

THE UNIVERSITY OF HULL

**The Predictors of and Experiences in the Use of Maternal Healthcare Services by
Unmarried Youth in Uganda**

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By

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Abstract

Introduction

Uganda has a high maternal mortality rate combined with poor use of maternal health services among unmarried youth. Improved use of maternal health services by unmarried youth would help reduce maternal deaths in the country. A better understanding of the reasons for the poor use of maternal health services, and the needs and priorities of young women is necessary for designing appropriate policies to address the problem of maternal mortality in Uganda.

The Andersen's behavioural model of access to medical care provided a framework for this study. This thesis explores: predisposing and enabling factors associated with the use of maternal health services among unmarried (compared to married) youth aged 15-24 years between 1995 and 2011; and the experiences of unmarried youth aged 15-19 years during the maternity period in Uganda. More specifically, it examines: i). predisposing and enabling factors associated with the timing and the number of antenatal care visits among unmarried (compared to married) youth aged 15-24 years; ii) the variation in enabling and predisposing factors associated with the use of health facilities at childbirth among unmarried (compared to married) youth, aged 15-24 years; iii). the experiences and support for unmarried youth aged 15-19 years at home and in the community during the maternity period; and iv). the health providers' perspectives in the use of maternal health care services for unmarried youth aged 15-19 years in Uganda.

Methodology

Using a sequential explanatory mixed methods design, two-level binary logistic and linear regression models with district as a second level of analysis were conducted on pooled data of the 1995, 2000/01, 2006 and 2011 Uganda Demographic and Health Surveys. This analysis was among 581 unmarried, compared to 5,437 married youth, aged 15-24 years. Qualitative data collection that followed was conducted among purposively sampled unmarried youth who were pregnant or had had a birth within three years before fieldwork aged between 15-19 years (14 in-depth interviews & 8 focus group discussions). Seven in-depth interviews with youth parents and seven key informant interviews with health providers in Bushenyi and Kibale districts of western Uganda were also carried out. Lived experiences and support to unmarried youth at their

homes, in the community, and health facilities were explored using interpretative phenomenological analysis.

Results

The levels of using antenatal care in the first trimester were generally low among youth, and unmarried youth were less likely to start antenatal care early compared to married youth. Education was the only factor that was significantly associated with the use of antenatal care in the first trimester among unmarried youth. Education predicted use of antenatal care in the first trimester among both unmarried and married youth, but the association was in the opposite direction. Whereas high education was associated with higher chances of the use of antenatal care in the first trimester among married youth (OR=1.30, 95%CI=1.08-1.57), it was associated with late start among unmarried youth (OR=0.56, 95%CI=0.31-0.98). In addition, higher parity, protestant membership and residence in eastern region were associated with late start of antenatal care, while access to radio and television, and at least primary education level of the partner were associated with higher odds of the use of antenatal care in the first trimester among married youth.

It was observed that overall, married youth were more likely to have more frequent antenatal care visits than unmarried youth during the study period. Among unmarried and married youth, higher educational attainment and greater access to radio were associated with frequent antenatal care use. Although high wealth index was associated with more antenatal care visits among unmarried youth (Estimate=0.889, SE=0.424), married youth in highest wealth quintile were associated with infrequent antenatal care (Estimate= -0.334, SE=0.131). Residing in western region was associated with fewer antenatal care visits among both married and unmarried youth. Additionally, married youth living in eastern Uganda had fewer antenatal care visits. Also, access to newspaper was associated with more antenatal care visits among married youth though not among unmarried youth.

Overall, unmarried youth had higher chances of having a childbirth within the health facilities than married youth. Most individual level factors were consistent with patterns observed in the literature among youth, for instance higher educational attainment and access to mass media were associated with higher odds of the use of health facilities at childbirth while higher parity and rural residence were associated with a lower likelihood of the use of health facilities at childbirth. However, some unique patterns

emerged. For instance, both unmarried and married youth engaged in agriculture activities had a lower likelihood of using health facilities at child birth compared to non-working youth (OR=0.47, 95%CI=0.25-0.89 for unmarried vs OR=0.70, 95%CI=0.57-0.87 for unmarried). Among married youth, use of health facilities was lower among those residing in western region compared to those residing in central region (OR=0.55, 95%CI=0.34-0.88), yet not among unmarried youth. Membership of other religions, middle and highest wealth quintiles, more access to radio, high partner education, and residing in a district with a middle education level district were associated with increased chances of the use of health facilities at childbirth among married youth but not among unmarried youth.

The qualitative results reveal that unmarried youth in Bushenyi and Kibale districts of western Uganda had mixed experiences through the maternity period. Most youth experienced psychological distress because of negative attitudes from family, partners and community, and health providers. They were abused by parents, partners denied responsibility for the pregnancies, and most had limited support for their needs during this difficult time. Some got support with information, hospital requirement, and basic needs from parents especially mothers. Few youths got support from their fathers, partners, and community members. Mothers were supportive of the youth mostly to discourage them from engaging in risky abortion.

At the health facilities, sharing of information was not tailored to unmarried youth who were pregnant for the first time. Most young women were mistreated by health providers. They waited for long hours to receive the services in a non-private general waiting area, and some were denied services because they did not go with their partners as the implementation of a policy aimed at increasing male involvement in reproductive health gave priority to couples. A few were satisfied with the competence of the health providers, reported better treatment from the male providers, good maternal and child care information, and appreciated supplies like *mama* kits provided at the health facilities. All these experiences influenced the unmarried youth' use of maternal health services. The qualitative data were also used to explain some of the observed trends and associations in the quantitative analysis.

Conclusion

Although predisposing and enabling factors are important predictors of the use of maternal health care services, the findings on environment, need, and health provider

factors like provider attitudes and implementation of a policy on increasing male involvement in reproductive health services as well as the change in parents' attitudes provide crucial areas for policy intervention. The study provides important findings where policies should be focused to overcome barriers to the use of maternal health care services and reduce maternal deaths among unmarried youth in Uganda.

Dedication

This thesis is dedicated to the Bandwanisas

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My sincere thanks go to Professor Monica Magadi and Dr. Bev Orton for the outstanding supervision and valued contribution to my research. Your support towards the completion of this thesis is highly appreciated.

I am very grateful to the Bandwanisa's family who have walked with me from the start to the end of this journey. My parents, sisters, brothers, in-laws, nieces and nephews who have supported me and prayed for me through this process. Thank you for the love and support.

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All errors and omissions remain my own.

Table of Contents

Abstract	i
Dedication	v
Acknowledgement.....	vi
Table of Contents	vii
List of tables.....	xviii
List of figures	xx
List of Abbreviations.....	xxi
1 CHAPTER ONE: INTRODUCTION	1
1.1 Introduction	1
1.2 Background of the Study	1
1.2.1 Maternal mortality and maternal health services use.....	3
1.2.2 Trends in maternal mortality and maternal health services use in Uganda.	3
1.2.3 Risk factors for maternal mortality in Uganda.....	4
1.3 Government response to maternal health improvement in Uganda	5
1.3.1 Health policies.....	5
1.3.2 Health system and community programs to improve the use of maternal health services among youth in Uganda	8
1.4 Problem statement	9
1.5 Justification of the study.....	11
1.6 The research setting- Uganda	14
1.6.1 Country brief: Geography, administration and Demography	14
1.7 Research objectives	15
1.8 Research hypotheses.....	16
1.9 Operational definition of terms	16
1.10 Organisation of the thesis	17
2 CHAPTER TWO: LITERATURE REVIEW	19
2.1 Introduction	19
2.2 Search strategy	19

2.3	Selection criteria (Inclusion and exclusion criteria)	20
2.4	Search outcome	20
2.5	Description of studies included in this literature review	22
2.6	Socio-economic determinants of maternity care among youth	23
2.6.1	Woman’s education.....	23
2.6.2	Husband’s education	24
2.6.3	Youth and husbands work status.....	24
2.6.4	Household Wealth.....	25
2.7	Spatial factors influencing the use of maternity care services	26
2.7.1	Place of residence.....	26
2.7.2	Region	27
2.7.3	Distance to the health facilities	27
2.8	Demographic determinants of maternal health care services use among youth 28	
2.8.1	Age of the youth.....	28
2.8.2	Parity/ birth order	28
2.8.3	Marital status.....	29
2.8.4	Child wantedness	29
2.9	Socio-cultural factors influencing the use of maternal health services among youth 30	
2.9.1	Religion.....	30
2.9.2	Social group/Ethnicity.....	31
2.9.3	Family and social support	31
2.10	Health facility factors and maternal health services use	32
2.10.1	Quality of services provided	32
2.10.2	Waiting times at the health facilities.....	32
2.10.3	Privacy.....	33

2.10.4	Attitudes of hospital staff	34
2.10.5	Previous use of the maternity services by youth	34
2.11	Women empowerment variables influencing the use of maternal health services	35
2.11.1	Women’s autonomy	35
2.11.2	Domestic/partner violence	35
2.11.3	Personal Barriers	36
2.11.4	Source of health information.....	36
2.12	Theoretical framework	37
2.13	Research implications and research Gap	42
3	CHAPTER THREE: METHODOLOGY OF THE STUDY	45
3.1	Research methodology	45
3.1.1	Rationale for mixed methods	46
3.2	Research Design	47
3.3	Quantitative research methods	50
3.3.1	Data source.....	50
3.3.2	Sample design and response rate.....	50
3.3.3	Questions included in the UDHS	51
3.3.4	Reliability of Demographic and Health Surveys Data.....	52
3.3.5	Dependent variables	52
3.3.6	Independent variables.....	54
3.3.7	Study Population	54
3.3.8	Ethical consideration	55
3.4	Quantitative data analysis.....	55
3.4.1	Univariate data analysis	55
3.4.2	Bivariate analysis	55
3.4.3	Multivariate analysis	55

3.4.1	Multilevel logistic regression for factors of ANC timing and use of health facilities at child birth among youth	56
3.4.2	Multilevel linear regression to model predictors of ANC numbers	56
3.4.3	Justification for Multi-level modelling	57
3.5	Data weighting	58
3.6	Approaches in qualitative research.....	58
3.6.1	Phenomenology.....	59
3.6.2	Feminist research	59
3.7	Qualitative research methods	61
3.7.1	Focus group discussion	61
3.7.2	In-depth interviews.....	62
3.7.3	Key informant interviews.....	63
3.7.4	Qualitative research location.....	63
3.7.5	Sampling	67
3.7.6	Participant recruitment.....	68
3.7.7	Sample size.....	69
3.7.8	Qualitative research participants	69
3.7.9	Qualitative research instruments	70
3.7.10	Research team	71
3.7.11	Recruitment of research assistants	71
3.7.12	Training of research assistants	72
3.7.13	Role of the researcher and research assistants	72
3.7.14	Validity and reliability of qualitative data	73
3.7.15	Data collection	74
3.7.16	Data transcription.....	75
3.7.17	Qualitative data analysis	76
3.8	Ethical considerations.....	77

3.8.1	Ethics approval.....	77
3.8.2	Informed consent.....	78
3.8.3	Confidentiality, privacy and anonymity.....	79
3.9	Dissemination of the study results.....	80
3.10	Relationship of the researcher to the research.....	81
3.11	Reflexive statement	82
3.12	Chapter Summary.....	84
4	CHAPTER FOUR: DETERMINANTS OF THE USE OF ANTENATAL CARE AMONG UNMARRIED AND MARRIED YOUTH IN UGANDA BETWEEN 1995 AND 2011	85
4.1	Introduction	85
4.2	The conceptual framework.....	86
4.3	Research questions	88
4.4	Research Hypotheses.....	88
4.5	Data sources	88
4.6	Variables of the study.....	89
4.6.1	Dependent variables.....	89
4.6.2	Predictor variables of the study.....	89
4.7	Method of analysis for determinants of ANC visits within the first trimester and ANC numbers among youth in Uganda	91
4.7.1	Introduction.....	91
4.8	Levels of antenatal care use among youth.....	93
4.8.1	Levels in the use of antenatal care among unmarried compared to married youth between 1995-2011 in Uganda	93
4.8.2	Background characteristics of the respondents	94
4.9	Trends in ANC use among unmarried and married youth between 1995 and 2011	94

4.9.1	Trends in the timing of antenatal care among youth in Uganda, between 1995 and 2011	94
4.9.2	Trends in the number of ANC visits among unmarried and married youth 15-24 years	95
4.10	Antenatal care timing differentials among unmarried and married youth aged 15-24 years in Uganda between 1995 and 2011	97
4.10.1	ANC timing differentials by predisposing variables.....	97
4.10.2	Enabling factors and ANC timing differentials among youth	98
4.10.3	Mass media and ANC timing differentials among youth in Uganda	99
4.10.4	ANC timing differentials by husband characteristics	100
4.11	Determinants of timing of antenatal care among unmarried and married youth in Uganda	102
4.11.1	Marital differences in the timing of antenatal care among youth 15-24 years	102
4.11.2	Procedure for the analysis of factors for the timing of antenatal care among unmarried compared to married youth	102
4.11.3	Predictors of the timing of antenatal care among unmarried youth	103
4.11.4	Antenatal care use in the first trimester among married youth 15-24 years	104
4.12	Differentials in the number of ANC visits among unmarried and married youth aged 15-24 years in Uganda.....	110
4.12.1	Mean antenatal care numbers by predisposing factors among unmarried compared to married youth	110
4.12.2	Differences in ANC numbers by enabling factors	111
4.12.3	ANC frequency differentials by access to mass media.....	112
4.12.4	Married youth husband characteristics and differentials in the mean number of ANC visits	113
4.13	Predictors of the Number of ANC Visits among Unmarried compared to Married Youth in Uganda between 1995 and 2011	115

4.13.1	Introduction	115
4.13.2	Factors for antenatal care frequency among unmarried youth in Uganda 115	
4.13.3	The Determinants of antenatal care numbers among married youth	118
4.14	Discussion of key findings for the use of antenatal care among youth	123
4.14.1	Introduction	123
4.14.2	Levels in the use of antenatal care among unmarried (compared to married) youth	123
4.14.3	Predictors of ANC use among unmarried compared to married youth in Uganda	125
4.15	Summary and Conclusion	131
5	CHAPTER FIVE: FACTORS THAT INFLUENCE THE USE OF HEALTH FACILITY AT DELIVERY AMONG UNMARRIED AND MARRIED YOUTH IN UGANDA	133
5.1	Background and objectives.....	133
5.2	Research questions	135
5.3	Variables of the study	135
5.3.1	Dependent variable.....	135
5.3.2	Independent variables: Individual level and district level variables	136
5.3.3	Data analysis method	136
5.4	Levels in the use of health facilities at childbirth.....	136
5.5	Trends in health facility use at childbirth among unmarried and married youth aged 15-24 years between 1995 and 2011 in Uganda.....	137
5.6	Bivariate association between health facility delivery and different independent variables	137
5.6.1	Relationship between health facility delivery and predisposing characteristics of youth	137
5.6.2	Differentials in the use of health facilities at birth by selected enabling factors	139

5.6.3	Access to mass media and the use of health facilities at birth	140
5.6.4	Husband's characteristics and facility delivery differentials among married youth	141
5.6.5	District level variables and the use of health facilities at child birth	141
5.7	Predictors of Health Facility Delivery among Unmarried and Married Youth in Uganda	144
5.7.1	Procedure for modelling factors for the use of health facilities at child birth among youth	144
5.7.2	Determinants of the use of health facility at childbirth among unmarried youth in Uganda	145
5.7.3	Factors for health facility use at delivery for married youth.....	147
5.8	Discussion of findings for the use of health facilities at child birth among unmarried compared to married youth in Uganda between 1995 and 2011	153
5.8.1	Introduction.....	153
5.8.2	Observed levels in the use of health facilities at childbirth among unmarried and married youth in Uganda between 1995 and 2011	153
5.8.3	Predictors of the use of health facilities at childbirth among unmarried compared to married youth in Uganda.....	154
5.9	Summary and Conclusion	159
6	CHAPTER SIX: EXPERIENCES OF YOUTH AND THE SUPPORT RECEIVED DURING THE MATERNITY PERIOD AT HOME AND IN THE COMMUNITY.....	160
6.1	Introduction	160
6.2	Pregnancy knowledge, disclosure and reactions	167
6.2.1	Shame and fear felt by the youth.....	167
6.2.2	Youth pregnancy disrupts family	169
6.2.3	Youth partners relations	171
6.3	Changes and needs after getting pregnant.....	174
6.3.1	Health changes	174

6.3.2	Nutrition changes and needs	175
6.3.3	Dressing and hospital requirements	176
6.3.4	Transition to adulthood	178
6.3.5	Child care	180
6.4	Community relations during the maternity period	182
6.4.1	Stigma from community	182
6.4.2	Customs and cultural practices	182
6.4.3	Use of non-professional providers	184
6.5	Reproductive health information	185
6.5.1	Source of information on where to access maternity services from	186
6.5.2	Information, communication and technology use	187
6.5.3	Information on family planning	188
6.6	Expected support during the maternity period	190
6.6.1	Expectations from family	190
6.6.2	Expectations from partner	192
6.7	Contradictory perspectives of youth and parents	193
6.8	Discussion of findings	196
6.9	Summary and conclusion	201
7	CHAPTER SEVEN: HEALTH PROVIDERS PERSPECTIVES AND YOUTH EXPERIENCES DURING THE MATERNITY PERIOD	204
7.1	Introduction	204
7.2	Care and treatment at health centres.....	205
7.2.1	Attitudes of the providers.....	205
7.2.2	Quality of care.....	211
7.2.3	Long waiting times at the health centres.....	215
7.3	Integration of results from both strands	219
7.3.1	Levels in the use of maternal health services.....	219

7.3.2	Understanding the observed relationships in the quantitative data.....	220
7.4	Discussion of findings	222
7.5	Summary and Conclusions	226
8	Chapter eight: Overall discussion of results	227
8.1	Introduction	227
8.2	Discussion of key quantitative data findings.....	228
8.2.1	Predisposing factors associated with maternal health care services use among unmarried youth in Uganda.....	228
8.2.2	Enabling factors associated with the use of maternal health care services among unmarried youth in Uganda.....	231
8.3	Discussion of key findings from the qualitative component.....	235
8.3.1	Need variables	236
8.3.2	Environment factors	238
8.3.3	Health provider factors.....	240
8.4	The contribution of the study	243
8.5	Limitations of the study.....	245
8.5.1	Quantitative data limitations	245
8.5.2	Qualitative data limitations	247
8.6	Chapter summary	248
9	Chapter nine: Conclusion and Recommendations	249
9.1	Thesis summary.....	249
9.2	Recommendations for policy and future research	251
9.2.1	Policy implications of the study findings.....	251
9.2.2	Recommendations for further research	254
9.3	Concluding thoughts.....	256
	REFERENCES.....	257
	Appendix I: Study quality criteria.....	I

