale, 0.70 for depression, and 0.85 for both subscales together). This validates the Maltese version of the HAD scale, which can thus be used safely in future studies on Maltese patients.

The anxiety subscale is also unidimensional in the original and in the back-translation, and also showed satisfactory values for Cronbach's alpha (0.73 and 0.74, respectively).

Unfortunately, for the depression subscale, correlations between its items were rather low, thus leading to low alphas (about 0.45 and 0.51, respectively) for the internal consistency of this subscale in these versions. © 2002 Elsevier Science Ltd. All rights reserved.

Keywords: HAD-scale; Translation; Maltese language; Test–retest reliability; Statistical analysis

1. Introduction

Anxiety and depression are common features in illness (Conn et al., 1991; Shiell and Shiell, 1991; Thompson and Webster, 1989). The measurement of anxiety and

*Corresponding author. 16, St. John's Street, Siggiewi, Malta, QRM 13. Fax: +356-244-973.

E-mail address: cball@ihc.um.edu.mt (D.R. Baldacchino).

depression by self-assessment questionnaires is common practice and accepted internationally. For example, papers were produced in the United States of America (Christman et al., 1988; Minckley et al., 1979), the United Kingdom (Aylard et al., 1987; Wilkinson and Barczak, 1988; Lewis and Wessely, 1990; Thompson et al., 1989, 1987, 1982), Taiwan (Chiou et al., 1997), Kuwait (Malasi et al., 1991), Saudi Arabia (El-Rufaie, 1987), Nigeria (Abiodun, 1994), Canada (Crowe et al., 1996), Sweden (Wiklund et al., 1984), Scotland (Philip et al., 1979), and Norway (Havik and Maeland, 1990). In research, the most common means of determining objectively the presence of anxiety and depression is through self-assessment questionnaires. However, instruments developed in foreign countries could cross cultural boundaries when applied to the Maltese population (Sechrest et al., 1972). Currently, no objective tools exist in the Maltese language to measure anxiety and depression. Consequently, the main author decided to estimate the levels of anxiety and depression in patients with myocardial infarction by the use of the hospital anxiety and depression (HAD) scale (Zigmond and Snaith, 1983) translated into the Maltese language.

The aims of the present study were to:

- (a) conduct rigorous translation of the HAD scale into the Maltese language and
- (b) test the reliability of the original, translated and back-translated versions.

According to the Malta Central Office of Statistics (1999), out of a random sample of 599 persons in 1998, aged 16 years and over, 46.7% were capable of reading Maltese with only 16.4% able to read basic English. Thus, this higher percentage of persons able to read Maltese, may yield a more representative sample with the possibility of generalisation of results (Streiner and Norman, 1989). The translated version gives the opportunity to make the scale applicable and comprehensive to the Maltese patients, enabling a higher percentage of the total population, who are capable to read the Maltese language, to be included in studies measuring anxiety and depression.

Furthermore, the HAD scale has already been translated successfully into other languages including Chinese (Chiou et al., 1997) and Arabic languages (Malasi et al., 1991; El-Rufaie and Absood, 1987). In this paper, therefore, the translation of the English version of the HAD scale into the Maltese language is discussed. To reduce the possibility of an ambiguous translation, the Maltese translation was also back-translated into English. Each of these three versions of the HAD scale were then administered to a separate cohort group of student nurses, whose responses were analysed statistically.

In particular, reliability testing of the HAD scale was performed on the English version, the Maltese version and on the back-translation. The test-retest reliability of the three versions was examined using cross-tabulations of each item (pre-values with post-values), along with the corresponding measures of association—the chi-squared statistic (χ^2), the Kappa measure of reliability κ , and Spearman's coefficient of correlation ρ .

The internal consistency of the three versions was also examined statistically using Cronbach's alpha and factor analysis. Tables 1 and 2 show very good levels of internal consistency and test-retest reliability were observed for the Maltese translation of the HAD scale, as well as for the other versions. This is a validation of the Maltese version of the HAD scale, which can thus be used safely in subsequent studies on Maltese patients.