Appendix II: Articles included in the systematic review	III
Appendix III: Multicollinearity test	XX
Appendix IV: Characteristics of the quantitative study respondents	XXIII
Appendix V: Determinants of ANC timing among youth aged 15-24 years in Uganda, 1995-2011	XXVI
Appendix VI: Generalised linear regression of the mean number of ANC visits among youth including marital status	XXVIII
Appendix VII: Predictors of the use of health facilities at childbirth among youth between 1995-2011 including marital status.....	XXXI
Appendix VIII: Characteristics of in-depth participants (unmarried youth).....	XXXV

List of tables

Table 3. 1: Sample size and response rate for the UDHS (1995-2011)	51
Table 4.1: Predictor variables of the study.....	90
Table 4.2: Distribution of ANC use among youth between 1995 and 2011	93
Table 4.3: Trends in proportions having at least four ANC visits among unmarried and married youth aged 15-24 years in Uganda between 1995 and 2011	95
Table 4.4: Variations in the use of ANC in the first trimester by predisposing factors among unmarried (compared to married) youth	98
Table 4.5: Variations in ANC timing in the first three months of the pregnancy by enabling factors	99
Table 4.6: Differentials in ANC use in the first trimester by access to mass media.....	100
Table 4.7: Disparities in ANC use in the first trimester by husband characteristics	101
Table 4.8: Adjusted odds of first trimester antenatal care use among unmarried youth (confidence intervals in brackets)	104
Table 4.9: Average Odds of first trimester antenatal timing among married youth from Multilevel Logistic Regression Models	107
Table 4.10: Mean ANC visits by predisposing factors among youth	110
Table 4.11: Mean ANC visits by enabling factors among youth.....	112
Table 4.12: Differentials in mean ANC visits by access to mass media among youth.	113
Table 4.13: Variations in mean ANC visits by married youth husbands' characteristics	113
Table 4.14: Multilevel Linear Regression parameter estimates of the number of ANC visits among unmarried youth (standard errors given in brackets).....	117
Table 4.15: Multilevel Linear Regression parameter estimates of the number of ANC visits among married youth (standard errors given in brackets).....	120

Table 5. 1: Distribution of unmarried and married youth (15-24 years) by place of delivery.....	136
Table 5. 2: Trends in the use of health facilities at birth among youth in Uganda	137
Table 5. 3: Association between predisposing factors and health facility use at delivery	138
Table 5. 4: Relationship between enabling factors and the use of health facilities at birth	139
Table 5. 5: Mass media access and the relationship with the use of health facilities at delivery.....	140
Table 5. 6: Husband characteristics and health facility use at delivery among married youth 15-24 years.....	141
Table 5. 7: Difference in the use of health facility at childbirth by district level factors	142
Table 5. 8: The Determinants of health facility use at childbirth among unmarried youth in Uganda presented as odds ratio and 95% confidence intervals in brackets.....	146
Table 5. 9: Determinants of health facility use at birth among married youth in Uganda presented as odds ratio and 95% confidence intervals in brackets	150
Table 6. 1: Summary of youth in-depth interview participants' characteristics	162
Table 6. 2: Summary of focus group discussion participants' characteristics	163
Table 6. 3: Characteristics of youth' parents	165
Table 6. 4: Characteristics of health providers.....	166

List of figures

Figure 1: Map of Africa showing Uganda	xxiii
Figure 2. 1: PRISMA flow chart showing the systematic review studies selection	22
Figure 2. 2: A conceptual framework	41
Figure 3. 1: An explanatory sequential research design visual diagram.....	49
Figure 3. 2: Map of Uganda showing Bushenyi and Kibaale districts as at 1 st July 2017	64
Figure 3. 3: Map of Kibaale showing Buyanja constituency and eleven sub-counties as of 1 st July 2017	65
Figure 3. 4: Map of Bushenyi showing three constituencies and thirteen sub-counties as of 1 st July 2017	66
Figure 4. 1: A conceptual framework for the analysis of determinants of antenatal care use among youth	87
Figure 4. 2: Trends in having the first ANC visit in the first trimester (1995-2011).....	95
Figure 5. 1: A conceptual framework for the analysis of determinants of the use of health facilities at childbirth among youth.....	134

List of Abbreviations

ANC:	Antenatal care
CI:	Confidence interval
DHS:	Demographic and Health Survey
FGD:	Focus group discussion
HSDSP:	Health Sector Strategic Development Plan
IDC:	Intra-district correlation coefficient
MDGs:	Millennium Development Goals
MOGLSD:	Ministry of Gender, Labour and Social Development
MOH:	Ministry of Health
NPA:	National Planning Authority
NPC:	National Population Council
OR:	Odds Ratio
PNC	Postnatal care
PNFP:	Private Not for Profit
PQL:	Penalized Quasi Likelihood
SARA:	Service Availability and Readiness Assessment
SDGs:	Sustainable Development Goals
SE:	Standard error
SPA:	Service Provision Assessment Survey
SSA:	sub-Saharan Africa
TBA:	Traditional Birth Attendant
UBOS:	Uganda Bureau of Statistics
UCMB:	Uganda Catholic Medical Bureau
UDHS:	Uganda Demographic and Health Survey
UMMB:	Uganda Muslim Medical Bureau
UN:	United Nations
UNAIDS:	The Joint United Nations Programme on HIV and AIDS

UNDP:	United Nation Development Program
UNFPA:	United Nations Population Fund
UNICEF:	United Nations International Children Emergency Fund
UOMB:	Uganda Orthodox Medical Bureau
UPMB:	Uganda Protestant Medical Bureau
USAID:	United States Agency for International Development
VPC:	Variance Partition Coefficient
WHO:	World Health Organisation



Figure 1: Map of Africa showing Uganda

1 CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter aims to introduce the thesis and offer a brief description of what follows in subsequent chapters. It starts with the background context to the study, including a review of international and national policies in Uganda for the improvement of maternal health, as well as a statement of the problem and justification for the current study. This is followed by an overview of the study setting and subsequent presentation of the overall aims and specific objectives of the study. Finally, an outline of each chapter included in this thesis is presented.

1.2 Background of the Study

Maternal health is at the centre of global health challenges and forms part of the ‘unfinished agenda’ of the Millenium development goals, due to continually high maternal deaths (UN, 2015, 2018; UNDP, 2015; UNICEF, 2015; WHO, 2018c). Globally, maternal deaths related to pregnancy rose from 289,000 in 2013 to 303, 000 in 2015 (WHO et al, 2014, 2015; Alkena et al., 2016). Despite the 44 percent drop in the maternal mortality ratio from 385 deaths per 100,000 in 1990 to 216 per 100,000 in 2015, estimates show that 830 women died each day from preventable deaths, related to complications of pregnancy and child birth in 2015 (WHO, 2016; UN, 2018; UNICEF, 2016; WHO, 2018c).

The problem is more severe for developing countries since maternal mortality is considerably higher in developing countries than developed countries. For instance, there are about 239 deaths per 100,000 births in developing countries compared to 12 deaths per 100,000 births in developed countries (WHO, 2014, 2016, 2018b; UNICEF, 2017). Almost all (99%) maternal deaths occur in developing countries (WHO, 2016, 2018b). Sub-Saharan Africa¹ accounts for over half of these maternal deaths (WHO,

¹ Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo (Brazzaville), Congo (Democratic Republic), Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Réunion, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Western Sahara, Zambia & Zimbabwe.

2002, 2005, 2016; Zureick-Brown et al., 2013). Estimates further show that Sub-Saharan Africa has the highest maternal mortality ratio (546 per 100,000 live birth) compared to any other region of the world (South Asia at 182 per 100,000 live births, Middle East including North Africa at 110 per 100,000 live births, Latina America & Caribbean at 68 per 100,000 live births, East Asia & Pacific at 62 per 100,000 live births, Central & East Europe (CEE) including Commonwealth Independent States (CIS) at 25 per 100,000 live births) (WHO, 2016, 2018b; UNICEF, 2017).

These maternal deaths are due to direct causes such as haemorrhage, hypertensive disorder, sepsis, obstructed labour and unsafe abortions; while others are caused or associated with indirect or co-existing medical conditions that are exacerbated by the pregnancy for example, hypertension, HIV/AIDs, malaria, (sickle cell) anaemia, diabetes, hepatitis, and infections (Ronsmans et al., 1998; Donnay, 2000; Graham et al., 2001; Mbonye et al., 2003; Ronsmans et al., 2006; Khan et al., 2006; Hogan et al., 2010; WHO, 2012c; Bouvier-Colle et al., 2012; Kassebaum et al., 2014; Say et al., 2014; WHO et al., 2014; 2015; Kassebaum et al., 2016; Patten & Javanbakht, 2017; WHO, 2018c). The majority of maternal deaths are due to direct causes including maternal haemorrhage, sepsis and maternal hypertensive disorders (Donnay, 2000; Mbonye et al., 2003; Ronsmans et al., 2006; Say et al., 2014, UN, 2015b). Direct causes account for 75 percent of all maternal deaths while 25 percent of the maternal deaths are associated with diseases like malaria and HIV/AIDS (Say et al., 2014, WHO, 2018c).

Most of the underlying causes of a large number of maternal deaths are due to women's limited access to quality care and reproductive services, prior to, during and after childbirth, (WHO et al., 2014, 2015). The limited access to maternal health services is worsened by shortages of skilled health personnel in poor and rural communities (WHO, 2003; Gerein et al., 2006; Anyangwe & Mtonga, 2007; WHO, 2007, 2014, 2015, 2016, 2018). Foreexample, only 40 percent of all pregnant women in low income countries had the recommended ANC visits in 2015 (WHO, 2018c). In sub-Saharan Africa, where maternal mortality ratios are the highest, less than half (only 46%) of the females had trained providers supervising them during childbirth (WHO et al., 2014, 2015).

1.2.1 Maternal mortality and maternal health services use

Reducing maternal mortality will not be achieved by a single intervention or measure (Sloan et al., 2001; Bullough et al., 2005). However, effective utilization of maternal health services during pregnancy, at birth and after childbirth is essential in reducing maternal morbidity and maternal deaths (Bulatao & Ross, 2003; Ray & Salihu, 2004; Bullough et al., 2005; WHO et al., 2014, 2015; Koblinsky et al., 2016). These include the use of antenatal care during pregnancy with effective assessment and proper management of pregnancy risks (Rooney, 1992; Villar & Bergsjø, 1997; Koshar et al., 1998; Carroli et al., 2001; Simkhada et al., 2008), giving birth in the health institutions (Donnay, 2000; Campbell et al., 2006; CDC, 2014; Serbanescu et al., 2017), and having skilled providers in attendance at childbirth (Koblinsky et al., 1999; Graham et al., 2001; Buor & Bream, 2004; Mbonye et al., 2007). A reduction in maternal deaths has also been observed by providing and utilising emergency obstetric care (Koblinsky et al., 1999; Donnay, 2000; Paxton et al., 2005; Mbonye et al., 2007; Fournier et al., 2009; Souza et al., 2013; CDC, 2014) as well as the use of appropriate postnatal care (Li et al., 1996; Bang et al., 2004; Ransmans et al., 2006).

1.2.2 Trends in maternal mortality and maternal health services use in Uganda

Maternal mortality in Uganda stood at 336 (95%CI=272-401) per 100,000 live births, for the seven-year period before the 2016 Uganda Demographic and Health survey (UDHS) (UBOS & ICF, 2018). This is a downward trend from the highs of 687 in 1990 (WHO, 2015b), 505 per 100,000 live births throughout the ten-year period before the 2000/01 UDHS (UBOS & ICF Macro, 2001), 435 per 100,000 live births for the five-year period before 2006 UDHS (UBOS & Macro International, 2007), to 438 throughout the seven years before 2011 (UBOS & ICF International, 2012), and 343 in 2015 (WHO, 2015b). This reduction in the maternal mortality ratio could be attributed to improvements in the use of maternal health services in Uganda. For instance, the proportion of women using health facilities at childbirth and being attended to by a health professional during delivery increased between 2001 and 2016 (33.6% & 37% in 2001, 41% & 42% in 2006 to 57.4% & 58% in 2011, as well as 73% & 74% in 2016 respectively) (UBOS & Macro International, 2001; UBOS & ICF International, 2007; UBOS & ICF, 2012, 2018). There are however gaps in the use of maternal health services due to the relatively long distances that need to be travelled in order to reach health facilities coupled with long waiting periods spent at the health facilities (Amooti-

Kaguna & Nuwaha, 2000; Mbonye, 2001 Tann et al., 2007). In addition to these factors, other conditions, such as lack of skilled personnel (Pearson & Shoo, 2005), poor quality of services (Parkhurst et al., 2005; Parkhurst & Ssengooba 2009), basic medical commodities being out of stock (Pearson & Shoo, 2005; Nabukera et al., 2006), poor attitudes of the providers (Wallace, 2000; Nabukera et al., 2006), and socio-economic inequalities in being able to gain access to maternal health services (Kyomuhendo, 2003; Ronsmans et al., 2006; Tann et al., 2007; Bbale, 2011; UBOS & ICF ineternational, 2011; Finlayson & Downe 2013; UNICEF, 2014; Kalule-Sabiti et al., 2014; Rutaremwa et al., 2015; UBOS & ICF, 2018) are also prevalent and relevant.

Uganda like most developing countries failed to meet the Millennium Development Goal (MDG) 5, target 5.1 of reducing the maternal mortality ratio to 131 deaths per 100,000 live births (UBOS & ICF International, 2012; UNDP, 2015). Target 5.5b (four ANC visits by trained health provider; 47.6% vs 100%) and target 5.2 (percentage of birth attended by a skilled provider; 58% vs 100%) were also far from being realised (UBOS & ICF International, 2007). Coupled with low levels of the use of postnatal care (33% in 2011), the overall use of maternal health services were low and maternal mortality levels were still high. This may mean that reducing maternal mortality requires improved use of maternal health services among all population groups.

The use of ANC was at 93 and 97 percent among adolescents in Uganda in 2011 and 2016 respectively while having at least four ANC visits was at 14 percent among adolescents in 2011. The use of health facilities at childbirth and trained birth assistance at childbirth was at 48.8% and 50% in 2006, and 66% and 67% among adolescents in 2011 respectively. Although the use of maternal health care services among adolescents seems to be high, it masks the low levels of use among unmarried ones that have been identified in other studies (Magadi et al., 2007; Ochako et al., 2011; Hokororo et al., 2015; Reibel et al., 2015).

1.2.3 Risk factors for martenal mortality in Uganda

Maternal deaths have been found to be high among rural, poor, and less educated women (Ronsmans et al., 2006; Tann et al., 2007; Bbale, 2011; UBOS & ICF International, 2012; Finlayson & Downe 2013; WHO, 2014; UNICEF, 2014; Kalule-Sabiti et al., 2014; Rutaremwa et al., 2015; UBOS & ICF, 2018). Poor staffing levels (Azfar et al., 2001; Ssengooba et al., 2003; Bouchard et al., 2012), drug stock outs due to low funding of the health sector (Nabyonga et al., 2005; Masters et al., 2014; Musoke

et al., 2014) and misappropriation of health funds (Azfar et al., 2001; Ssenooba et al., 2003; Bouchard et al., 2012; Angumya, 2013; Kagolo, 2013) as well as cost sharing have also been found to negatively influence the use of maternal health services especially among youth in Uganda. In addition, maternal deaths are also high among adolescents and young women due to early ages at childbirth (Singh et al., 2006; Bearinger et al., 2007; Singh et al., 2010; Althabe et al., 2015; WHO, 2016). Uganda has a high youth fertility rate of 224 births per 1000 live births as fertility peaks between 20-24 years in Uganda (UBOS, 2014, 2016). This could be due to high teenage pregnancies, early age at marriage and low contraceptive use (Darroch et al., 1999; UNICEF, 2014; UBOS & ICF, 2008, 2018; MOH, 2017). Youth also contribute 28 percent of the national Maternal Mortality Ratio in Uganda (UBOS & ICF International, 2012).

1.3 Government response to maternal health improvement in Uganda

1.3.1 Health policies

On realisation that the highest burden and causes of death were preventable causes including prenatal and maternal causes in Uganda, (20.4%) (MOH, 1999; MOH, 2010), National Health Policy I was formulated and covered the period 1999-2014 (MOH, 1999). This was extended into National Health Plan II which covered the period 2010-2015, (MOH, 2010b, 2014). Both were set out to prevent disease and reduce the mortality burden through health promotion and disease prevention. They proposed a minimum health package with cheap healthcare interventions and services addressing the high disease burden including prenatal and maternal health, that are acceptable and affordable. In addition, the second National Health Policy hoped to strengthen public and private partnerships for health and health systems.

Later, a need for baseline data on the health conditions, causes of health conditions and strategies for achieving MDG targets emerged. In 2010, the national Planning Authority developed the first national development plan, (NDP I) 2010/11-2014/15 which provided that information. It also emphasized universal access and sustainable financing mechanisms. (MOH, 2010b). This was followed by a national sharpened plan that was adopted in 2013 focusing on health advocacy, resource mobilisation, and the prioritisation of high impact intervention that were aimed at renewing the promise to stop preventable child and maternal deaths (MOH, 2013). However, MDG 5 targets

were not met by 2015 as the MMR remained at 343 per 100,000 live births compared to the targeted rate of 131 per 100,000 live births in Uganda (WHO, 2015b).

With the subsequent adoption of the Sustainable Development Goals (SDGs), questions remain as to whether Uganda will meet SDG 3 target 3.1 of reducing maternal mortality ratio to less than 70 per 100,000 live births, with no country having a MMR of more than twice the global average by 2030. To achieve the 2030 SDG 3.1, countries need a 7.5% annual reduction of their MMR (WHO et al., 2016). Uganda requires a five percent (about 18 per 100,000 live births) decline in maternal mortality ratio per year. However, at the current two percent annual decline (343 in 2015-336 in 2016), the MMR rate in Uganda is likely to be greater than double the global average by 2030. At the current pace, Uganda is likely not to meet SDG 3 target 3.1 until 2049 (39 years). Achieving this will require universal use of maternal health care services (Alam et al., 2015).

Uganda then developed the second national development plan (NDP II, 2015/16-2019/20) which targets a reduction in MMR from 438 to 320 deaths per 100,000 live births by 2020. Some of the set targets that directly or indirectly aim to reduce maternal and child mortality include improved maternal health to increase women and new born survival. This was hoped to be achieved through increasing the levels of childbirths taking place in the health facilities, supervised deliveries by trained birth attendants, and improved access to antenatal care and postnatal care. Reduction in teenage pregnancies, improved school enrolment and completion rates for teenagers, better nutrition among women of reproductive ages and continued efforts to reduce mother to child transmission of HIV/AIDS and gender-based violence were also aimed at achieving improved maternal survival.

The National Planning Authority then designed the Vision 2040 which aims to reduce maternal mortality ratio from 438 per 100,000 live births in 2011, to 15 per 100,000 live births by 2040 (NPA, 2015b). It set out policies geared towards improving health in general and maternal health in particular. This was through improved nutrition, especially among children and women of reproductive ages, by means of provision of micronutrients and improved nutritional care. In addition, improved government expenditure on health, including the building of health centres of excellence, and population control through fertility reduction policies will help achieve the targets. Building an efficient health services delivery system from public centered to a public-

private partnership, and universal health insurance system are all essential to achieve universal health coverage (NPA, 2015a). The National Health Insurance Bill 2016 is awaiting consideration of Parliament (MoFPED, 2016/17, 2017/2018, 2018/2019). However, none of these policy documents had so far designed policies that are specific to youth' access to maternal health services.

On realising the contribution of adolescents to the maternal mortality burden, the government of Uganda developed a more focused and robust plan, extending the 2013 plan to 2020, in line with Health Sector Strategic Development Plan (HSDP II) (MOH, 2015b), to help achieve NDP II and SDG targets and feed into the country's Vision 2040. This plan recognises that adequate policies have already been formulated in Uganda, but the problem is a lack of implementation. Also, socio-economic development, which has been the focus of previous policy documents is not easily mutable, as it would require more time and financial investments (MOH, 2016a). The focus of the 2016 sharpened plan is to change focus and shift from doing business as usual' (MOH, 2016a: p 19). It is action oriented and recognises the importance of leadership at all levels. It has identified five strategic shifts including prioritising an adolescent sexual and reproductive health (SRH) component, inclusion of Civil Registration and Vital Statistics (CRVS) for strengthening accountability and monitoring of Reproductive, Maternal, newborn, Child, and Adolescent Health (RMNCAH) results. It also prioritised support to districts with high number of deaths that contribute to a higher national rate, but not districts with high rates (MOH, 2016a). The adolescent SRH is aimed at improving adolescent's realization of their rights to health, wellbeing, and full participation in the health system, as well as being better prepared for adulthood stage (MOH, 2016a). The CRVS component shows the causes of maternal deaths, so that there can be an improvement in accountability and as a consequence, policies geared towards prevention of such deaths are devised. It has identified the top forty districts with the highest numbers that contribute to the higher national rates to meet the set targets, rather than the previous strategies which were geared towards districts with high rates. This plan also recognises the need for quality of care, knowledge, and attitudes of health staff, and availability of medical equipment to improve maternal and child health (MOH, 2016a).

Uganda is party to several policies aimed at improving health including prenatal and maternal health. However, there is limited recognition to review policies relating to

maternal health care utilisation among youth, who are both the victims of early childbearing and maternal mortality (Conde-Agudelo et al., 2005; Patton et al., 2009; Ganchimeg et al., 2014; WHO, 2016), and use maternal health care services poorly (Mbonye, 2001; Simkhada et al., 2008), except for access to pregnancy prevention services (family planning), post abortion care, and treatment of Sexually Transmitted Infections (STIs) (MOGLSD, 2001, 2016; MOH, 2013, 2016).

1.3.2 Health system and community programs to improve the use of maternal health services among youth in Uganda

1.3.2.1 Youth centres/ youth friendly services

Research has showed that youth would like to access friendly reproductive health services from centres that are exclusive to the youth. Youth friendly services have been associated with increased use of the RH services (Mmari et al., 2003). However, most of these centres in Uganda provide HIV related services especially HIV treatment, and family planning services (Reproductive health Uganda, 2019, WHO (nd)). They are assumed to be the main problems youth face. However, there is one centre (Naguru Teenage Information and Health Centre), which provides reproductive health information services including maternal health care services to the youth (NTIHC, 2019). The staff at this health centre are trained in how to treat youth who are given priority in service provision. However, the community acceptance of youth access to reproductive health services may have a larger impact on youth access to health services so that they support the youth to access the RH services.

1.3.2.2 Vouchers to access health services and vouchers for transport

Due to the three delays to access maternal health services, (especially the delay in reaching care and delay in receiving adequate health care, NGO's have come up with the initiative of providing women with vouchers to help them access the services. Some provide transport vouchers which help women reach health centres faster during the maternity period, and this was associated with improved use of ANC and health facility deliveries (Kajubu, 2009; Pariyo et al., 2011; Ekirapa-Kiracho et al., 2011; Save the Children, 2017; Roads & Kingdoms, 2018; Ngoma et al., 2019). The Ministry of Health with financial support from the Swedish International Development Cooperation Agency (SIDA) and through Marie Stopes Uganda has implemented The Uganda Reproductive Health Voucher Project since 2014 (Marie Stopes, 2019). Women purchase subsidized vouchers at four thousand (4000 UGX) Uganda shillings (89p),

which entitles them to access four ANC visits, safe delivery, one PNC, post-partum family planning, treatment and management of selected pregnancy-related medical conditions and complications including caesarian sections, and emergency transport from contracted private and public health facilities (ReliefWeb, 2017; Marie Stopes, 2019; Nabatanzi, 2019; Nakabugo, 2019). Thus, the poor and disadvantaged rural women can access high quality services that they would not have accessed due to cost. This leads to improved use of maternal health services and thus reduced maternal and child mortality (ReliefWeb, 2017).

1.3.2.3 Saving mothers and giving life project

In June 2012, the Government of Uganda in collaboration with other USA based organisations realised that reducing maternal mortality requires a multi-partner effort and implemented a Saving Mothers, giving life (SMGL) project in four districts (Kabarole, Kibaale, Kamwenge, and Kyenjojo) in Uganda. This was aimed at strengthening districts to overcome the three delays (delay in decision to take care, reaching care and receiving adequate care) to access maternal health services. It was evaluated at one year and there was a significant improvement in the use of health facilities at child birth as well as a 35% and 30% reduction in facility and population based maternal mortality ratio (Serbanescu et al., 2017). The SMGL program was then scaled up to 13 districts in Uganda within four years and was also related with an increase in health facilities providing emergency obstetric and new born care (10% to 25%), all health facilities had a staff trained in EmONC and increase in staffing to provide services for 24 hours, 7 days a week. This was associated with improvements maternal and perinatal mortality rates and the use of maternal health services (Conlon et al., 2019; Morof et al., 2019; Ngoma et al., 2019). However, SMGL project came to an end in Uganda. More efforts are needed to sustain these gains and to eliminate preventable maternal and perinatal deaths further.

1.4 Problem statement

Uganda did not achieve MDG 5, of reducing maternal mortality ratio to 131 women deaths per 100, 000 live births by 2015, as its MMR stood at 343 in 2015 (UNDP, 2013; UNDP, 2015; WHO, 2015b). Uganda still has a high burden of MMR at 334 in 2016, with approximately 16 women dying each day due to pregnancy and childbirth complications (UBOS & ICF, 2018). The Ugandan government has ambitious post-MDG era aims of reducing MMR to 320 per 100,000 live births by 2020 (NPA, 2015a,

MOH, 2016a), 70 per 100,000 live births by 2030 (UN, 2015, UNDP, 2015), and 15 per 100,000 live births by 2040 (NPA, 2015b). The use of maternal health services during pregnancy, at and after birth has been observed to be associated with lower maternal mortality (Bulatao & Ross, 2003; Ray & Salihu, 2004; Bullough et al., 2005; WHO et al., 2014, 2015; Koblinsky et al., 2016). It is thus a big task for the Ugandan government to increase the uptake of maternal health services among all population groups, in order to achieve the SDG 3.1 target of reducing maternal mortality ratio to less than 70 per 100,000 live births, with no country having a MMR of more than twice the global average (140 deaths per 100,000 live births) by 2030.

Historical observations established that a 91 percent coverage of one antenatal care visit, 78 percent of four antenatal care visits, 81 percent of in-facility delivery and 87 percent of skilled birth attendance will enable the attainment of SDG 3.1 (Kassebaum et al., 2016). There are visible improvements in the levels of the use of maternal health services although some indicators are still low in Uganda. Although use of ANC is almost universal (90% in 2001 to 93% in 2006 to 95 in 2011, and 97% both in 2011 and 2016), early start of ANC (21% in 2011 vs 29% in 2016) and the proportions having at least four ANC visits are still low (42% in 2001 to 47% in 2006 to 48% in 2011, and 60% in 2016). The proportion of women using health facilities at childbirth and attended to by a health professional during delivery increased between 2001 and 2016 (42% & 41% in 2006 to 58% & 57.4% in 2011, and 73% & 74% in 2016 respectively). However, levels of postnatal check-up are still low but improved greatly from 17% in 2006 to 33% in 2011, and then to 54% in 2016. (UBOS & ICF, 2012, 2018).

Similar to other regions of the world, the use of maternal health services is low among poor, rural, and low educated women (Ronsmans et al., 2006; Tann et al., 2007; Bbale, 2011; Finlayson & Downe 2013; WHO, 2014; UNICEF, 2014; Kalule-Sabiti et al., 2014; Rutaremwa et al., 2015; UBOS & ICF, 2011, 2018). These have been the focus of the reviewed policy documents like the 2013 sharpened plan, National development plan I & II and the Health Sector Development Plan (HSDP) I & II in Uganda (MOH, 2000; 2013, 2015b, 2016; NPA, 2015a, 2015b). However, the reductions in maternal mortality ratios are being achieved at a slower pace, and Uganda is unlikely to meet the set targets at the current reduction rate (MOH, 2013, 2016). This could be due to the fact that achieving socio-economic development is not easily mutable and it requires more investment in terms of time and finances (MOH, 2016a). The slow down in

reduction in MMR could also be due to low use of maternal health care services among less recognised vulnerable groups. Maternal deaths are observed to be high among young people (Conde-Agudelo et al., 2005; Patton et al., 2009; Ganchimeg et al., 2014; WHO, 2016), and stands at 28 percent in Uganda (UBOS & ICF, 2018). Yet this group is often ignored in health programs and policies because they are perceived as healthy (Blum, 2009; WHO, 2009; Gore et al., 2011; WHO, 2018b). Pregnant unmarried youth have their own unique social, economic, psychological, health and obstetrical needs; and their experiences during the maternity period especially, abuse and stigmatisation puts them in a vulnerable position (Aday, 2002; Mertens, 2003, Atuyambe et al., 2005; Kaye, 2008; Waisel, 2013). Therefore, there is need to document unmarried youth access to services and the drivers underlying the levels of maternal health services as well as their experiences in the use of maternal health services. The question is what factors influence the use or non-use of the maternal health services among unmarried youth in Uganda, and what is their experience during the maternity period. This study aims to provide answers to this question and provide an evidence based analytical framework for maternal health service use among unmarried youth.

The current study has the potential to provide a useful basis for health providers and national, and global actors working on improving maternal health care services use and reducing maternal and child mortality. The extent to which health facilities and skilled staff are used during ANC and at delivery, and the predictors of and experiences in the use of maternal health care services by unmarried youth in Uganda is to guide policies aimed at improved maternal and child health.

1.5 Justification of the study

The future of any nation depends on the power of its youthful population. Therefore, there is need for more government investment in terms of education, employment, and health in order to reap the benefits of this young population (Ashford, 2007; UNICEF, 2011; Ahmed et al., 2014; Drummond et al., 2014; Reed et al., 2014; NPA 2014; Agona, 2015; Beyene, 2015, Mugabe, 2018; National Population Council (NPC), Uganda, 2018). The period of adolescence or young adulthood is a time full of adventure, discovery and risk taking (Mounts, 2015; Steinberg et al., 2018; WHO, 2018c; 2018a). This especially applies to the individual's own body when undergoing puberty; due to the prominent challenges posed by the individual's sexuality and sexual drive (Marín et al., 2000; Moshman, 2014; Kar et al., 2015; mentalhelp, n.d.). Thus, at

this age, individuals notice changes in their bodies and may attempt to explore these newly acquired features, for instance, menstruation increases pressure to demonstrate one's fertility (Sommer, 2009). As a result, they are vulnerable to undesirable consequences, such as infections and unintended pregnancies (Dehne & Riedner, 2001 ; Simbayi et al., 2005; Forhan et al., 2008; Macleod, 2010; Males, 2010; WHO, 2018c).

This is also the time when these adolescents reach adulthood and become legally responsible for their actions (Uganda constitution, 1995; Von Struensee, 2004). During this time, they can consent to sexual relationships, but due to lack of sex education, limited access to contraceptives due to factors, such as cost and/or because youth are ashamed to seek out contraceptives (UNICEF, 2014), they become pregnant. They are also exposed to coerced sex due to rape and defilement, that they are sometimes unable to resist (Ajuwon et al., 2001; Koenig et al., 2004; Moore et al., 2007). These youths also find problems in managing sexual pressures from boys and men (Eaton et al., 2003). Furthermore, broken marriages and a breakdown in their family system expose girls to risks of sexual exploitation and abuse where sexual acts, for the most part, take place without contraception (Ilika & Anthony, 2004; Schlecht et al., 2015; Reibel et al., 2015). This exposes them to early unwanted pregnancies which are associated with high risks and maternal deaths (Conde-Agudelo et al., 2005; Patton et al., 2009; Ganchimeg et al., 2014; Nove et al., 2014; WHO, 2016). The levels of acceptance of non-marital pregnancies is low and pregnant unmarried youth are usually stigmatised in their families, communities, and health facilities (Ilika & Anthony, 2004; Atuyambe et al., 2005; Levandowski et al., 2012). Therefore, undertaking a stigmatised subject is a challenging task that requires a full awareness of the context of the setting, as well as those factors which hamper responses within the defined socio-economic setting and population.

Maternal mortality is a global concern due to high maternal deaths worldwide, and higher maternal mortality ratio in developing countries in general, and more specifically, in sub-Saharan Africa (WHO, 2015; UNICEF, 2015). Although there are significant variations by region, the high maternal deaths are mainly due to non-use of maternal health care services, especially giving birth outside the health facilities and with no assistance from a trained provider. Sixty-eight percent of the 40 million births in developing countries in 2012 occurred with no trained provider supervision, and of

those, 32 million were in rural areas where access to maternal health care and support remain a challenge (WHO, 2014; UNICEF, 2014).

Youth pregnancy levels are high in sub-Saharan Africa (Neal et al., 2012), and in Uganda specifically (224 per 1000 live births) as fertility peaks between 20-24 years of age in Uganda (UBOS & ICF International, 2012; UBOS & ICF; 2018). The high level of pregnancies among youth (teenage pregnancy at 25%) (UBOS & ICF; 2018), and the restrictive abortion legislation in Uganda ('No person has the right to terminate the life of an unborn child except as may be authorised by law'. Uganda constitution, 1995: 27) contributes to high observed fertility levels in Uganda (TFR=6 in 2011 & 5.4 in 2016) (UBOS & ICF, 2016; 2018).

Pregnancies among this population are most times among school-aged children which cause girls to drop out of school due to the non-supportive education system in Uganda (Atuyambe et al., 2005; Atuyambe et al., 2008; Natukunda, 2018). This has an impact on the economic condition of the youth as the population that would be self-reliant depends on others for survival (Coombs & Freedman, 1970). The economy also loses out on the lifetime labour and income of a young woman who has had an early pregnancy (WHO, 2014).

Young women have more risks of maternal deaths and poor pregnancy outcomes due to adverse obstetric complications such as obstructed labour and fistula, and due to crude abortions (Singh et al., 2006; Bearinger et al., 2007; Singh et al., 2010; Althabe et al., 2015). Higher proportions of the populations in low developing countries are below 24 years of age, with most of these countries having more than half of their populations below 24 years (World atlas, 2018). This is due to sex and marriage occurring at relatively early ages, as well as low contraceptive use which is even worse among the young populations. This means that risky pregnancies and childbirth among young women which is already high will increase and thus increasing the number of maternal deaths (WHO, 2018c).

Therefore, to reduce deaths among young women, use of maternal health services needs to be improved; something which can help identify and alleviate risk factors among youth (Carroli et al., 2001; Bulatao & Ross, 2003; Ray & Salihu, 2004; Bullough et al., 2005; WHO et al., 2014, 2015; Koblinsky et al., 2016). Thus, understanding the factors and barriers to the use of maternal health services, and how they can be overcome is of paramount importance, to bring about a reduction of maternal deaths among youth.

Existing literature has established general factors for the use of maternal health services and how they influence the use or non-use of maternal health services in Uganda (Bbale, 2011; Finlayson & Downe 2013; UNICEF, 2014; Rutaremwa et al., 2015; UBOS & ICF, 2011, 2018). Low use of maternal health services has emerged as a worldwide problem as similar issues have been reported by many different nations. However, distinct issues across and within nations are also reported. Differences regarding acceptance of non-marital pregnancy, discrimination against them in the families, communities, and health facilities drive variations of those factors, in turn influencing the use of maternal health services by unmarried youth.

1.6 The research setting- Uganda

1.6.1 Country brief: Geography, Administration and Demography

Uganda is a landlocked country located in East Africa across the equator. It borders Kenya in the East, Tanzania in the South, Rwanda in the South West, Democratic Republic of Congo in the West, and South Sudan in the North. Uganda has a total area of 241,551 square kilometres, of which the land area covers 200,523 square kilometres (UBOS, 2014; 2016a; 2016b; 2017; MOH, 2015b, 2016). The country is divided into four major regions of central, east, north, and west. They are in turn subdivided into 121 districts and 181 counties. These are later sub-divided into 22 municipalities, 174 town councils and 1,382 sub counties that are sequentially divided into 7,138 parishes, and then 66,036 villages (cigf.org.uk/Uganda; MOH, 2016a; UBOS, 2018). The country experiences tropical climate with temperatures between 16⁰C to 30⁰C. The major economic activity is agriculture with crop growing dominant in eastern, central, and the western regions due to sandy clay loam soils, and heavy rainfall while animal rearing is common in the northern region because of the semi-arid climate (Kamanyire, 2000; MOH, 2016a; UBOS, 2016a).

Uganda is a republic with three arms of governance that is the executive headed by the president, the judiciary, and one parliament (Uganda Constitution, 1995). The president and members of parliament are elected directly in a general election for a five-year term (Uganda Constitution, 1995). The president nominates the cabinet ministers, who are then forwarded for parliamentary approval. Parliament has 477 members, known as Members of Parliament (MPs). It consists of 336 direct MPs for constituencies, 121 women MPs for each district, and representatives for youths, persons with disabilities, Uganda People's Defence Forces and workers (cigf.org.uk/Uganda). Uganda follows a

decentralised system of local government, with district as the chief administrative organ (Uganda Constitution, 1995).