2. Material and methods

2.1. The HAD scale

The original HAD scale, which was developed in the UK by Zigmond and Snaith (1983), has two subscales which measure anxiety and depression. The tool consists of 14 items, seven for each subscale, whereby patients rate each item on a 0–3 point self-rating scale. The scoring system ranged from the absence of a symptom or the presence of positive features (scoring 0) to the maximal presentation of symptoms or the absence of positive features (scoring 3). Therefore, the higher the score, the higher the anxiety and/or depression.

Originally, the tool had 16 items, of which the internal consistency for the anxiety subscale, calculated by the Spearman correlation test, was between 0.76 and 0.41 ($p < 0.01$) and that of the depression subscale was between 0.60 and 0.30 ($p < 0.01$). It was reported that two items, one from each subscale, which were weakly correlated, were removed, bringing the HAD Scale down to 14 items. No reliability data were presented of the final scale (Milne, 1992).

3. Constituents of the Maltese language

Aquilina (1985) affirms that the Maltese language is semitic in nature, that is originating from the Hebrew, Phoenician and Arabic languages. Furthermore due to the settlement of various ethnic groups in Malta, such as the Arabs, English, French, Italians, Romans and Sicilians, the Maltese language is composed of a mixture

Table 1
Test–retest reliability^a

Variables	Parameter	Original	Maltese	Back-translation	All groups
<i>Anxiety pre–post</i>					
a_1 – a_{11}	Spearman's ρ	0.98	0.95	0.84	0.94
	Kappa	0.84	0.89	0.88	0.87
a_2 – a_{22}	Spearman's ρ	0.93	0.87	0.96	0.91
	Kappa	0.79	0.68	0.87	0.77
a_3 – a_{33}	Spearman's ρ	0.94	0.86	0.96	0.91
	Kappa	0.78	0.84	0.82	0.81
a_4 – a_{44}	Spearman's ρ	0.97	0.95	0.98	0.96
	Kappa	0.97	0.94	0.94	0.95
a_5 – a_{55}	Spearman's ρ	1.00	0.97	0.99	0.99
	Kappa	1.00	0.93	0.91	0.95
a_6 – a_{66}	Spearman's ρ	0.93	0.98	0.88	0.93
	Kappa	0.84	0.97	0.76	0.88
a_7 – a_{77}	Spearman's ρ	0.98	0.92	0.97	0.95
	Kappa	0.94	0.94	0.95	0.95
<i>Sum of anxiety variables pre and post:</i> apre–apost	Spearman's ρ	0.98	0.93	0.98	0.98
<i>Depression pre–post</i>					
d_1 – d_{11}	Spearman's ρ	1.00	0.82	0.99	0.94
	Kappa	1.00	0.67	0.92	0.87
d_2 – d_{22}	Spearman's ρ	0.99	0.92	0.96	0.96
	Kappa	0.97	0.83	0.83	0.88
d_3 – d_{33}	Spearman's ρ	1.00	0.90	0.94	0.95
	Kappa	1.00	0.91	0.91	0.94
d_4 – d_{44}	Spearman's ρ	0.98	0.91	0.98	0.95
	Kappa	0.91	0.86	0.95	0.91
d_5 – d_{55}	Spearman's ρ	0.91	0.97	1.00	0.95
	Kappa	0.90	0.94	1.00	0.94
d_6 – d_{66}	Spearman's ρ	0.99	1.00	0.99	0.99
	Kappa	0.97	1.00	0.95	0.98
d_7 – d_{77}	Spearman's ρ	0.97	0.85	1.00	0.93
	Kappa	0.96	0.68	1.00	0.86
<i>Sum of depression variables pre and post:</i> dpre–dpost	Spearman's ρ	0.99	0.97	0.99	0.98
<i>Sum of anxiety and depression variables together, pre and post:</i> adpre–adpost	Spearman's ρ	0.99	0.99	0.96	0.98