According to the 2014 National Housing and Population Census (NHPC), Uganda had a total population of 34.8 million, a substantial increase from 24.2 million in 2002. The population is projected to grow to 41.2 million people in 2020 (UBOS, 2015). Fifty-one percent of the 34.8 million people in 2014 were females; a sex ratio of 94.6 (UBOS, 2014, 2018). Uganda has a young age structure with more than half of the population below 18 years (55%). Twenty-one percent of the population is aged 15-24 years, of which 11% are girls. Almost half of the women (45.4%) are in the reproductive ages (15-49 years) (UBOS, 2015, 2016a; 2016b; 2017). About 70 percent of the population lives in rural areas (UBOS, 2016a). Wakiso district in central Uganda was the most populous district during the 2014 NHPC (1,997, 615 people) while Kalangala district, an island located in L. Victoria was the least populated (54,293 people) (UBOS, 2016a). The total fertility rate in Uganda is 5.4 children per woman, a reduction from 6 children per woman in 2011 (UBOS & ICF, 2011; 2018). The life expectancy has increased from 48 years in 1999 (45.7 for males' vs 50.5 for females) to 50.4 years in 2002 (48.8 among males and 52 among females), and 63 years in 2014 (62 for males and 64 for females) (UBOS, 2012; 2014; 2016a).

1.7 Research objectives

The main objective of this study is to identify the predictors of the use of maternal health services among unmarried youth, aged 15-24 years in Uganda and explore the lived experiences of unmarried youth aged 15-19 years during the maternity period. This is further broken down into four specific objectives with their associated questions:

i) To examine predisposing and enabling factors for the timing and the number of antenatal care visits among unmarried youth aged 15-24 years in Uganda.

Research question: What factors influence the timing and the number of ANC visits among unmarried youth?

ii) To study the variation in enabling and predisposing predictors of the use of health facilities at childbirth among unmarried youth aged 15-24 years in Uganda.

Research question: What factors are associated with the use of health facilities at childbirth among unmarried youth between 1995 and 2011?

iii) To explore the experiences and support available to unmarried youth, at home and in the community during the maternity period in Uganda.

Research question: What is the experience of unmarried youth at home and in communities during the maternity period in Uganda?

iv) To understand the health provider perspectives on the use of maternity care by unmarried young women aged 15-19 years in Uganda.

Research question: What are the health providers' perceptions and the experiences of unmarried youth at the health facilities during the maternity period?

1.8 Research hypotheses

- i) Timing of antenatal care does not vary by education level among unmarried youth in Uganda
- ii) ANC timing does not vary by wealth index among unmarried youth in Uganda
- iii) Antenatal care frequency does not vary by parity among unmarried youth
- iv) Religion does not influence the number of ANC visits among unmarried youth in Uganda
- v) Place of residence does not influence the use of health facilities at child birth among unmarried youth
- vi) Occupation does not predict the use of health facilities at child birth among unmarried youth in Uganda

1.9 Operational definition of terms

i) Youth

Youth is a period of transition from childhood dependence to adulthood interdependence, and awareness of our interdependence as members of a community (UNESCO, 2017). Age is the easiest way to define this age group as the age at which he/she leaves compulsory education to the age at which he/she obtains the first employment. The United Nations, for statistical purposes, defines 'youth', as those persons between the ages of 15 and 24 years, without prejudice to other definitions by Member States, and defines adolescents as persons between the ages of 10 and 19 years (UNESCO, 2017; UNICEF, 2018). In the current study, 'youth' refers to females aged 15-24 years for the quantitative data component, and 15-19 years for the explanatory qualitative strand. For the quantitative analysis, I considered youth between ages 15-24

years to obtain a bigger sample for unmarried youth to improve the statistical power. In addition, from the quantitative data analysis, no differences in the use of maternal health services was observed among youth aged 15-19 years and 20-24 years. The experiences of youth aged 15-19 years obtained from the qualitative data might thus be representative for all youth irrespective of age.

ii) Unmarried youth

The term unmarried youth used in this study refers to females aged 15-24 years or 15-19 years who reported themselves as never married.

iii) Maternal health care services

Three maternal health care indicators were considered for this study and include use of antenatal care in the first trimester, number of ANC visits and the use of health facilities at childbirth. In this study, the term maternal health services will mean the combination of both ANC and childbirth services use unless specified. The definition of each of the services is given in chapter 4 for ANC use & chapter 5 for health facilities use at childbirth.

1.10 Organisation of the thesis

Chapter 1 offers a brief discussion of the research problem and the rationale for conducting the current research. An overview of the study and the context of the current research plus research objectives, questions and hypotheses are presented in this chapter.

Chapter 2 presents the procedure and the results of the systematic literature review of factors that influence the use of maternal health services among youth worldwide. The chapter also presents the conceptual framework based on the behavioural model of access to health care. This chapter concludes by highlighting the gaps in the literature, and areas for further research that the current study contributes to.

Chapter 3 discusses the philosophical assumptions applied, research approaches, detailed research design, and the methodology adopted in this study. The methods and tools used to achieve the study objectives are also discussed. The fieldwork process, data analysis, and ethical considerations are presented in this chapter. Positionality of the researcher and a reflexive account are also offered in this chapter.

Chapter 4 presents the detailed results on levels, trends, and the predictors of the use of antenatal care among unmarried (compared to married) youth, aged 15-24 years in

Uganda, between 1995 and 2011. Chapter 5 also presents the levels, trends, and the factors associated with the use of health facilities at childbirth among youth by marital status. Both chapters present descriptive statistics, inferential statistics showing differences in maternal health care services by each independent variable. Results of the multilevel models are then presented, to show associations between predictor variables and each maternal health care factor by marital status. The discussion of findings in reference to the literature is also presented for each of the chapters.

Chapter 6 presents the Interpretative Phenomenological Analysis (IPA) of the experiences of unmarried youth at home and in the community. The support available to these youth is also revealed and how family, partner, and community reactions and support influences the use of maternity care. In addition, chapter 7 shows the IPA of the perspectives of health providers on the experience of unmarried youth and how this influenced the use of maternity care among this group. These are presented in themes with emerging sub-themes. The chapter also presents the integration of both strands of the data to provide a fuller picture of the current study. The findings in each chapter are discussed in light of the literature.

Chapter 8 presents a comprehensive discussion of the main findings from both strands, in the light of the literature and the chosen framework. The limitations of both the quantitative and qualitative components of the study are discussed. Chapter 9 provides a summary of the study and offers thoughts about the implications of the research to policy and future research. The chapter finally offers brief concluding remarks to draw the thesis to a close.

2 CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a systematic review focused on previous research findings related to factors associated with the use of maternal health services among youth during the prenatal, delivery, and post-natal periods. Reference is made to studies among other age groups in comparison or when appropriate. The principal aim is to identify the factors associated with the use of skilled maternal health care among youth aged 10-24 years. Literature from which the conceptual framework of this study originated is presented and finally, identified research gaps in the literature in reference to reviewed themes are discussed.

The review question for this, ‘What are the factors that influenced the use of maternal health services among youth?’ guided this literature search.

2.2 Search strategy

Seven electronic data bases, namely MEDLINE, CINHALL complete, PsycINFO, Academic Search Premier, International Bibliography of Social Sciences (IBSS), Cochrane Library and Web of Science were searched to retrieve relevant articles. These databases have research that are related to health, are peer reviewed and the researcher could access articles in full. The researcher also reviewed the reference lists of the selected articles, to identify any key studies that were missed by the initial electronic search.

The following search terms were used to search the databases: maternal health, maternal healthcare, maternal health care, maternity care, maternal health services, maternal health facilities, maternal health amenities, maternity services, antenatal care, prenatal care, neonatal health care, prenatal services, pregnancy care, childbirth care, labour care, delivery care, birth care, birthing care, intrapartum care, partus care, parturition care, postnatal care, postnatal services, postpartum care, obstetric care, reproductive health services, adolescents, teenagers, teen, young adults, young women, youth.

Depending on its relevancy on different databases, the following strategies were employed

-The key words were combined using the Boolean operators of AND OR.

-Truncation and wild cards symbols (* , ?)

• Years considered were from 1996 to April 2016

- Time schedule: search was done each day from February 2016 to Mid-April 2016. Email alerts were set up on the electronic database websites for updates on new publications as the research work progressed. Evaluation and synthesis of literature was carried out from mid-April 2016 till mid-June 2016.

2.3 Selection criteria (Inclusion and exclusion criteria)

The review comprises of both quantitative and qualitative studies. This is due to the fact that existing research on factors for the use or non-use of maternal health services come from both designs. This review included relevant studies that have addressed this issue in the last twenty-six years.

i) Inclusion criteria

This review includes studies published in English in peer-reviewed journals from 1990 to April 2016. This included studies that described the levels of the use of maternal health care services, factors for use, services received, and attitudes towards the use of maternal health services among the population aged 10-24 years. It includes studies that compared youth with older women. Studies that were conducted in all regions (developed and developing regions) regardless of the research method were included. Studies that were identified after June 2016 are included in the discussion of results (Atuyambe et al., 2009 & Gross et al., 2012).

ii)) Exclusion criteria

Studies published before 1990, studies that were published in any language other than English or were concerned with factors for the use of maternal health services among women aged 25 years and above were excluded. Extended abstracts, conference proceedings, editorials, and unpublished studies were also excluded.

2.4 Search outcome

Six hundred and seventy-five (675) articles were retrieved from the initial search, of which 538 were excluded by title. Therefore, the remaining one hundred and thirty-seven full articles were related to youth health seeking behaviour according to the titles. Abstracts and full versions of these selected articles were then evaluated using the inclusion and exclusion criteria and it was found that ninety-eight of these were not related to youth's maternal health seeking behaviour, and others were duplicates; 39 articles met the inclusion criteria. Reference lists or biographies of all the identified studies were checked and two more articles were retrieved.

A total of 41 articles were reviewed for methodological quality using the Critical Appraisal Skills Programme tool (CASP, 2014). The selection criteria is attached in **appendix I**. Six studies did not meet the quality requirement; one was because of insufficient data to allow statistical power (Spence & Adams, 1997), the other did not disaggregate the analysis by age for instance comparing the youth to older women but was among all women of reproductive age (Kamal et al., 2015). Two studies had no clear objectives (Koshar et al., 1998 & Brabin et al., 1998), while one presented the levels for the use of maternal health services only, but no predictors of the use were shown (Ehlers et al., 2000). Finally, one considered the postnatal care of the child not of the adolescent mother (Rahman et al., 2011b). The characteristics of the remaining thirty-five studies included in this analysis are presented in a data extraction form, to capture relevant aspects of the research question. These include author(s) and year of publication (reference), study objectives, area where the study was conducted, study design, data collection method, sample size, outcome measured (type of maternity care service studied) and summary results (**APPENDIX III**).

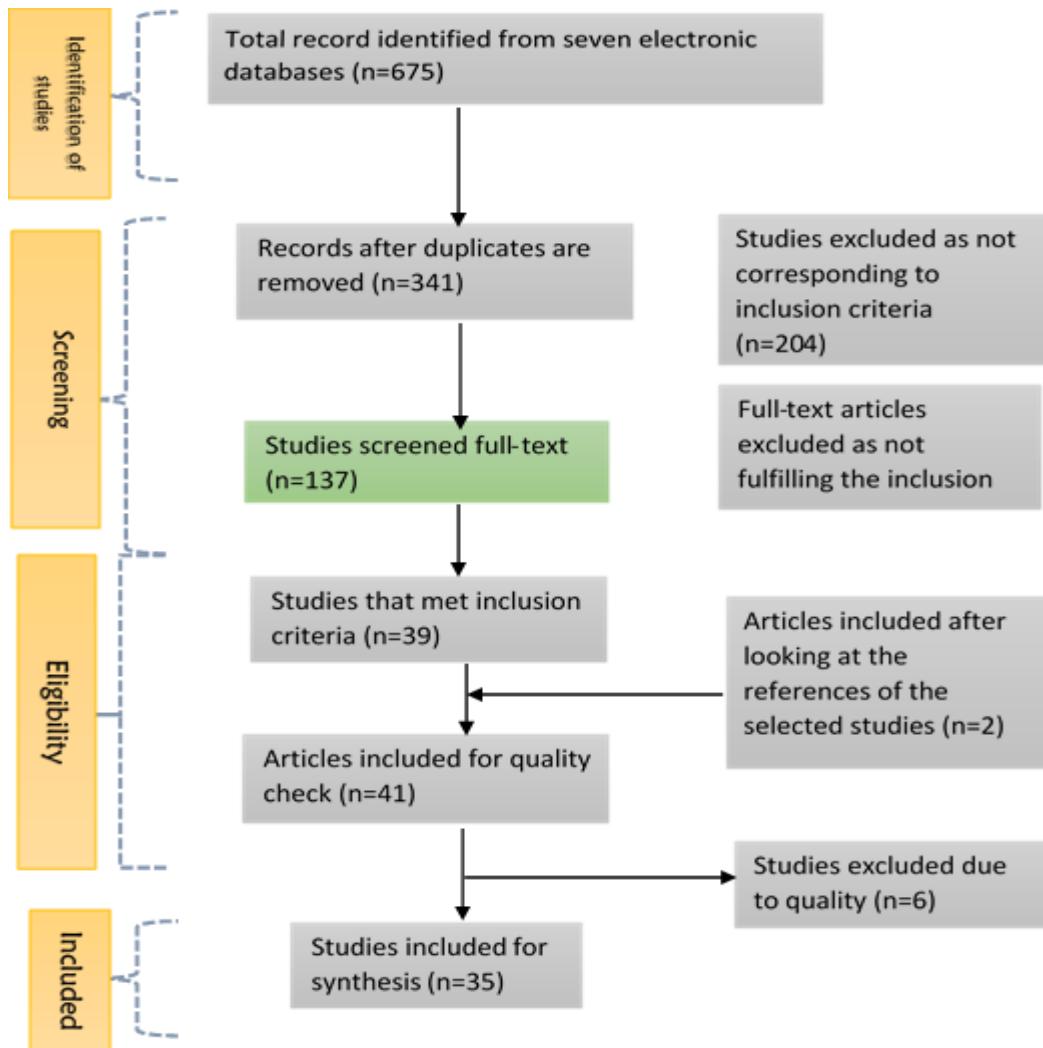


Figure 2. 1: PRISMA flow chart showing the systematic review studies selection

2.5 Description of studies included in this literature review

This review included thirty-five studies which met the inclusion criteria. Of these, twenty-six were quantitative, eight were qualitative studies and one was a systematic review. Twenty-six were conducted in developing countries compared to nine that were carried in developed countries. Sixteen were primary studies, eighteen used secondary data; more specifically, eleven of the eighteen analysed the Demographic and Health survey data, five used the India National Family Health Survey and two used hospital records. The studies included mainly two types of participants: adolescents or youth, and health providers, especially midwives.

Six of the identified studies were conducted in the USA, four were conducted in India and three in Bangladesh. Two studies were conducted in each of the following countries: the UK, Zimbabwe, Kenya and Uganda. In addition, one study was

conducted in each of the listed countries: Australia, Peru, Nepal, Myanmar, South Africa, Swaziland, Nigeria, Niger, Mali, Malawi, and Tanzania. One study analysed the data of 21 sub-Saharan countries in Africa (Magadi et al., 2007), and one was a secondary analysis of data from five sub-Saharan, five Latin American and five south Asian countries (Reynolds et al., 2006). Finally, one was a systematic review of studies in Bangladesh (Shahabuddin et al., 2015).

Studies addressed factors associated with the use of different maternal health care behaviours. These included factors for the number of antenatal care visits, the timing of first antenatal visit, place of delivery, assistance/supervision during delivery or birth, and postnatal care check-up by a skilled provider within the postpartum period (42 days after termination of a pregnancy). Qualitative explanations of the observed patterns in the use of maternal health services were also presented. The determinants of maternal health care identified in the literature were categorised into six themes: socio-economic determinants; spatial factors; demographic characteristics; socio-cultural factors; health facility/service related factors, and women empowerment.

2.6 Socio-economic determinants of maternity care among youth

This section includes factors concerning woman and husband education level, wealth index and woman and husband work status, and how these influence maternity care among youth.

2.6.1 Woman's education

Different studies have found woman's education level to be an important predictor of the use of maternity care in many settings, with youth with higher education levels more likely to use maternity care services than those with lower levels of education. Adolescents who completed high school were found to be more likely to use and to start ANC in the first trimester in the United States (Hueston et al., 2008). Youth with at least primary education were more likely to start ANC early (Ochako et al., 2011), have frequent ANC visits (Singh et al., 2012b; Singh et al., 2013; Kumar et al., 2013; Singh et al., 2014; Haque et al., 2012; Sein, 2012; Rai et al., 2012; Ochako et al., 2011), to use skilled providers for ANC (Haque et al., 2012). It was also found that educated youth were more likely to use health providers at childbirth (Ochako et al., 2011) and to have PNC than the non-educated youth (Rahman et al., 2011a; Singh et al., 2012a; Rai et al., 2014; Singh et al., 2014; Rahman et al., 2011a). However, no difference in ANC numbers

in Mali (Singh et al., 2013), and PNC among youth in Nigeria (Rai et al., 2012) were observed by education level.

However, adolescents who were still in school were also found to attend ANC less than four times in Gauteng Province, South Africa (Ehlers et al., 2000). This could be because they are trying to continue with education and the ANC clinics were open at inconvenient times when school activities are going on (Teagle & Brindis, 1998; Ehlers et al., 2000). These results influenced recommendations for introducing school-based ANC clinics, and having clinics open at certain times, including weekends, to cater for the unique timing needs of school going adolescents in a study by Feldman, (2012).

2.6.2 Husband's education

Similar to women's level of education, the husband's education level influenced the use of maternal health services among adolescents, with those with educated husbands more likely to use maternal health services than those with less educated husbands. Adolescents with husbands with some education were more likely to use ANC (Singh et al., 2012a; Singh et al., 2012b; Kumar et al., 2013; Rai et al., 2012), and more likely to give birth in medically equipped facilities (Kamal, 2009; Singh et al., 2012a; Rai et al., 2012). Their chances of being supervised at childbirth were high (Kamal, 2009; Kumar et al., 2013; Singh et al., 2014), and were also more likely to have PNC than those with uneducated husbands (Rai et al., 2012). A study of adolescents in urban India showed that husband's low education level was not significantly related to their wives use of full ANC. However, the likelihood increased as the husband's education level increased (Singh et al., 2014). Adolescents with husbands with high school and above levels of education were not significantly different from those with no education for having a safe delivery in India (Singh et al., 2012a).

2.6.3 Youth and husbands work status

This review found mixed relationships, with working youth being more likely to use the services than the non-working youth, and sometimes non-working youth utilised the services to a greater extent. Wiemann et al., (1997) found that unemployed adolescents in USA were 1.9 times (95%CI=1.3-5.7) more likely to start ANC later than employed adolescents. While in Mali, working adolescents were more likely to use PNC services than non-working ones. In India, youth who worked at home were 2 times (OR=2.06, 95%CI=1.177-3.625) more likely to use PNC services than those who were not working (Singh et al., 2013). However, adolescents who worked away from home were not

statistically different from the non-working adolescents in the use of PNC services (Singh et al., 2013).