^aThe association between the pre and the post values of each item in the HAD scale is assessed using Spearman's coefficient of correlation and the Kappa measure of reliability. These are given for the English, Maltese and back-translation versions of the HAD scale, and for all groups together. The cross-tabulation of each item (pre versus post) yielded a highly significant value of $\chi^2(p < 0.0001, \text{degrees of freedom} = 9)$ for each of the three versions and for all groups together.

of foreign languages. The Maltese vocabulary, demonstrates the origin of various words found in the Maltese language such as, *ruh* (soul) from *ruah* in Hebrew, *bongu* (good morning) from *bonjour* in French, *kejk* for cake in English, *knisja* (church) from *kanisja* in Arabic, *arja* (air) from *aria* in Italian, *blata* (rock) from *balata* in Sicilian.

4. Method of translation of the Maltese and back-translation versions

Permission to use and translate the HAD scale (Zigmond and Snaith, 1983) for use in a current study on patients with myocardial infarction, was granted by the principal manager of NFER-NELSON Agency in

Table 2^a

Variables	Parameter	Original	Maltese	Back-translation	All groups
<i>Anxiety only</i>					
Anxiety only, pre and post	Cronbach's alpha	0.8772	0.9014	0.8910	0.8934
	Eigenvalues > 1	5	5	5	6
	Secondary factors	2	1	1	1
Anxiety pre	Cronbach's alpha	0.7394	0.7927	0.8175	0.7817
	Eigenvalues > 1	3	2	2	1
	Secondary factors	1	1	1	1
Anxiety post	Cronbach's alpha	0.7307	0.7899	0.7401	0.7655
	Eigenvalues $\lambda > 1$	3	2	1	1
	λ	2.72, 1.11, 1.03, 0.70	3.14, 1.01, 0.86	2.82, 0.99	
	λ_1/λ_2	2.45	3.11	2.85	
	Secondary factors	1	1	1	1
<i>Depression only</i>					
Depression only, pre and post	Cronbach's alpha	0.7527	0.8652	0.7851	0.8167
	Eigenvalues > 1	6	5	5	6
	Secondary factors	3	2	2	2
Depression, pre	Cronbach's alpha	0.4940	0.7256	0.5086	0.6068
	Eigenvalues > 1	3	3	3	2
	Secondary factors	1	1	2	1
Depression, post	Cronbach's alpha	0.4516	0.7024	0.5094	0.6004
	Eigenvalues $\lambda > 1$	3	2	3	2
	λ	1.69, 1.34, 1.16, 0.91	2.62, 1.10, 0.96	2.20, 1.59, 1.29, 0.71	
	λ_1/λ_2	1.26	2.38	1.38	
	Secondary factors	2	1	1	1
<i>Anxiety and depression</i>					
Anxiety and depression, pre and post	Cronbach's alpha	0.8594	0.9262	0.8909	0.9041
	Eigenvalues > 1	7	8	8	10
	Secondary factors	3	2	3	3
Anxiety and depression, pre only	Cronbach's alpha	0.7229	0.8459	0.7823	0.8010
	Eigenvalues > 1	6	4	5	3
	Secondary factors	2	1	2	1
Anxiety and depression, post only	Cronbach's alpha	0.7049	0.8460	0.7693	0.7996
	Eigenvalues > 1	5	5	4	3
	Secondary factors	2	1	2	1

^aFactor Analysis was performed on the HAD scale in the English, Maltese and back-translation versions, and on all groups together. For each group, Cronbach's alpha is reported for the anxiety variables, the depression variables and for both sets of variables together. The test (pre) and retest (post) variables are considered both together and separately for each group. Details of the factor analyses are given for the post variables.