Adolescents who were working away from home in Niger were less likely to use safe delivery (OR=0.638, 95%CI=0.41-0.993) compared to those who were not working (Rai et al., 2014). In Bangladesh, women's work status was not related to skilled birth attendance (Kamal, 2009), and the use of PNC services among young women (Rahman et al., 2011a). However, adolescents whose husbands were engaged in paid work other than agriculture, and those employed in professional or managerial jobs were more likely to use skilled antenatal care and seek PNC from skilled providers (Kamal, 2009; Rahman et al., 2011a). The limitations with Wiemann et al., (1997), Kamal, (2009), Rahman et al., (2011a) and Singh et al., (2013) studies are that work status was categorised as working, not working and working at home or employed and not employed or employed in agriculture and non-agriculture. Of greater importance would be a variable/indicator on occupation type as Rahman et al., (2011a) considered because this enables the differentiation of adolescents by their work type which would be much more related to their economic and empowerment status.

2.6.4 Household Wealth

Due to difficulties in measuring of income, studies like Demographic and Health Surveys have developed a wealth quintile/ index which is based on household assets. It was found to be an important determinant of the use of maternal health services among youth. This is because money is needed during the maternity period to meet direct and indirect costs like transport and hospital requirements (Leone et.al, 2013). Studies found that higher wealth status was related with higher chances of the use of maternity services. Studies found that adolescents from at least poorer wealth quintiles were more likely to seek ANC early (Kumar et al., 2013; Singh et al., 2014) and more likely to have at least four ANC visits compared to those in poorest households (Singh et al., 2013; Rai et al., 2012). Furthermore, adolescents who did not attend ANC or those who attended irregularly were asked the reason for none or late ANC attendance, and substantial percentages reported high service costs (Arthur et al., 2007; Kamal, 2009; Sein, 2012; Chaibva et al, 2009 and that free ANC would motivate youth for future ANC use in Zimbabwe (Chaibva et al., 2009). However, a study in Kenya found no difference in the use of ANC among youth by household wealth (Ochako et al., 2011).

Studies in this review found that adolescents from rich/ richest households had higher probabilities of the use of safe delivery than those from the poor/poorest households (Kamal, 2009; Ochako et al., 2011; Rahman et al., 2011a; Singh et al., 2012a; Singh et al., 2012b; Kumar et al., 2013; Singh et al., 2013; Singh et al., 2014). However, there was no significant difference in health facility use at childbirth by wealth index among adolescents in Nigeria (Rai et al., 2012). This could be due to a difference in disposable income and wealth status, since wealth index is measured using household assets which might not correlate to household disposable income during the maternity period. Also, the extent to which youth have access to household finances cannot be established from secondary studies.

2.7 Spatial factors influencing the use of maternity care services

These include place of residence, region, and distance to health facilities, and how they influence access to health centres, subsequently affecting the use of maternal health services.

2.7.1 Place of residence

Urban residence has been found to influence the use of maternal health care services. Youth in urban areas have been observed to use the services more than youth in rural areas (Kamal, 2009; Hueston et al., 2008; Ryan et al., 2009; Haque et al., 2012; Kumar et al., 2013; Shahabudin et al., 2015). Youth in urban areas were more likely to start ANC early (Magadi et al., 2007; Hueston et al., 2008; Ryan et al., 2009; Kumar et al., 2013), to use ANC frequently (Ryan et al., 2009; Rai et al., 2012; Haque et al., 2012; Kumar et al., 2013; Shahabuddin et al., 2015) and to used skilled providers for ANC (Kamal, 2009; Kumar et al., 2013). Kamal, (2009), Haque et al., (2012) and Sein, (2012) found that young women. Youth in urban areas were also more likely to give birth at a health institution and/or to use skilled birth attendants (Magadi et al., 2007; Ochako et al., 2011; Rai et al., 2012; Sein, 2012; Kumar et al., 2013) than those in rural areas. For instance, Sein, (2012) found that adolescents residing in urban areas were 17.5 times and 7 times more likely to use institutions at childbirth and PNC services than those in rural areas in Bangladesh respectively. Urban adolescents were also more likely to use PNC services in Mali (Singh et al., 2013). Studies by Singh et al., 2013 and Ochako et al., (2011) in Mali and Kenya respectively found that urban youth were not statistically different from rural youth in attending at least four ANC visits, and having ANC in the first trimester respectively.

Access to services in rural areas may be hard due to long distances, that must be travelled to health centres, poor transport especially during the rainy season in places with poor roads, high transport costs, and the inability to meet them. Also, rural people have traditional practices that are not supported in modern health care (Mekonnen & Mekonnen, 2003; Kwagala, 2013). However, there was no difference in distances to health facilities between rural and urban areas in Myanmar, yet the use of the services among rural adolescents was lower (Sein, 2012). Therefore, the literature reveals that universal use of the services will not be achieved by only providing the services, but other factors, like knowledge of the benefits of the use of the services, direct and indirect costs, staff attitudes and social support, all of which need to be improved.

2.7.2 Region

Studies by Kamal, (2009), Rai et al., (2012), Singh et al., (2012a), Singh et al., (2012b) and Singh et al., (2014) indicate that the use of maternal health services varied by region of residence, with some regions having higher chances of use, and others having reduced likelihood. Compared to adolescents in Nyanza, those from the capital, Nairobi, were 2.7 times (OR=2.7, 95%CI=1.4-5.3) more likely to use skilled birth attendants in Kenya (Birungi et al., 2011). Regional differences could be due to residence differences as some are more remote and others are more developed, yet urban-rural differences in the use of maternal health care are pronounced in different studies. It could also be due to differences in health service provision with some areas having limited health facilities, health providers and health commodities (Anyangwe & Mtonga, 2007; MOH, 2013b, 2014, 2016b, 2017; GHO, 2016). Cultural differences might contribute to regional differences in the use of the services and therefore, there is need for a study that comprehensively studies one region to find out the cultural influences on the use of maternal health services for youth in that region.

2.7.3 Distance to the health facilities

Long distances to health centres hinder access to health facilities, especially among the rural poor. Twenty-one percent of adolescents, and 42 percent of the providers acknowledged that ANC clinics that are relatively far away constitute a barrier to visiting clinics by the adolescents, as revealed in a Teagle & Brindis (1998) study in Arkansas State. Hokororo et al., (2015) noted that adolescents had to travel long distances, reach the health centres late, and thus did not receive the services. This hindered them from attending ANC unless pregnancies had problems (Hokororo et al.,

2015). Distance from health facility was found to have no significant impact on the use of trained medical provider and timing of PNC services among young women in Bangladesh (Rahman et al., 2011a). However, youth reported that they use traditional birth attendants (TBAs) because they are close to them (Chaibva et al., 2009). Therefore, literature points to the need to improve health facilities' distribution so that the youth can easily access the services.

2.8 Demographic determinants of maternal health care services use among youth

2.8.1 Age of the youth

Some studies have found that older adolescents were more likely to use maternal health services than the very young ones. Older adolescents and youth were more likely (OR= to attend ANC or to attend more times (Reynolds et al., 2006; Hueston et al., 2008; Ryan et al., 2009; Haque et al., 2012; Rai et al., 2012; Rai et al., 2013; Anderson & Rahn, 2016), to have skilled birth assistance (Haque et al., 2012) and to have PNC by skilled providers and within two days than the young ones (Rahman et al., 2011a). On the contrary, adolescents (15-18 years) were more likely to have skilled birth attendants at delivery in Bolivia than older women (19-24 years) (Reynolds et al., 2006). In other studies, no difference in the use of skilled assistance at birth (Singh et al., 2012a; Singh et al., 2012b; Birungi et al., 2011) and PNC services use by age was observed (Singh et al., 2013). Adolescents delay seeking ANC because they may take longer to recognise the pregnancy as some continue to experience vaginal bleeding (Stevensimon et al., 1991). However, greater use of maternity care by older adolescents and young women over that of the young ones could be because of the degree of acceptance of the pregnancy by themselves, family and society evidenced by differences in family support during pregnancy by age (Cosey & Bechtel, 2001). Adolescents themselves felt providers treated them negatively because of their young age (Arthur et al., 2007; Duggan & Adejumo, 2012; Hokororo et al., 2015) and young adolescents preferred home deliveries due to social and family support during home deliveries (Sein, 2012).

2.8.2 Parity/ birth order

Previous birth has been found to be negatively related with the use of maternal health services with the current pregnancy. Youth of higher parity attended ANC fewer times than those who were pregnant for the first time (Birungi et al., 2011; Ochako et al., 2011; Magadi et al., 2007; Hueston et al., 2008; Shahabuddin et al., 2015). Some studies

combined parity with birth interval and it was also found that higher parity and longer birth interval were related with less use of ANC services (Singh et al., 2012b; Singh et al., 2012a; Singh et al., 2014; Rai et al., 2014; Haque et al., 2012; Kamal 2009) and less likely to have safe delivery (Kamal, 2009; Sein, 2012;; Singh et al., 2014; ; Rai et al., 2012; ; Singh et al., 2013; Rai et al., 2014, ; Birungi et al., 2011). Adolescents with higher birth order were also less likely to use PNC services than adolescents with birth order one (Kamal, 2009; Singh et al., 2012b; Rahman et al., 2011a). However, there was no statistical significance in ANC use by parity among adolescents in Mali (Singh et al., 2013). The non-use or poor use of maternal health services among women with higher parity might lead to more adverse effects, and higher maternal deaths among adolescents with higher parity pregnancies and births.

2.8.3 Marital status

Literature has found that unmarried youth were less likely to use maternal health services compared to the married (Magadi et al., 2007; Ochako et al., 2011). A study in Kenya found that currently married (OR=1.936) and formerly married (OR=1.515) young women were more likely to use ANC compared to the unmarried young women (Ochako et al., 2011). Among adolescents in 21 SSA countries, marital births were more likely to use maternal health services than pre-marital births (Magadi et al., 2007). Unmarried adolescents were found to face various challenges with the use of ANC services including discrimination, shame (Hokororo et al., 2015) and fear to see unknown providers. (Reibel et al., 2015; Hokororo et al., 2015). Contrary to these finding, using birth certificate data in the USA, Hueston et al., (2008) found that married teens were more likely to start ANC late across all the age groups. Another related factor is age at first marriage where those who married before age 15 were found not to have PNC compared to those who married after 15 years in India (Rahman et al., 2011a).

2.8.4 Child wantedness

Another important factor in maternal health services' use is child wantedness and acceptance by adolescents, society, families, partners, and peers, that is, the desire to have and maintain the child as part of the family unit. Adolescents who reported the pregnancy as unwanted were found to seek ANC less efficiently compared to those whose pregnancy was wanted across different studies (Teagle & Brindis, 1998; Magadi et al., 2000; Chaibva et al., 2009). Unwanted or mistimed pregnancies, especially

among youth, are linked with fear of disclosing the pregnancy to parents, guardians or friends, subsequently leading to delay in seeking ANC, even to the point where the pregnancy is hidden until labour starts (Teagle & Brindis, 1998; Chaibva et al., 2009). Unwanted pregnancy is associated with high levels of violence where some become homeless or discontinue school (Arthur et al., 2007; Atuyambe et al., 2005) which negatively affects access to health care. In Malawi, adolescents whose pregnancy was reported to be unwanted were 29 percent less likely to attain four ANC visits compared to those whose pregnancy was wanted (OR= 0.71, 95%CI=0.59-085) (Rai et al., 2013). However, other studies found that child desire status did not influence either use of safe delivery (Rai et al., 2012), or the use and timing of PNC (Rahman et al., 2011a; Singh et al., 2013). Some adolescents with unwanted pregnancies have tried to abort or pregnancies have ended in abortions (Cossa et al., 1994; Hatherall et al., 2016), and thus, adolescents should be helped in forming a bond with their pregnancies as this will reduce potential risks to the pregnancy and build a positive relationship between the infant and the mother before childbirth (Feldman, 2012).

2.9 Socio-cultural factors influencing the use of maternal health services among youth

Religion, social group/ethnicity, and family and social support are some of the socio-cultural factors identified in this review to influence the use and the timing of maternity care as discussed below.

2.9.1 Religion

Religion has been found to influence the level of access and the use of health services, including maternal health care. Studies in Bangladesh show that Muslims were less likely to give birth at health facilities and to use trained birth attendants (Kamal, 2009; Haque et al., 2012). In India, Muslims were less likely to use ANC, less likely to give birth at health facilities and less likely to use assistance from trained birth attendants (Singh et al., 2012b; Singh et al., 2014). However, Muslims were more likely to use trained professionals for PNC check-ups than Hindus in India (Singh et al., 2014). Among adolescents in Nigeria, Muslims were twice as likely (OR=2.008, 95%CI=1.274-3.167) to attend ANC at least four times than Christian adolescents (Rai et al., 2012). In Malawi, Muslims and Church of Central Africa-Presbyterian had higher probabilities of having postnatal check-ups than married Catholic adolescents (Rai et al., 2013). Singh et al., (2014) argued that these trends could be because Islam does not

allow women to expose their bodies to others, especially when providers are of the opposite sex as supported by Rizk et al., 2005 and Gage, 2007. However, because of poor medical care during the pregnancy and at birth, they develop infections which could necessitate them to see medical professionals during the postpartum period (Singh et al., 2014).

2.9.2 Social group/Ethnicity

Ethnicity has been found to influence the use of maternity care due to cultural beliefs and trust in traditional methods of treatment, socio-economic status, and sometimes self-esteem. The low self-esteem among the ethnic minority blacks and adolescents of other races was associated with late start of ANC compared to whites in US (Spence & Adams, 1997). This points to the level of acceptability of teenage pregnancy among whites. In India, adolescents of Scheduled Castes (SCs) and Scheduled Tribes were less likely to use maternal health care than those of other social groupings (Singh et al., 2012a; Singh et al., 2012b; Kumar et al., 2013). Maternity care also varied by ethnicity in Nigeria, Niger, Mali and Malawi (Rai et al., 2012; Rai et al., 2013; Singh et al., 2013; Rai et al., 2014). Compared to the Kikuyu, HIV positive adolescents from all other ethnic groups had reduced chances of skilled birth attendance in Kenya (Birungi et al., 2011).

2.9.3 Family and social support

Youth need support that includes community, peer and family support during the maternity period. This helps them to use maternal health services and was acknowledged by providers as the main motivator in the Teagle & Brindis, 1998 study. Family support was associated with adequate ANC among adolescents than for those who did not have enough family support (Cosey & Bechtel, 2001), and was reported to improve future use of the services by adolescents in Zimbabwe (Chaibva et al., 2009). Adolescents prefer family support to non-family support (Cosey & Bechtel, 2001), and should be allowed to choose who should accompany them for childbirth (Duggan & Adejumo, 2012). Social support from family and parents was associated with adolescents' home births in Myanmar (Sein, 2012). Husbands' support was also found to increase the chances of HIV positive adolescents to use ANC in Kenya (OR=3.7, 95%CI=1.4-10.1) than HIV positive adolescents who did not have husbands' support during pregnancy (Birungi et al., 2011). Adolescents in South Africa also agreed that partners would be of great help to them during child birth (Duggan & Adejumo, 2012).

Therefore, midwives should encourage adolescents to come with a person of their choice for social support as they come for maternity care (Mngadi et al., 2002). Upadhyay et al., (2014) found that husbands were most influential in making decisions to use ANC and delivery care among married teens in Nepal (age <20 years).

2.10 Health facility factors and maternal health services use

This considered factors related to health system and health provider factors and how they relate with the use of services. These include quality of care, waiting times at the health facility, attitudes of providers, privacy of the youth, and previous use of any maternity services as discussed below:

2.10.1 Quality of services provided

The quality of services provided is an important determinant of both present use and/or the future use of maternal health services. Under consideration are the services themselves, as well as places where they receive the services, especially consultation rooms and waiting areas. Uncomfortable waiting areas with few seating facilities coupled with long waiting times influence how services are used (Duggan & Adejumo, 2012). Quality in terms of measurements and tests carried out, for example, weights, height, pollar, oedema, and urine help in identifying health problems, such as HIV, eclampsia and ketosis which should be managed and guide the necessary decisions on the type of birth. Sometimes these tests were not done for adolescent mothers, even when equipment was available (Mngadi et al., 2002). Adolescents require information on expectations and experience as the pregnancy progresses, and during labour (Arthur et al., 2007), as well as the care and breastfeeding/feeding of the infant (Hunter, 2008). Sometimes less information is given, and the providers assume pregnant adolescents already know (Hokororo et al., 2015). Mngadi et al., (2002) in Swaziland found that adolescents were given information, such as dates for postnatal check-ups and child immunisation verbally and follow-up visits found that adolescents had forgotten PNC and child immunisation dates. Therefore, these should be written for reference not to compromise the quality of the proceeding health care of these young mothers and their infants.

2.10.2 Waiting times at the health facilities

Waiting time is an important determinant of maternity care use, especially for mothers with other children left at home, and have limited partner or family support. In the USA, 33 percent of 250 (31% first time & 33% follow-up) adolescents reported too long

waiting times to appointment as the major barrier to attending ANC. This was also reported by 43 percent of 16 providers interviewed (Teagle & Brindis, 1998). Adolescents also identified longer waiting times at health centres as barriers to the use of ANC services as identified in a study of young women in Australia who prefer seeking care in far off hospitals than local maternity centres, where time taken is much longer in waiting for the service (Reibel et al., 2015). In Tanzania, adolescents noted that they spend long hours at the clinic, and that this was competing with other household chores, including farming (Hokororo et al., 2015). Adolescents themselves noted that this was due to few nurses who had to attend to several clients, with opening times not being adhered to (Duggan & Adejumo, 2012; Hokororo et al., 2015). More time is wasted at health facilities because of lack of or confusing information on the services they wish to access, for instance, queuing for wrong services because they are unfamiliar with both the departments they have to visit, and the location of the services (Duggan & Adejumo, 2012). The youth in Tanzania noted that they had no other health centres to go to in the vicinity and had no other option but to wait for long periods of time at the available health facilities “...we come because we have to come and there is nowhere else to go” (Hokororo et al., 2015: p 1294).