UK, which is responsible for the administration of the HAD scale. To achieve the optimal accuracy in the Maltese translation, and to safeguard the reliability and validity of the original tool, the set of guidelines for Maltese translation (Chetcuti, 1975) was used, supported by those of Sechrest et al. (1972). Chetcuti (1975) recommends that firstly, the whole meaning of the original text be understood well before attempting the translation into Maltese. Secondly, it is the meaning of the text which is to be translated and not word/phrase for word/phrase. This is because every language has its

own idioms which could be expressed differently, by various languages. Sechrest et al. (1972, p. 45) points out that since "idioms never translate properly", it is advised to "attempt to ensure that when idioms are used in a translation they are equivalent in meaning to the idioms used in the original". Thus precautions were taken while translating the idiomatic construction. This is clearly seen from the statement No. 9, "I get a sort of frightened feeling like 'butterflies' in the stomach". Fortunately, the Maltese language provides another idiom for this statement, "Inhoss sens

ta' bizgha u nhoss tferfir fl-istonku" which has the same meaning as "butterflies in the stomach". Thirdly, the translated text is to be presented in a clear, simple and comprehensive way by using everyday-spoken language. Finally, Chetcuti (1975) recommends that the translation should be written in the appropriate Maltese language in the way it is spoken by the Maltese population at the time. Therefore, to abide by these guidelines, a team of three experts in linguistics, was set up to work in collaboration with the main author.

The expert panel consisted of four persons namely,

Mr. A who is a bilingual linguistic educator specialised professionally in Maltese language;

Ms. B who is a bilingual linguistic educator specialised professionally in English language;

Mr. C who is a Maltese person of English nationality, mastering both the Maltese and English spoken languages;

Ms. R, the main author who, through her theoretical background on anxiety and depression in patients with myocardial infarction, could verify and clarify the misunderstood translated terms. The translation process passed through various stages as follows.

Stage 1: The HAD scale was first translated into Maltese by the panelist Mr. B, specialised in the Maltese language, who gave multiple Maltese words of the same meaning to the English version.

Stage 2: The Maltese translation passed on to the main author Ms. R, who then selected the most appropriate words, thought to be the best for the spoken Maltese language, and compatible with the content of the question. Then the Maltese translated tool was drafted and passed on for further verification.

Stage 3: The Maltese draft was examined by the panelist Ms. B, specialised in the English language, for its appropriateness in using everyday spoken language, to ensure clarity and understanding.

Stage 4: After four weeks, the Maltese draft was translated back to the English language by the bilingual panelist Mr. C, who is competent in both the English and Maltese languages. This person was not associated with the translation phase to prevent bias in the back-translation (Streiner and Norman, 1989).

Stage 5: Cross-checking of both the Maltese and English back-translation versions were done against the original HAD scale, by the panelist Ms. B, specialised in English language. Then the Maltese version was sent back to the researcher Ms. R, ready for the pilot study.

Stage 6: The Maltese translation was given to 20 final year student nurses of different ages, ranging from 18 to 45 years. It was found that the statement "I feel as if I am slowed down" translated to "*Inhossni qiegħed/a inbatti*"; the word *inbatti* was not completely understood by all the students. This could be because, the word

inbatti which means (slowing down) is not currently in common use. Additionally, it was being misread for *inbati* meaning *suffering*. Consequently, the word *inbatti* was altered to *incedi* (slowing down) which was comprehended by respondents of all ages. Having the three versions in hand, the original, Maltese and back-translation of the HAD scale underwent statistical analysis.

5. Subjects

The HAD scale in the English, Maltese and back-translation versions were administered separately to three different groups as follows:

(a) The Maltese version of the HAD scale was tested and retested in December 1998 on a cohort group of 52 final year students undertaking the Diploma in Nursing course. The group consisted of 12 males and 40 females, all in the age range between 20 and 45 years. The first test was completed in the ninth week of Semester I, whilst the retest was conducted three weeks later, just before Christmas recess. During both the test and the retest, the students were invigilated in class, preventing the students from influencing one another.