2.10.3 Privacy

Privacy at health facilities especially for youth who have not yet disclosed their pregnancies to parents'/family members is very crucial. Lack of privacy, including visual, audio and group counselling with older women hindered use maternity services (Hokororo et al., 2015; Arthur et al., 2007; Duggan & Adejumo, 2012). There are other health providers' actions that compromise teens privacy, for instance being asked to repeat ages (Duggan & Adejumo, 2012), or only HIV positive clients being called to a room to get test results (Hokororo et al., 2015). Moreover, this is done to a population group where very high proportions (91% and 94%) of adolescents who had never used ANC noted that fear of HIV tests and HIV positive results respectively would hinder them from future use of ANC (Chaibva et al., 2009) and fear of a positive HIV result was a barrier to use of biomedical care (Atuyambe et al., 2008). This is a very serious finding that needs to be addressed given that HIV positive tests during pregnancy will help eliminate mother to child transmission of HIV. In relation, medical staff are also not trusted by adolescents because they share their results with family or friends without the adolescents' consent (Reibel et al., 2015; Hokororo et al., 2015). Thus, adolescents

visit health facilities when or where there are non-aboriginal staff or go to big hospitals (Reibel et al., 2015), or they never came for ANC services at all (Hokororo et al., 2015). Therefore, waiting time, privacy and trust at a health facility are crucial policy factors that adolescents' value as they can travel to far off facilities where these are respected.

2.10.4 Attitudes of hospital staff

Health workers' attitudes influenced youth use of ANC services; good relationships increased the likelihood of youth use of maternal health services. Poor attitudes were a barrier to use of ANC as noted by adolescents and health professionals (Teagle & Brindis, 1998; Chaibva et al., 2009). Atuyambe et al., (2005) found that providers in Uganda carry out caesarean section as a "punishment", even when adolescents felt they could have given birth normally (p307). This is likely to hinder their future use of the service as some adolescents (30%) and providers (86%) in the USA had earlier agreed that fear of hospital procedures was a barrier to prenatal care initiation (Teagle & Brindis, 1998). Fear of lithotomy position of birth was also noted as a barrier to the use of health facilities at birth among ever-married youth in Myanmar (Sein, 2012). Poor health providers' attitudes could be the reason why adolescents use traditional birth attendants (TBAs) who are often near, well known, friendlier, and supportive (Chaibva et al., 2009). The use of TBAs affects use of specialised care in health facilities, yet TBAs are neither hygienic nor trained (Chaibva et al., 2009). Studies show that adolescents defined good provider attitudes as someone who is not harsh or who will not judge them irrespective of their age at pregnancy or behaviour foreexample drug abuse and relationships with partners; being sympathized with, respected like other clients, not shouting at and abusing them (Atuyambe et al., 2005; Hokororo et al., 2015; Reibel et al., 2015).

2.10.5 Previous use of the maternity services by youth

Persons who have used antenatal care have been observed to be more likely to use health centres for child birth and post natal care. During ANC visits, midwives are expected to give women information on the benefit of frequent ANC and use of other maternity care services. Sufficient or any ANC use was found to increase chances of use of institutions at childbirth, and to use skilled birth attendants (Birungi et al., 2011; Sein, 2012; Rai et al., 2012; Singh et al., 2014; Ochako et al., 2011) and PNC use (Birungi et al., 2011; Rahman et al., 2011a; Sein, 2012; Rai et al., 2012; Rai et al., 2013; Singh et al., 2014). A study by Singh et al., (2013) in Mali found no statistical

difference in the use of PNC by ANC use. Safe delivery (delivery from a health facility and/or under the supervision of a skilled birth attendant) was also found to predict both general use and timely use of PNC due to proximity (Singh et al., 2014; Rahman et al., 2011a; Singh et al., 2013).

2.11 Women empowerment variables influencing the use of maternal health services

Empowerment has been found to influence the use of maternal health services. This review did find some women empowerment factors that impact on youth use of maternal health care services. These include women's autonomy, domestic violence, another index on women's personal barrier, and source of health information.

2.11.1 Women's autonomy

Women's autonomy relating to being involved in paid jobs, her ability to make decisions regarding health care, and go to places without asking permission has shown to affect reproductive health service use positively. Also, in this review, a woman's autonomy was related with better use of ANC (Haque et al., 2012), safe delivery (Rai et al., 2014) and PNC use (Rahman et al., 2011a). Adolescents who had unrestricted permission to go to the health facility and those who had no restrictions leaving home were found to have a higher likelihood of use of PNC services such as early initiation of PNC check-ups than those who were restricted (Rahman et al., 2011a). Haque et al., (2012) developed indices of autonomy but these were not related to the use of safe delivery. The main weakness with Haque's autonomy indices might be multicollinearity. A study to consider some of the indices and explore how each might relate to the use of maternal health services may help improve the use by youth.

Another related autonomy factor is head of household (male/female). Male heads were associated with reduced likelihood of the use of ANC (OR=0.99) but it was not statistically significant in influencing the use of PNC (Singh et al., 2013). It would be important to categorise it into more categories, for instance, male or female parent heads, partners or adolescents themselves, to find out if these differences relate to use.

2.11.2 Domestic/partner violence

Domestic violence leads to reduced self-esteem which, in turn, affects the use of health services (Spence & Adams, 1997). It is thus not surprising that partner violence was associated with decreased use of maternal services among adolescents. A study among

native Australians (Aboriginal) young women found a case of a girl who had a violent husband that would not allow her to go for ANC (Reibel et al., 2015). Another study among adolescents in the US found that partner violence was significantly associated with low use of ANC ($F(1) = 4.60, p = 0.03$) (Anderson & Rahn, 2016). The violence might be due to high levels of unwanted pregnancies among adolescents, which has been found to cause intimate partner violence (Goodwin et al., 2000).

2.11.3 Personal Barriers

Singh et al., (2013b) developed a barriers' index based on 7 factors that prevented women from seeking care when sick. Women who reported more than one barrier were less likely to attend four ANC visits, while those who had one big problem were less likely to use safe delivery. PNC use was less for those who had only one big problem ($OR = 0.47, 95\%CI = 0.244-0.897$) compared to those who reported no personal barrier (Singh et al., 2013). The weakness of this barrier index is that different personal barriers (Knowing where to go, getting permission, getting money needed for treatment, distance to the health facility, getting transport, not wanting to go alone, and concern that there may not be a female health provider) have different effects on different women in the extent to which they influence the use of maternity care. It is therefore hard to know the main barrier for these young women which affects policy formulation regarding the single most important barrier for the youth. Each of the variables could be analysed on their own to find their impact on use of services for the youth, and the most important barrier to their use of maternal health services identified. Another way would be to rank the impact of each barrier according to the views and opinions of participants on how each affects their use of maternal services.

2.11.4 Source of health information

Access to information through radios, televisions (TVs), and print media is believed to improve the use of health services. Studies in different countries agreed with this hypothesis, and they found that adolescents who had frequent exposure to mass media had a greater likelihood of using maternal health services than those who did not have any exposure or those who had infrequent exposure (Kamal, 2009; Haque et al., 2012; Sein, 2012; Singh et al., 2012b; Rai et al., 2012.) in Niger found that the chances of at least four ANC visits and PNC services use were higher for adolescents who Youth who had frequent exposure to mass media were more likely to have at least four ANC visits (Singh et al., 2013) and to attend PNC (Rahman et al., 2011a). In addition, health

providers' visits were also an important source of health information to adolescents during the maternity period. Adolescents who were visited by these health providers were more likely to use adequate ANC (Rogers et al., 1996; Singh et al., 2012a; Singh et al., 2012b), more likely to start ANC early (in the first trimester) (Arthur et al., 2007), as well as being more likely to use PNC services (Singh et al., 2012b). These health Professionals helped the youth with child care and breastfeeding during the postpartum period (Hunter, 2008).

However, a study in urban India comparing mass media and health provider communication found that exposure to mass media was more important on ANC use (OR=2.92, 95%CI=1.64-5.22, p=0000) while access to both mass media and a providers visit was related to a greater likelihood (OR=2.215) in the use of safe delivery (Singh et al., 2014). Therefore, health provider visits coupled with information from radios, TVs, and newspaper will help in increasing safe delivery among adolescents. There is also a need to find out the information given to adolescents from these different sources (mass media or health providers), as lack of knowledge about benefits of ANC was reported by adolescents who had never had any ANC in Zimbabwe and they reported that adequate knowledge about ANC would motivate their future ANC use (Chaibva et al., 2009). In addition, midwives agreed that adolescents' inadequate knowledge about the benefits of prenatal care would influence their future use of the services (Chaibva et al., 2010).

2.12 Theoretical framework

The Behavioural model of access to healthcare as proposed by Andersen (1968), which was developed to help know why people use health services, is relied upon for this analysis. This model suggested that the use of health services was a result of the interaction between characteristics of individuals, the population, and the surrounding environment, including the healthcare system (Andersen, 1968). This includes predisposing factors (including demographic and socioeconomic characteristics, past diagnoses, and health beliefs, knowledge, and values), enablement component consists of conditions that make health care available to the person (income, characteristics of the healthcare system and ease of access, availability of health facilities), and people's need for care (as perceived by the patient or evaluated by the health providers). Over time, this model has been revised and updated to include environmental and health provider characteristics, and health outcomes, such as consumer satisfaction and quality

of life (Aday & Andersen, 1974; Andersen, 1995; Andersen & Davidson, 2007; Andersen, 2008; Andersen et al., 2014).

Individual predisposing characteristics, like demographic factors such as age, represent biological need, meaning that young women might need medical attention because their bodies have not developed well, and their pregnancies are riskier compared to old women. Social factors determine the status of the individual in society as well as his/her ability to cope with current health issues and having the resources to deal with those problems. These include an individual's education level, occupation, ethnicity, religion and marital status, social networks, and family and friends' support. Health beliefs are attitudes and values that people have about health and health services that can influence their subsequent perception of need, and the use of health services (Andersen, 1968).

Individual enabling factors are those that influence financing for health services, such as disposable income, and wealth available to the individual to pay for the health services. It also includes means of transportation and travel time. Social support may also be considered an enabling factor that is measured by the amount of emotional, information, and affectionate support which are developed through social networks (Seeman & Berkman, 1988). Even if an individual is predisposed, she might not obtain the services unless enablement factors such as income and availability of health services are present (Fosu, 1994).

Need characteristics can be identified by the patients' perception depending on how they experience and respond to symptoms of the illness, as well as pain and worry about the condition of their health. They can also be evaluated by the medical professionals depending on the advancements in science and medicine, clinical guidelines and protocols, and the training and competence of the professionals who accomplish the assessment. The major need characteristics during a pregnancy is the severity of pain or complications of the pregnancy and worry which may compel the woman to seek maternal care at each stage of the pregnancy (Davidson & Andersen, 1997).

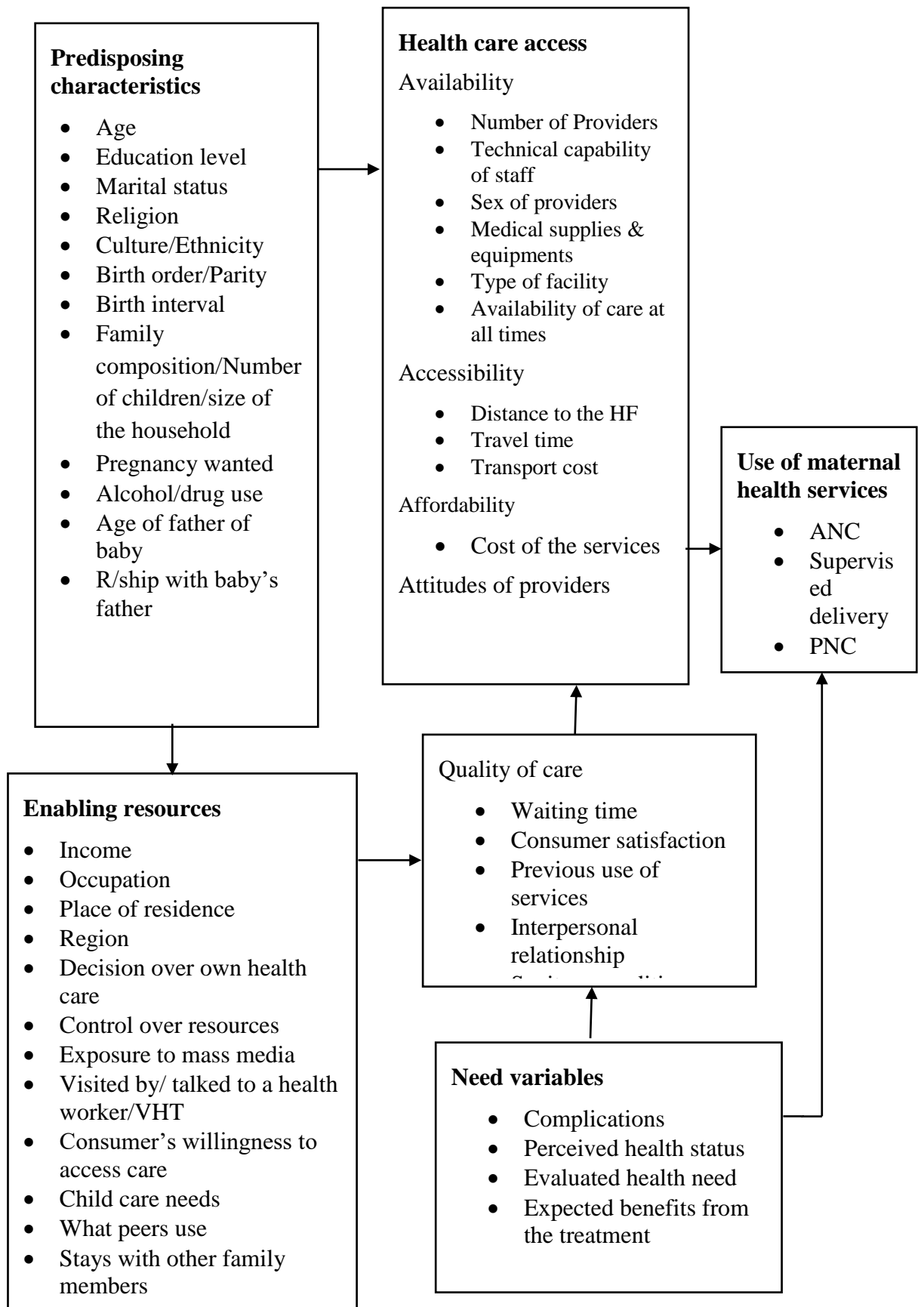
This framework included factors like health policy in terms of financing, education, manpower distribution, and health sector organisation factors and how they influence the use of health services. It also included environmental and health provider factors, such as distance to health facilities, travel time and transport costs, sex and training of medical staff.

The Andersen model of access to health has been used for explaining access to health care in the general population (Andersen, 1968; Kempen & Suurmeijer 1991). Studies have evaluated the predisposing, enabling, and need factors and found that health environment factors influence access to healthcare (Brenes-Camacho & Rosero-Bixby 2009). Differences in the use of health care by social class has been found in Rahman et al., (2011a). Poor economic status was associated with low access to health care (Jahangir, Irazola, & Rubinstein 2012). This model has been applied successfully in the studies on access to health care in developing countries (Fosu, 1994; Aminet al., 2010; Wandera et al., 2015), and in developed countries (Hirshfield et al., 2018) and reproductive health studies in particular (Bryant, et al., 2006; Sileo et al., 2015; Rutaremwa & Kabagenyi, 2016; Sagna & Sparks, 2016; Azfredrick, 2016; Rutaremwa et al 2015; Marcell et al., 2017).

This theoretical framework is relied upon for this study on predictors of the use of maternal health services among youth in Uganda. According to the behavioural model of access to healthcare as proposed by Aday & Andersen, (1974), and later modified by Andersen, (1995), this study hypothesized that the use of maternal health care among youth in Uganda is influenced by individual and community predisposing and enabling factors and environmental, need and health provider factors.

Firstly, the use of maternal health care is influenced by predisposing factors which are individual and partner characteristics, such as demographic attributes of age, parity, whether the child is wanted, and religion and education. The predisposing factors in turn operate through the enabling factors to influence, need, environmental and health provider factors to influence the use of maternal health. The predisposing factors can be individual or community factors, and may include age, parity, pregnancy desire, education level and religion, and enabling factors include wealth quintile, occupation, region and place of residence, and access to mass media. Need variables include perceived health status, illness and expected outcome of treatment, while environmental and health provider factors include variables such as distance to the health facilities, availability of care at all times, sanitation, attitudes of health providers and waiting times to receive the services. Therefore, this framework enabled the researcher to explore the relationship between predisposing, enabling, need, environmental, and health provider variables to influence the use of maternal health care services among youth in Uganda.

The conceptual framework in figure 3.2 shows the inter-relationship of the likely determinants of maternal health care use among youth. It was developed with the conceptualisation of how predisposing factors influence enabling factors which in turn impact on the environmental and need factors to influence the use of maternal health care services. Health provider factors are also hypothesised to influence the use of maternal health factors.



Source: Adapted from Aday & Andersen

Figure 2. 2: A conceptual framework

2.13 Research implications and research Gap

This review presented the factors for the use of maternal health services among youth. Variations across nations and regions were identified. For example, quality of services seemed to be the major barrier in developed countries, whereas socio-economic and demographic factors appeared to be more prominent in developing countries. To end preventable maternal deaths, WHO & UNICEF, (2017) highlights the necessity for universal access, reducing inequalities in access to and quality of reproductive, maternal, and new-born health care services. (WHO & UNICEF, 2017). Therefore, there is need to find out if socio-economic and demographic as well as quality of care factors do influence the use of maternal health services in Uganda, in order to provide some of the crucial areas that should be enhanced to improve maternal survival.

The literature analysis also found that use of maternal health services varies by marital status with unmarried youth using the services poorer than the married youth. This could be because unmarried youth face a higher risk of unwanted pregnancies than married youth (Conde-Agudelo et al., 2005; Patton et al., 2009; Kuate Defo, 2011), and stigmatization both at home and in the communities (Atuyambe et al., 2005, 2008). It is particularly important that unmarried youth receive continued attention during the maternity period. However, none of these studies conducted separate analyses for unmarried and married youth. Therefore, there is need to show levels, trends and predisposing, and enabling predictors for the use of maternal health services among unmarried youth to guide policy.

The review also observed that most studies did not include the need, environmental and health provider factors that have been proposed to influence the use of medical care according to the Andersen Behavioural model of access to medical care (Andersen, 1968). This is because most studies have used secondary data that do not include need, environmental and health provider variables to allow their inclusion for analysis. This therefore warrants a qualitative study to identify the influence of need, environmental and health provider factors on the use of maternal health services.

Very few studies have considered adolescents below 15 years because the secondary data used, especially national representative studies, consider women of reproductive ages between 15-49 years. Therefore, there is a need for a study among adolescents aged 10-14 years because most pregnancies during this age are among the unmarried.