(b) The original (English) version of the HAD scale was administered on the following year, on a cohort group of 55 final year student nurses undergoing the Certificate in Nursing course. The group incorporated 15 males and 40 females in the age range of 20–42 years. Again the test and the retest were carried out in November 1999, in the fifth week of Semester I, with an interval of three weeks between the test and the retest. Again the students were prevented from communicating with one another during these tests.

(c) The back-translation of the HAD scale was completed by a cohort group of 33 final year students (6 males and 27 females, all between 20 and 32 years). The test and the retest were carried out in November 1999, in the fifth week of Semester I, with an interval of three weeks between the test and the retest. The group was supervised in class to prevent them from influencing each other.

For practical reasons, one version was given to a selection of students from *one* class only. This facilitated supervision, and besides, more subjects could be available at a given time if they are from the same class. It was also decided that the versions would be tested and retested on students rather than on patients with myocardial infarction. These are in relatively short supply and it was deemed better to reserve such patients for the main study.

The statistical analyses were performed using the Biomedical Data Package Release 7, often referred to as BMDP (Dixon, 1992). Program 4F was used for cross-tabulations, whilst 4M was used for factor analysis.

6. Statistics and discussion

6.1. Statistical Analysis of the hospital anxiety and depression (HAD) scale in the English, Maltese and back-translation versions

In this study, the items are referred to as follows:

Subscale	Pre-variables	Post-variables
Anxiety	$a_1, a_2, a_3, a_4, a_5, a_6, a_7$; apre = sum of $a_1 - a_7$;	$a_{11}, a_{22}, a_{33}, a_{44}, a_{55}, a_{66}, a_{77}$; apost = sum of $a_{11} - a_{77}$;
Depression	$d_1, d_2, d_3, d_4, d_5, d_6, d_7$; dpre = sum of $d_1 - d_7$; adpre = apre + dpre;	$d_{11}, d_{22}, d_{33}, d_{44}, d_{55}, d_{66}, d_{77}$. dpost = sum of $d_{11} - d_{77}$; adpost = apost + dpost.

Test-retest reliability was examined for each item in the anxiety and depression subscales. Cross-tabulations were performed for each item with the test responses being the row variable and the retest responses being the column variable. For high test-retest reliability, one would expect high frequencies on the main diagonal of the table, with low frequencies outside the diagonal. This is best measured by the Kappa measure of reliability, which is equal to one when there is exact concordance between test and retest. Since the items are all on an ordinal (or Likert) scale, the Spearman correlation coefficient can also be used to compare responses in the test and retest. Again a correlation near to one signifies good test-retest reliability for a given item (Howell, 1997).

The parameter Kappa and the Spearman correlation are calculated for each item for each version of the HAD scale, and for the three versions together. These are given in Table 1. It can be seen that these parameters are quite high for all three versions.

For the anxiety subscale in the Maltese version, the correlations are all above 0.86, whilst kappa is above 0.84 with the single exception of $a_2 - a_{22}$, for which kappa is 0.68. The correlation for the sum of the items in the anxiety subscale (apre versus apost) is 0.93, showing excellent agreement between the test and the retest.

For the depression subscale in the Maltese version, the correlations are all above 0.82, whilst for most items, kappa is above 0.83. Only $d_1 - d_{11}$ and $d_7 - d_{77}$ have relatively low values of 0.67 and 0.68, respectively, for Kappa. The correlation for the sum of the items in the depression subscale (dpre versus dpost) is 0.97.

The above shows that the test-retest reliability of the Maltese version of the HAD scale is very satisfactory and compares very well both with the original and with the back-translation.

7. Internal consistency of the anxiety and depression subscales

The internal consistency of the anxiety and depression subscales in the three versions of the HAD scale can be examined statistically using Cronbach's alpha and factor analysis. In Table 2, Cronbach's alpha is given for the anxiety subscale (pre, post, and pre and post together), the depression subscale (pre, post, and pre and post together), and the anxiety and depression subscales together (pre, post, and pre and post together). These are calculated separately for the three different versions of the HAD scale.

It was found that for the anxiety retest (i.e. post) variables, Cronbach's alpha was 0.79 for the Maltese version, compared to 0.73 and 0.74 for the original and for the back-translation, respectively.

For the depression *post* variables, the Maltese translation had a Cronbach's alpha of 0.70 compared to the much lower values of 0.45 and 0.51 for the original and for the back-translation, respectively.

When taken together, the anxiety and depression *post* variables yield an alpha of 0.85 as opposed to 0.70 and 0.77 for the original and the back-translation.

If the test (i.e. pre) variables are considered, rather than the retest (i.e. post) variables, Cronbach's alpha shows a slight improvement for all versions of the HAD scale (Table 2).

In all cases, it seems that the anxiety subscale shows more internal consistency than the depression subscale does. To explain this, one could use the technique of factor analysis to examine the correlation structure of the two subscales.

Factor analysis with oblique (direct oblimin) rotation is first performed on the items in a given subscale. One can then retain only those factors with eigenvalues larger than unity. By examining the scree plot of the eigenvalues, one can decide whether the number of useful factors can be reduced further. If the largest eigenvalue is larger than, say, two times the second largest eigenvalue, one can safely retain one factor, and the subscale is then parsimoniously described by one factor. Cronbach's alpha is usually highest under these

conditions, i.e. when the underlying dimensionality of the subscale is one.

Alternatively, a secondary factor analysis can be performed to determine the dimensionality of the system. The number of secondary factors is often considered to be equal to the dimensionality of a subscale.

For each set of items considered, Table 2 shows the number of primary factors with eigenvalues greater than one, together with the subsequent number of secondary factors. For the post variables only, the list of the values of the larger eigenvalues is given, as well as the ratio of the largest to the second largest eigenvalue.

It can be seen that for the post anxiety items $a_{11} - a_{77}$, the largest eigenvalue is at least 2.5 times greater than the second eigenvalue, and besides there is one secondary factor for each version. In the one factor solution for the post anxiety variables, all seven items $a_{11} - a_{77}$ have high factor loadings (> 0.5) in the original and the Maltese versions of the HAD scale. In the back-translation, $a_{11} - a_{55}$ have loadings > 0.65 in the one factor solution (> 0.65). One can therefore safely assume that the anxiety subscale has a dimensionality of one for all the three versions. This would also explain the relatively high values of Cronbach's alpha for the anxiety subscale in each version.

The situation is, however, different when one considers the post depression variables $d_{11} - d_{77}$. In this case, only the Maltese version shows a reasonably high value ($2.62/1.10 = 2.38$) for the ratio of the largest two eigenvalues. It also has one secondary factor. In fact, in the one factor solution for the post depression variables, the items d_{11} , d_{22} , d_{44} , d_{66} and d_{77} have loadings > 0.5 on the factor. For the Maltese version therefore, the depression subscale can be assumed to have an underlying dimensionality of one, thus leading to a reasonable value for Cronbach's alpha (0.70).

For the original and back-translation versions, the correlations between the items $d_{11} - d_{77}$ are generally small, and some are even negative. For this reason, it is difficult to parsimoniously reduce the depression subscale to one dimension. In fact, the ratio of the largest eigenvalues is rather low (1.26 and 1.38, respectively (Table 2)), and there are two secondary factors for the original version. The low (sometimes even negative) correlations between the items and the corresponding loss in parsimony contribute to low values of Cronbach's alpha for the depression subscale in the original and back-translations. This could be due to the particular choice of sample. Possibly, the subjects chosen for these two versions were not stressed or worried enough during the fifth week of Semester I, so that some of the questions in the depression subscale were not relevant to them. Better consistency would probably have been attained for a sample of actually depressed subjects, such as, for instance myocardial infarction patients.

Since these are in short supply, it was decided to use these subjects in a subsequent larger study.