Lastly, the review found that no study had documented the support required and received by youth during this time. A study by Chaibva et al., 2009 observed that adolescents needed support from family while Sein, 2012 found that the need for family support made adolescents to give birth from home. Teagle and Brindis (1998) and Cosey and Becthel (2001) observed that family support led to improved use of maternal health services and antenatal care respectively. A study to find out if unmarried adolescents' partners are influential in maternal health care decisions is crucial. Studies to document the kind of support received from the family members and partners (significant others), and those that are involved in health care provision could help bridge the gap. This study could also find out the kind of support that adolescents would require from their partners, so that those males who deny responsibility for the pregnancy, whether due to fear or any other reason, can know what these young mothers need during this time. The reasons for non-support by partners should be mitigated to improve care for adolescents and the use of maternal services by this vulnerable group. Therefore, a study on support expected and support received from each of the family members, partners, community and health providers and their impact on the use of maternal health services is required.

Considering the above, the reseach gaps that were identified were:

- A study among unmarried youth
- The influence of socio-demographic and quality of care on the use of maternal health services
- The influence of need, environmental and provider factors on the use of maternal health care services
- The experiences of the youth in their families, communities and health facilities
- The support received from family, partner, community and health providers' health system

This literature review chapter provided the details of the systematic search of literature on the use of maternal health services among youth. The chapter assessed the methodological quality of the literature on the factors for the use of maternal health services. The findings of the literature were thematically analysed and discussed. The analysis of the findings provided evidential bases for further research. The review has presented the lack of research on experiences and support of unmarried youth not only

in Uganda but generally. There is need to investigate these experiences to improve the use of maternal health services which will thus reduce maternal mortality. Therefore, this study would gain insights from unmarried youth in western Uganda. Based on the literature review and the research question that has been identified, therefore the next section is set up to discuss the methodology of the study.

3 CHAPTER THREE: METHODOLOGY OF THE STUDY

This chapter describes the methods used to achieve the research objectives. It explains the philosophical and theoretical foundations upon which the study is grounded, mixed methods research design, data sources, populations, sampling, and participant recruitment techniques. Data analysis and ethical considerations and principles are also presented. Finally, the positionality of the researcher and a reflexive account of the research is presented.

3.1 Research methodology

Research methodologies include; qualitative, quantitative and mixed methods. Qualitative data is linked to an interpretivist or constructivist paradigm which seeks to answer the questions of why, how (Cresswell, 2003, 2012, 2013), and exploring and understanding meaning of a social problem (Cresswell, 2009, 2013). Qualitative research offers rich data about cultures, beliefs, experiences, and actions of an individual in a defined socio-cultural setting (Benard & Benard 2012). Where as quantitative data is linked to positivism and seeks to answer the what, how much, and the relationship between and causes of this effect (Creswell, 2003; Edirisingha, 2012; Creswell, 2009, 2013, 2014; Creswell & Creswell, 2018). The quantitative questions are best answered with numerical precision and are often formulated as hypotheses (Clough & Nutbrown, 2009, 2012; Creswell, 2013, 2014). Mixed methods research is ‘the research in which the investigator collects, analyses data, integrates the findings, and draws inferences using both qualitative and quantitative methods in a single study or program of inquiry’ (Tashakkori & Creswell, 2007: 4).

The mixed method approach is defined as a “‘third methodological movement’ (Tashakkori & Teddlie, 2003:5), ‘third research paradigm’ (Johnson & Onwuegbuzie, 2006:15), and ‘a new star in the social science sky’ (Mayring, 2007:1). Mixed methods research is ‘the combination of qualitative and quantitative approaches in the methodology of the study’” (Teddlie & Tashakkori, 1998: ix). It emerged as an alternative to qualitative and quantitative research in the last three decades because it offsets the weaknesses of each method (Cowman 1993; Bradley 1995; Wendler 2001; Creswell & Clark, 2003; Williamson 2005; Clark & Creswell, 2008, 2009, Creswell & Clark, 2011; Creswell, 2013, 2014, 2018).

The mixed method is embedded in the pragmatic assumptions to address the research problem (Tashkkori & Teddlie, 2003; Johnson & Onwuegbuzie, 2004). With

pragmatism, the research problem is more important, and researchers adopt different research approaches to understand the problem (Creswell, 2003; Creswell, 2013, 2014, 2018).

3.1.1 Rationale for mixed methods

In undertaking any research, there are potentially several approaches for collecting and analysing data. Sometimes, the purpose of the research, nature of knowledge and the type of questions will direct itself towards either a quantitative or qualitative method and this logic should flow naturally through the design, sampling, data collection and data analysis (Punch, 2000; Clough & Nutbrown, 2009; Tashakkori & Teddlie, 2010; Clough & Nutbrown, 2012). Mixed methods' approach allows the researcher the freedom of choice on the method that works best in understanding a research problem (Creswell & Clark, 2007, 2011; Creswell, 2009; Creswell, 2013). Mixed methods present the different aspects of an issue to a much greater extent than a single method (Creswell et al., 2003; Creswell & Plano Clark, 2007, 2011; Tashakkori & Teddlie, 2010; Creswell, 2013) and results of a mixed study can be generalised to a wider population (Creswell et al., 2003; Creswell & Plano Clark, 2007, 2011; Tashakkori & Teddlie, 2010; Creswell, 2013). Integration of qualitative and quantitative research methods complement each other to produce a complete picture of the world (Reich et al., 2000; Creswell & Clark, 2007; Creswell, 2013, 2014; Creswell & Creswell, 2018) and improves the validity of the analysis (Bryman & Burgess, 1994). It was felt that using a single methodology would be narrow and would not comprehensively answer the aims of the study. Mixed methods helped to answer the research questions that would not be answered by quantitative or qualitative approaches alone (Creswell & Clark, 2007).

For this study, the quantitative data enabled the study to generalise the results to a larger population; something that would not be possible with qualitative data only. The findings from the quantitative analysis of the pooled data from the four Uganda demographic and Health surveys (UDHS) helped the researcher to find factors for the use of maternal health services among youth in Uganda. The qualitative strand captured the in-depth experiences from a smaller group of participants. Multiple methods helped to explain the study findings. Questions aimed at explaining unique associations and patterns in the quantitative analysis were included in the qualitative data collection tools. The quantitative and qualitative results were thus complementary.

The literature review revealed that previous studies have used a single method to find factors or experiences in the use of maternal health services. The literature review identified gaps in the use of the Andersen's behavioural model of access to medical care where environmental, need and health facility factors are missing in most secondary data analyses. These factors are also missing in the Uganda Demographic Health Surveys (UDHS) data used for the quantitative analysis of this study. However, these factors were explored during the qualitative analysis and their influence on the use of maternal health services is presented.

Additionally, qualitative data were collected to answer the research objectives that were not answered by the quantitative data specifically: i) to explore the experiences and support for unmarried youth aged 15-19 years, at home and in the community during the maternity period; and ii) to understand the health providers' perspectives in the use of the maternal health services for unmarried youth 15-19 years of age in Uganda.

Although a mixed method design seems to be a useful way to address and understand the research problem, mixed projects can be complex (Creswell & Clark, 2003; Morgan, 2013, Creswell, 2013). Mixed method is complicated as 'combining two methods involves more than twice as much work as a single method' (Morgan, 2013:2). There is need for extensive data collection and separate analyses are conducted because of differences in the data which requires a lot of time and resources (Creswell & Clark, 2007; Creswell, 2013; Creswell & Creswell, 2018). Integration of results from both components is a must and the results should be integrated properly, however, integration of results from separate datasets can be difficult too (Morgan, 2013; Creswell, 2013; Creswell & Creswell, 2018).

3.2 Research Design

This study adopted the explanatory sequential design which is a two-phase design. It begins with a quantitative phase which is followed by a qualitative phase that follows up on specific significant, insignificant or surprising results with the aim of providing an in-depth explanation for the quantitative results (Cresswell et al., 2003; Creswell & Clark, 2007, 2011; Creswell, 2009; Cresswell, 2013, 2014; Creswell & Creswell, 2018). Quantitative results are summarised and results that require further explanation are noted and included during qualitative data collection. In addition, results of the quantitative study help to inform the area and population for the qualitative study

(Creswell & Clark, 2011). The integration of results in an explanatory sequential design is at the results interpretation stage.

For this thesis, the first stage was the quantitative data analysis of the four Uganda Demographic and Health Surveys data sets (1995, 2000/01/ 2006 & 2011 UDHS) in order to discover the factors that influence the use of maternal health services, such as the timing of first antenatal visit, frequency of ANC visits and the use of health facilities at childbirth among unmarried compared to married youth aged 15-24 years in Uganda. The pooled data from the 1995, 200/01, 2006 and 2011 UDHS data was analysed using statistical analysis methods. Quantitative results were summarised and results that required further explanation were identified and included during qualitative data collection.

The population for the quantitative study and the qualitative study is different in this research because this data was collected by different implementing organisations and at distinct times. The western region of Uganda was chosen for the qualitative study. This was because of observed poor maternal health services (ANC frequency) use among unmarried youth compared to other regions in Uganda. Qualitative data collection tools were also finalised after quantitative data analysis to allow inclusion of issues that required further explanation from the quantitative data analysis.

The second stage was the qualitative data collection among unmarried youth, their parents and health providers that were involved in the provision of maternity care. This qualitative design helped to answer specific objectives three and four² that could not be answered by quantitative data and to get a detailed explanation of some of the quantitative results. Qualitative data was analysed, summarised and integrated with quantitative results at the results discussion stage. Therefore, the qualitative phase collected data that explained the initial quantitative results and answered the research questions that were not answered by quantitative data.

² -To explore the experiences and support available to unmarried youth, at home and in the community during the maternity period in Uganda

-To understand the health provider perspectives on the use of maternity care by unmarried young women aged 15-19 years in Uganda

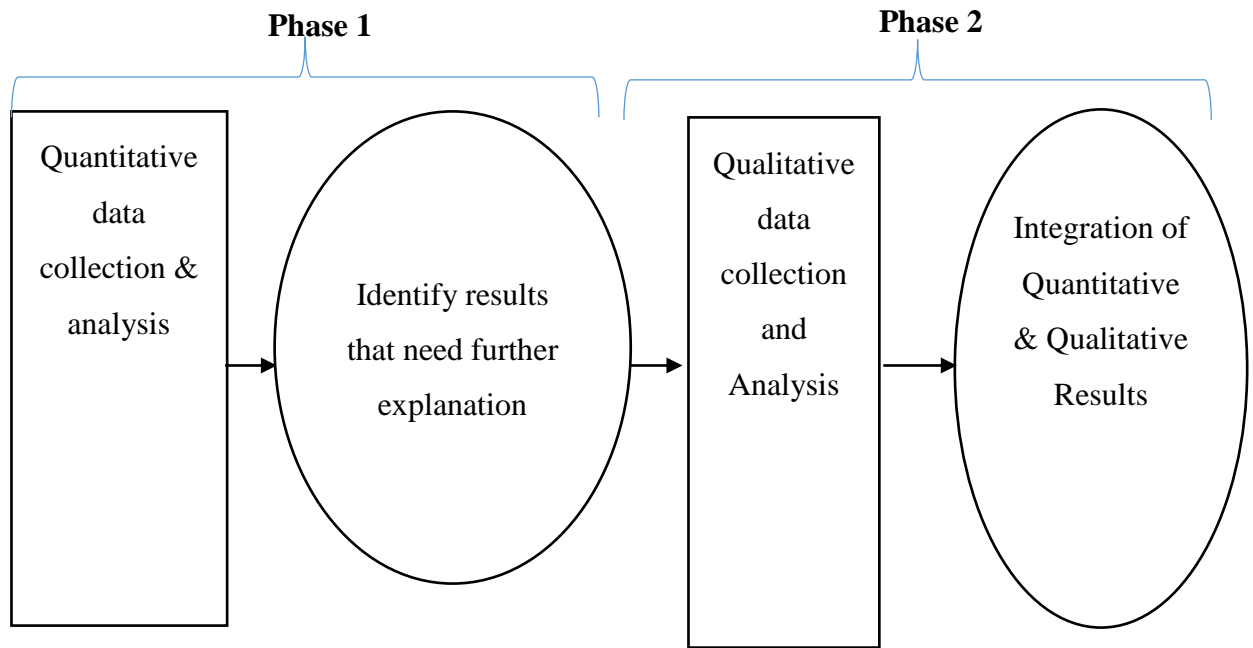


Figure 3. 1: An explanatory sequential research design visual diagram

3.3 Quantitative research methods

3.3.1 Data source

The researcher conducted a secondary scrutiny and analysis of the Uganda Demographic and Health Survey (UDHS) data carried out in 1995, 2000/01, 2006 and 2011. The pooled data boosted the sample size among unmarried youth and improved the statistical power. These surveys were mainly implemented by Uganda Bureau of Statistics (UBOS) with technical support from organisations like Macro International & ICF Macro, Ministry of Health and Makerere University. Financial assistance for the surveys was provided by the government of Uganda and international funding organisations; USAID, UNFPA, UNICEF, WHO, DFID and Irish Aid from the Government of Ireland. These surveys aimed at the provision of information on demographic, economic, health and family planning status as well as national and regional trends in Uganda. They also provided data important for the monitoring of the Millenium Development Goals (MDGs) and currently for monitoring the Sustainable Development Goals (SDGs³ (UBOS & ICF Macro, 2001; UBOS & Macro International 2007; UBOS & ICF International, 2012; UBOS & ICF, 2018).A series of six quinquennial Demographic and Health Surveys have been carried out in Uganda since 1988/89, but data from the first survey (1988/89) is not included in this analysis because it lacked data for major variables of interest, for instance wealth index, access to newspapers, and television. The 2016 UDHS data is also not included in this analysis because the data was not available at the time of data analysis for this study.

3.3.2 Sample design and response rate

Uganda Demographic and Health surveys is a household-based survey among women of reproductive ages (aged 15-49 years) and men aged 15-54 years. The sample description in this section is about households and women because this analysis is among females only. As table 3.1 shows, there was an increase in the number of households and women sampled and interviewed over the survey years. This could have been due to population growth in Uganda which necessitated a proportional sample (UBOS, 2016b). The response rate was also very high with non-response rate of below five percent for the households and below ten percent for the individual women. The

³ Details about planning, organisation, sampling and sample questionnaires can be obtained from dhsprogram.com

household and individual response rate was high during the 1995 and 2006 surveys and slightly lower during the 2000/01 and 2011 surveys. The lowest women response rate was during the 2011 UDHS at 93.8% and highest at 96 percent during the 1995 UDHS. The non-response for women was due to refusal or unavailability of sampled women⁴.

Table 3. 1: Sample size and response rate for the UDHS (1995-2011)

Year of Survey	Women sampled	Women completed	Women response rate
1995	7,377	7,070	95.8
2000/01	7,717	7,246	94
2006	9,006	8,531	94.7
2011	9,247	8,674	93.8

Source: 1995, 2000/01, 2006 and 2011 UDHS reports

3.3.3 Questions included in the UDHS

The four Uganda Demographic and Health Surveys collected information on socio-economic, demographic and health-related issues, including antenatal and childbirth care among women aged 15-49 years (UBOS & ICF Macro, 2001; UBOS & Macro International 2007; UBOS & ICF International, 2012; UBOS & ICF, 2018). The maternal health services' information was collected for the last birth in the five years before each of the survey. To measure levels of the use of maternity care during pregnancy, women who had had a birth within the last five years before the survey were asked the following questions on ANC use: i) Did you see anyone for antenatal care for this pregnancy? ii) Whom did you see? iii) Where did you receive antenatal care for this pregnancy? iv) How many months pregnant were you when you first received antenatal care for this pregnancy? v) How many times did you receive antenatal care during this pregnancy?

Women were also asked about their place of birth for the last child by using the following question: i) Where did you give birth to (NAME of the child)?

⁴ Details on sampling frame and other relevant information are available on www.dhsprogram.com/uganda

3.3.4 Reliability of Demographic and Health Surveys Data

Macro International, ICF, and MEASURE DHS experts developed and designed DHS surveys questionnaires in consultation with experts from Uganda Bureau of Statistics (UBOS) among other key stakeholders. There was technical support to UBOS from the DHS technical team during the DHS surveys' implementation stages. Multidisciplinary experts extensively trained the research assistants, supervisors, editors and laboratory technicians. The pre-test of DHS tools followed in areas not sampled for the survey. Experts edit, code, enter, verify and check data for consistency and completeness. The DHS data processes also take reasonable times to enable their quality completion (dhsprogram.com, n.d.).

3.3.5 Dependent variables

The dependent variables of the study include maternal health service use during pregnancy and at birth, more specifically, antenatal care use and the use of health facilities at childbirth. In this study, antenatal care is measured by two variables; the number of visits and the timing of the first ANC visit. World Health Organisation (WHO) recommends that pregnant women in resource poor areas should have at least four ANC visits. Early and adequate ANC use helps provide quality care, and to identify complications of the pregnancy which can successively help avert the negative impacts on the pregnancy, and on the woman herself (Koshar et al., 1998; Carroli et al., 2001; WHO, 2006).

During the UDHS interviews, women who had a pregnancy during the last five years were asked if they attended ANC for their last pregnancy. Those who consulted a trained health provider for ANC were asked how many times they did receive antenatal care during the pregnancy. They were also asked how many months pregnant they were, the first time they received ANC for that pregnancy. For this study, the number of ANC visits was treated as a continuous variable and ranged from zero for those who did not have any ANC visit to 20 ANC visits. ANC timing was categorised into a binary outcome and those who initiated ANC visits in the first three months of the pregnancy were coded as one (1), while those who never attended or started after the three months were coded as zero (0).

The researcher acknowledges that quality of ANC services received would be a good measure of ANC use, as recognised by the current sharpened plan for reducing maternal mortality in Uganda (MOH, 2016a). However, data on variables like quality health

facilities, qualification of health providers and availability of drugs that have been identified to have a great impact on utilization of health care services in other studies (Gabrysch et al., 2011; Hope et al., 2014), were lacking in the UDHS data. This research assumes that early and adequate ANC visits are both associated with quality services with the implementation of focused ANC (WHO, 2006). These include blood tests for diseases that have adverse effects on the woman and pregnancy, immunization, especially tetanus toxoid, and medicine and supplementation for prevention and treatment of these illnesses, like iron tablets, malaria, and HIV/AIDS drugs for EMTCT (WHO, 2016).

Safe delivery is termed as delivery conducted either in a medical institution or home deliveries with assistance from a trained birth attendant (WHO, 2006). For this analysis, health facility use at birth was used as a proxy for safe delivery as child deliveries that occur in health facilities are assumed to be under the supervision of a health provider. In addition, a small proportion of health facilities (5.7%) do perform home deliveries in Uganda (MOH & ICF International, 2008). In addition, supervised deliveries outside the health facilities are low in Uganda, for example, according to the 2011 and 2016 UDHS, there was a minor difference in proportion of the women of reproductive age who had deliveries supervised by a trained health professional compared to those that used health facilities at childbirth (58% & 57.4% in 2011, and 74% & 73% in 2016 respectively) (UBOS & ICF international, 2012; UBOS & ICF, 2018). Moreover, the need for emergency obstetric care during a home birth might be unfavourable due to poor transport in most parts of the country, coupled with the long distances that must be covered to health centres; lack of ambulances, and poor roads which are worsened during the rainy season (Population Secretariat (POPSEC) Uganda, 2012; WHO & MOH, 2014).