The conclusions of this section are still valid if the pre-items of a given subscale are considered instead of the post-items in any of the three versions. Since there are high correlations between pre- and post-values of each item, the factor structure is practically the same for pre- as for post-items. In fact, when pre- and post-items are factored together, the pre-item and its corresponding post-item always load on the same factor.

8. Conclusion

It was shown in the previous paragraphs, that the test-retest reliability and the internal consistency were both quite good for the Maltese version of the HAD scale.

Table 1 demonstrates high values for the correlation between the test (pre) and retest (post) values of each item. Even the parameter kappa was above 0.8 for most of the items in the two subscales.

The internal consistency of the anxiety subscale was found to be very satisfactory in the Maltese version. The anxiety subscale could be well-represented by one factor, thus leading to a good value of Cronbach's alpha (0.79) for this subscale. Slightly lower, but still acceptable, values of alpha were observed for the original and back-translation versions.

The internal consistency of the depression subscale was also found to be reasonably good in the Maltese version. The depression subscale could also be parsimoniously described by one factor. Cronbach's alpha was found to be 0.70 for this subscale.

The Maltese version of the HAD scale is therefore shown to be a reliable tool to monitor states of anxiety and depression.

Acknowledgements

The authors thank the Foundation of International Studies of the University of Malta for funding this study. We are also grateful to the Director of the Institute of Health Care for the permission given to recruit the three groups of nursing students to participate in this study.

References

- Aylard, P.R., Gooding, J.H., McKenna, P.J., Snaith, R.P., 1987. A validation study of three anxiety and depression self-assessment scales. *Journal of Psychometric Research* 31 (2), 261–268.

- Abiodun, O.A., 1994. A validity study of the hospital anxiety and depression scale in general hospital units and a community sample in Nigeria. *British Journal of Psychiatry* 165, 669–672.
- Aquilina, J., 1985. *Papers in Maltese Linguistics*. University Press, Malta, pp. 42–62.
- Conn, V.S., Taylor, S.G., Abele, P.B., 1991. Myocardial infarction survivors: age and gender differences in physical health, psychosocial state and regimen adherence. *Journal of Advanced Nursing* 16, 1026–1034.
- Chetcuti, J., 1975. Tahrig għall-ezamijiet tal-Malti. Biex tagħmel traduzzjoni tajba. *Veritas Press, Malta*, pp. 9–10.
- Chiou, A., Potempa, K., Buschmann, M.B., 1997. Anxiety, depression and coping methods of hospitalised patients with myocardial infarction in Taiwan. *International Journal of Nursing Studies* 34 (4), 305–311.
- Christman, N.J., McConnell, E.A., Pfeiffer, C., Webster, K.K., Schmitt, M., Ries, J., 1988. Uncertainty, coping, and distress following myocardial infarction: transition from hospital to home. *Research in Nursing and Health* 11, 71–82.
- Crowe, J.M., Runions, J., Ebbesen, L.S., Oldridge, N.B., Streiner, D.L., 1996. Anxiety and depression after acute myocardial infarction. *Heart and Lung* 25 (2), 98–107.
- Howell, D.C., 1997. *Statistical Methods for Psychology*, 4th Edition. Duxbury Press, New York.
- Dixon, W.J. (Ed.), 1992. *BMDP Statistical Software Manual*, Vol. 1. University of California Press, Berkeley.
- El-Rufaie, O., Absood, G., 1987. Validity study of the hospital anxiety and depression scale among a group of Saudi patients. *British Journal of Psychiatry* 151, 687–688.
- Havik, O.E., Maeland, J.G., 1990. Patterns of emotional reactions after a myocardial infarction. *Journal of Psychosomatic Research* 34 (3), 271–285.
- Lewis, G., Wessely, S., 1990. Comparison of the General Health Questionnaire and the hospital anxiety and depression scale. *British Journal of Psychiatry* 157, 860–864.
- Malta Central Office of Statistics, 1999. *Women and Men 1999*. Central Office of Statistics, Malta, pp. 3–27.
- Malasi, T.H., Mirza, I.A., El-Islam, M.F., 1991. Validation of the hospital anxiety and depression scale in Arab patients. *Acta Psychiatrica Scandinavica* 84, 323–326.
- Milne, D. (Ed.), 1992. The hospital anxiety and depression scale (HAD scale). In: *Assessment: A Mental Health Portfolio. Depression*. Nfer-Nelson, Great Britain, pp. 17–23.
- Minckley, B.B., Burrows, D., Ehrat, K., Harper, L., Jenkins, S.A., Minckley, W.F., Page, B., Schramm, D.E., Wood, C., 1979. Myocardial infarct stress-of-transfer inventory: Development of a research tool. *Nursing Research* 28 (1), 4–10.
- Philip, A.E., Cay, E.L., Vetter, N.J., Stuckey, N.A., 1979. Short-term fluctuation in anxiety in patients with myocardial infarction. *Journal of Psychosomatic Research* 23, 277–280.
- Sechrest, L., Fay, T.L., Zaidi, S.M.H., 1972. Problems of translation in cross-cultural research. *Journal of Cross-Cultural Psychology* 3 (1), 41–56.
- Shiell, J., Shiell, A., 1991. The prevalence of psychiatric morbidity on a coronary care ward. *Journal of Advanced Nursing* 16, 1071–1077.
- Streiner, D.L., Norman, G.R., 1989. *Health Measurement Scales. A Practical Guide to their Development and Use*. Oxford University Press, Oxford.
- Thompson, D.R., Webster, R.A., 1989. Effect of counselling on anxiety and depression in coronary patients. *Intensive Care Nursing* 5, 52–54.
- Thompson, D.R., Webster, R.A., Cordle, C.J., Sutton, T.W., 1987. Specific sources and patterns of anxiety in the male patients with first myocardial infarction. *British Journal of Medical Psychology* 60, 343–348.
- Thompson, D., Cordle, C., Sutton, T., 1982. Anxiety in coronary patients. *International Rehabilitation Medicine* 4, 161–163.
- Wiklund, I., Sanne, H., Vedin, A., Wilhelmsson, C., 1984. Emotional reaction, health preoccupation and sexual activity two months after a MI. *Scandinavian Journal of Rehabilitation Medicine* 16, 47–56.
- Wilkinson, M.J.B., Barczak, P., 1988. Psychiatric screening in general practice: comparison of the general health questionnaire and the hospital anxiety and depression scale. *Journal of the Royal College of General Practitioners* 38, 311–313.
- Zigmond, A.S., Snaith, R.P., 1983. The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica* 67, 361–370.

Appendix M

Table M.1. Time frame of the research process.

Time period	Research process
March 1998 - December 1999	<ol style="list-style-type: none"> 1. Literature review 2. Finalising the research proposal 3. Gaining access, ethical approval 4. Translation process of established tools, HAD scale and JAREL SWB scale 5. Exploration of concepts and type of tools with 2 patients with MI 6. Development of new instrument : (HSCS) scale and translation process 7. Content validity of HSCS scale 8. Pre-Pilot study of tools on 20 nursing students pre reliability testing 9. Test-retest of the 3 research instruments 10. Statistical analysis of reliability of tools
January 2000 – April 2000	<ol style="list-style-type: none"> 11. Pilot study on 7 patients 12. Data analysis of pilot study
July 2000 – April 2001	<ol style="list-style-type: none"> 13. Systematic sampling of 70 MI patients 14. Data collection over four times. 15. Transcription of interviews
May 2001 – October 2001	<ol style="list-style-type: none"> 16. Translation of interviews by panel 17. Review of sample of translated interviews by panel of linguistics 18. Analyses of quantitative and qualitative data
November 2001 – February 2002	<ol style="list-style-type: none"> 19. Write up of dissertation
February 2002	<ol style="list-style-type: none"> 20. Submission of dissertation