During the UDHS interview, women who had a childbirth within the last five years before the surveys were asked where the last birth occurred. The survey question was “Where did you give birth to (name)?” Youth gave birth at different places, including their homes, in the presence of traditional birth attendant’s (TBAs) at their homes, and private and government health centres. For this study, health facility delivery is when a youth gave birth in health centres regardless of whether it was private, or government managed. All other places outside the health centres, for instance, on the way to the health facility or at home or TBAs’ home was regarded as a birth outside the health

facility. This variable was recoded into a dichotomous variable where zero (0) is when youth gave birth outside the health facilities and one (1) is when youth gave birth in the health facilities.

3.3.6 Independent variables

The behavioural model of access to health care, which was based on for this analysis of the utilisation of maternal health care services groups variables into predisposing, enabling, need, environmental, and health provider categories (Andersen and Newman 1973; Aday and Andersen 1974; Andersen 1995; Phillips et al 2012). Based on this conceptual model, previous research, and data availability, only predisposing and enabling factors were identified in the UDHS data. Thus, the association of these variables with maternal health services utilisation among youth was examined. They include predisposing factors (age, parity, and pregnancy desire, education level of the woman and her husband, and religion) and enabling factors (household wealth index, type of occupation for the woman and her husband, place of residence, region and access to mass media/source of information). Three district level variables of education, mass media and wealth levels were developed from population-level variables of education years, access to mass media, and household wealth index respectively (**Details in chapter four, section 4.6.2**).

3.3.7 Study Population

Quantitative data analysis was carried out among unmarried and currently married youth who gave birth within the last five years before the survey while aged 15-24 years. UDHS collected reproductive health information about the last pregnancy from women of reproductive ages (15-49 years) who gave birth within five years before the survey; however, this analysis is among unmarried compared to married female youth aged 15-24 years only.

The unmarried youth are a focus for this study because literature shows that most of their pregnancies are unwanted (Teagle & Brindis, 1998; Rassi et al., 2013; Nove et al., 2014) and unwanted pregnancies are associated with stigmatisation and poor use of maternal health services (Teagle & Brandis, 1998; Atuyambe et al., 2005, 2008; Gage, 2007; Bbale, 2011). Youth experience adverse maternal complications due to their young ages at pregnancy and childbirth, such as obstructed labour, fistula and unsafe abortion (Jagwe-Wadda et al., 2006; Bearinger et al., 2007; Kuate Defo, 2011; Althabe et al., 2015) and higher levels of maternal mortality (Ganchimeg et al., 2014; WHO,

2016). Adolescents also have poor pregnancy outcomes regarding low birth weight, pre-term and stillbirths (Debiec et al., 2010; Shah et al., 2011; Ganchimeg et al., 2014; UNICEF 2014). In Uganda, unmarried youth attain low education levels due to discriminatory education policies against girls who get pregnant (Atuyambe et al., 2005; UNICEF, 2015; 2005; Wodon et al., 2017; Natukunda, 2018). They end up being economically dependent due to their low education levels limiting their employment prospects (WHO, 2014; Wodon et al., 2017).

3.3.8 Ethical consideration

Secondary data obtained from the 1995, 2000/01, 2006 and 2011 UDHS were used for the quantitative data analysis. The implementing agencies that is UBOS, Macro International and ICF International took ethical issues into consideration during the survey processes. Permission was sought from the dhsprogram to use the data that is freely available for download on the website after registration.

3.4 Quantitative data analysis

This was done in three stages: univariate, bivariate and multivariate analysis. The data were weighted to account for potential design effects introduced by sampling.

3.4.1 Univariate data analysis

Descriptive statistics to present characteristics of youth who had given birth within the last five years before the surveys, aged 15-24 years and the levels of the use of maternal health care services was carried out. The results are presented as frequencies and percentages.

3.4.2 Bivariate analysis

Bivariate analysis involving the use of cross-tabulations with Chi-square statistical techniques was carried out to test the relationship between the timing of antenatal care and health facility use at childbirth with each independent variable. This showed if each independent variable is associated with the dependent variable. The relationship is significant at 95% confidence interval, that is, a p-value of less than 0.05. To highlight the differences in the mean number of ANC visits by different predictor variables, one-way analysis of variance (ANOVA) was used.

3.4.3 Multivariate analysis

At multivariate level, hierarchical linear and logistic models for analysing multilevel data were used to establish the determinants of maternal health services use.

Multicollinearity test was done to identify and remove multicollinear variables. Multicollinearity was not a problem for these models because no tolerance value was below 0.2 and no reciprocal value or variance inflation factor (VIF) was above 10 (Appendix III).

3.4.1 Multilevel logistic regression for factors of ANC timing and use of health facilities at child birth among youth

To find the factors for the timing of the first antenatal care visit and use of health facilities at child birth, a two-level logistic regression model was fitted with district at the second level. Although there was potential clustering within each cluster (that is EA), the number of youth (especially unmarried) within each cluster was too limited to enable inclusion of cluster as a distinct level of analysis (see explanation in 4.4.1 below). The multilevel logistic regression equation takes the form:

$$\text{Logit } \Pi_{ij} = \text{Log} \left[\frac{\Pi_{ij}}{1 - \Pi_{ij}} \right] = \beta_0 + \beta X'_{ij} + u_{oj}$$

Where (Π_{ij}) is the probability of youth i , in the j th district accessing ANC in the first trimester or giving birth from a health facility. β_0 is the regression intercept, X'_{ij} are vectors of individual or district level covariates; β is the associated vector of estimated parameter estimates, and is shared by all districts, while the random effect u_{oj} is specific to district j .

Quasi-Likelihood estimation methods were relied on for the multilevel estimation procedure for discrete data. Initially, the first-order Marginal Quasi-Likelihood (MQL) estimates were fitted and finally, the second-order Predictive/ Penalised Quasi-Likelihood (PQL) approximate estimation procedure was fitted. Results of the second order are presented. This is because the second-order PQL estimates are a considerable improvement, especially for the level 2 standard deviation, and the fixed parameter estimates have been found to be less biased (Rodriguez & Goldman, 1995; Goldstein, 2003).

3.4.2 Multilevel linear regression to model predictors of ANC numbers

Since the number of ANC visits is a continuous variable with ANC numbers ranging from zero to twenty and the predictor variables are categorical, multilevel linear regression was used to find factors for ANC numbers among the unmarried and married female youth. Several linearity assumptions were carried out and it was observed that

the number of ANC visits did not violate the most crucial assumptions of normal distribution of either residuals or linearity between variables and homoscedasticity (results not presented). Some outliers were identified but these do not affect the outcome although they may make the model unstable. The multilevel linear regression equation takes the form below;

$$y_{ij} = \beta_o + \beta_{ij}x_{ij} + u_{oj} + \varepsilon_{ij}$$

Where y_{ij} is the multilevel regression model for the number of ANC visits for person i in district j , β_o is the regression intercept, x_{ij} are vectors of the individual or district level characteristics. β_{ij} is the vectors of estimated parameter coefficients, and is shared by all districts, while the random effect u_{oj} is specific to district j and ε_{ij} is the error term at individual and district levels.

The effects of individual-level and district-level determinants for the use of ANC in the first trimester and the mean number of ANC visits were reported in terms of odds ratios and estimates respectively, whereas the measures of district variation in the use of ANC (random effects) are represented by the intra-district correlation coefficient (IDC) and variance partition coefficients (VPC). The Intra-district correlation shows the proportion of the total unexplained variation in the outcome that is attributable to district level factors (Field, 2009; Rasbash et al., 2009). It is a measure of the degree of dependency or similarity or homogeneity of individuals in the same district (Kreft & de Leeuw, 1998).

3.4.3 Justification for Multi-level modelling

The main reason for using multilevel models is because the data for this study, the Uganda Demographic and Health survey data is hierarchical, since UDHS follows a multistage sampling procedure, and thus individuals are nested within communities/clusters and clusters are nested in districts. Conventional regression methods assume that individuals are independent of each other. Thus, ignoring clustering which causes standard errors of regression coefficients to be underestimated (Goldstein, 2003); and the estimates of observed covariates are likely to be biased (Stephenson et al., 2006). Multilevel models allow modelling of the dependencies between residuals (Field, 2013).

For this analysis, the second level of multilevel analysis is district of residence, not clusters, because clusters had insufficient samples/individuals, especially for the unmarried youth, and that would not allow statistical power. With the decentralised system of administration, the district is a very important unit of health programs implementation in Uganda (The constitution, 1995). It is believed that individuals in the same district may have similar characteristics and access similar resources including health care. Thus, youth in the same district may use the maternal health care services in the same way and are not independent (Goldstein, 2003; Rasbash et al., 2009). Multilevel modelling helps show how variables measured at the district level affect relations occurring at the individual level (Raudenbush & Bryk, 2002 in Vogt, 2007:227). Multilevel modelling enables researchers to explore the individual and contextual characteristics that affect the outcome, and how the interactions between individual and contextual variables contribute to the outcome (Ross, 2000; Singh et al., 2013a).

3.5 Data weighting

The data was weighted using the individual/women weights to account for disproportionate sampling and non-response. During DHS, some areas were over sampled while others were under sampled to get enough samples for regional and rural urban estimates. Therefore, a weight is the number used to decrease or increase the sample to the size it should be in proportion to the total population. In areas where the population was oversampled, the weight is less than one to reduce the sample size, while in areas where the population was under sampled, the weight is more than one to increase the sample size. Univariate and bi-variate results show the weighted totals.

3.6 Approaches in qualitative research

There are different approaches to a qualitative inquiry. This is due to different assumptions on what is known and how it is known. They include ethnography, symbolic interactionism, phenomenology, grounded theory, post-structuralism and postmodernism, case studies, narrative research and the more recent ones of hermeneutics, critical theory, feminism and post-positivist studies. Ethnography, grounded theory and phenomenology are the most common ones used in health and social science research (Creswell, 1998; Patton, 2002). This research is based on phenomenology and feminist approaches.

3.6.1 Phenomenology

Phenomenology is the study of how people experienced an issue (Vogt & Johnson, 2015). Phenomenology involves the collection of data on the participants who directly experienced a phenomenon under study (Cresswell, 2003). It follows a constructivism paradigm where people construct their knowledge of the world through experiences and a reflection on those experiences (Denzin & Lincoln, 2011)

Phenomenology interviewing enables the researcher to obtain as much experiences as possible. Open-ended questions are used to enable participants to use their own words to explain their feelings, perceptions, and understanding of the phenomenon. To achieve this, in-depth interviews, focus group discussions and key informant interviews were used. To learn a lot about the topic, the researcher must listen attentively, probe the participant's responses to gain their detailed experiences and not distract or interrupt the story flow unnecessarily (Roulston, 2010). Participants selected for this study are those who have experienced a pregnancy before marriage and are able to talk about their lived experiences. Thus, this study's participants include youth, their parents and health providers who have been involved in the care for youth during the maternity period and are able to give a detailed account of the experiences.

This is an appropriate approach because it enabled the collection of unmarried youth's lived experiences and their views of the maternity period. Broad and lengthy meetings, such as focus group discussions (FGDs) and in-depth interviews were conducted. In-depth interviews and FGDs allowed research assistants to probe the participants for clarity and details. This approach supported the understanding of youth' experiences during the maternity period. All interviews and discussions were audio recorded in order to be attentive and not to distract the flow of interviews. Interpretative phenomenological analysis (IPA) has been suggested as the analysis method for the study of past experiences (Van Manen, 1997; Polit & Beck, 2008; Creswell, 2009, 2012; Braun & Clarke, 2013). IPA was used to find out the detailed experiences of unmarried youth aged 15-19 years who were pregnant or had already had a child birth. This helped acquire their experiences that will be useful in informing policy to improve the unmarried youth' use of maternal health services.

3.6.2 Feminist research

Feminism research developed in the 1970's and 1980's and involves the use of open-ended, intensive and unstructured interviews instead of scientific standardised surveys

(Roulston, 2010). Feminist research uses qualitative research methods, such as focus group discussion, in-depth interviews and key informant interviews. The common feminist research methods or feminist interviews include semi-structured interviews, in-depth and open-ended interviews, life history interviews and focus group discussions. These research methods enable the researcher to listen carefully to the women's voices which helps to get context during analysis.

Feminist researchers should be open about themselves to create a close relationship with participants and enable them to open-up about their experiences. Openness ensures trust of the researcher and researchers should also believe the participants (Reinharz, 1992; Chase, 2002 as cited in Roulston, 2010). The feminist researcher should be friendly, warm and caring (Kvale, 2007), and should continue the relationship with the participants even after the research has ended (Oakley, 1981 cited in Roulston, 2010). However, this friendly relationship has been criticised as it can make participants trust them and reveal so much; something which participants can end up regretting (Kvale, 2007; Fich, 1984, in Braun & Clarke, 2013). These interviews generate knowledge about topics that are unknown and unstudied about women's lives. The researcher-participant relationships created should be 'those that are ethical, non-exploitative, sincere, and genuinely interested in free will and open dialogue with women participants' (Roulston, 2010:23). For sensitive issues, only females could interview participants (Reinharz, 1993). In the current study, the research team was comprised of only female interviewers because of the sensitive nature of the topic that was discussed.

Feminist research emphasises that research ethics standards for conduction of social research are maintained (Reinharz, 1992; Chase, 2002 as cited in Roulston, 2010). Feminist research is meant to advance women's causes in a patriarchal, capitalist society by working with women in respectful and ethical ways that allow women's voices to be heard. Hearing unmarried youth' stories played an important role in my research as this research is hoped to empower these girls to gain lost power to make strategic choices, thus giving a voice to unprivileged youth (Kabber, 2005). Young unmarried women may be under-represented in household surveys, especially those in education or training institutions. This analysis enables the voices of those who are not usually heard, for instance, youth who might be excluded from participating due to poor attitudes towards their pregnancy and early age at giving birth.

3.7 Qualitative research methods

These are the techniques and procedures followed to conduct qualitative research. This research carried out focus groups discussions (FGDs), in-depth interviews and key informant interviews.

3.7.1 Focus group discussion

Focus group discussions are homogeneous groups of about 6-10 participants who take part in an investigation of a certain research problem (Patton, 2002). They are led by a moderator using a focus discussion guide (Patton, 2002). Fewer FGD participants generate a rich discussion, and are easier to control, although they may make it difficult to sustain the discussion, and larger groups might be hard to control (King & Horrocks, 2010; Roulston, 2010; Braun & Clarke, 2013). More participants should be recruited in case there are no-shows (King & Horrocks, 2010; Roulston, 2010). The homogeneity of the group is to make participants feel comfortable and encourage participation in the discussion (Morgan, 1997; King & Horrocks, 2010). Homogeneity is determined by the research topic (Braun & Clarke, 2013), and in this study, it was determined by their age group (15-19 years) and pregnancy or childbirth while unmarried.

Participants and moderators usually sit in a circle and discussions usually take about 2 hours. FGDs encourage participants to open-up thereby facilitating the gathering of more data (King & Horrocks, 2010). Focus group interviews are seen to be natural, encourage interaction, and promote recall and discussion of an opinion (Braun & Clarke, 2013; King & Horrocks, 2010). Use of focus group discussions is considered a good research method for collecting data on community perspectives and beliefs (Braun & Clarke, 2013). FGDs are empowering and good for research with less privileged populations as they get to know that their experience is not isolated (Braun & Clarke, 2013). FGDs gather 'broader socio-cultural or personal meanings', but do not allow in-depth follow-up of individual views or experiences as they will be lost in the group views. (Braun & Clarke, 2013:113).

Eight focus group discussions (FGDs) with youth in Bushenyi district (4FGDs) and Kibaale district (4FGDs) in western Uganda were accomplished. Each FGD included 4-8 youths aged 16-19 years. My intention was to include younger adolescents under 15 years. This would allow me to classify participants by age group and hold FGDs for those aged 10-14 years and 15-19 years separately. However, I was not able to access

adolescents who were pregnant or had given birth three years before fieldwork and were aged below 15 years.

Focus group discussions helped me to capture detailed community perspectives on the use or non-use of maternal health services. Explanations for the observed results in the quantitative results were also obtained during FGDs. In addition, unmarried youth easily shared their personal experiences during FGDs. The level of discussion, agreement, and disagreement about some issues helped gather rich information. Youth also learnt through the FGDs *“I have never heard of going back for postnatal, I have just heard it today.”* This was shown as an advantage for championing social change and empowering those who are less privileged and marginalised. FGD participants also learn that they ‘are not isolated in their experience or perspective’ (Braun & Clarke, 2013:111).

FGDs were conducted at an agreed central place, such as community halls or at a health facility. They were held at an agreed and convenient time for participants. One FGD was conducted at a village health team’s home because the community hall was unavailable. It is advised that FGD participants keep refreshed in order not to lose concentration (Braun & Clarke, 2013). Refreshments were provided to FG participants. The time of refreshment was a break for the participants and for the researcher to clarify to the moderator what was not clear during the first part of the FGD or any issue that required follow-up. The break was for fifteen minutes and the discussions took about two hours including the break. Compensation of FGD participants is highly recommended (Braun & Clarke, 2013). The FGD participants were refunded twenty thousand shillings (about 4.5 pounds) for transport since they travelled to a central place away from their homes. This was also as an appreciation for their time.

3.7.2 In-depth interviews

Individual in-depth interviews are better at capturing detailed personal experiences (Braun & Clarke, 2013). Therefore, to get a deeper understanding of some issues, in-depth interviews (IDIs) were carried out with some of the identified youth. More in-depth interviews with their parents were conducted. Interviews offered privacy to the participants to share their in-depth experiences. In addition, literacy levels among youth who get pregnant in this age group justifies the use of interviewer administered interviews. However, the depth of the responses from IDI participants was limited. This could have been because of the perceived power relations between older research

assistants and the interviewed youth. Due to the sensitivity of the pregnancies among this population group, they might also have feared to reveal too much about their experiences from their point of view.

In-depth interviews were conducted at the participants' home or after the FGD for those who were identified during the FGD. Those identified after a FGD would first have a break before the IDI. No refreshments were provided to all IDI participants, but they were given a token of appreciation worth ten thousand Uganda shillings (about 2.5 pounds). There was no transport refund for IDI participants because most of them were interviewed from their homes or after participating in FGDs. I had proposed to have in-depth interviews with youth' partners but did not obtain sufficient number of participants. One partner was interviewed but did not give detailed answers to the questions and his interview is not included in this analysis.

3.7.3 Key informant interviews

Key informants (KIs) are persons that are more knowledgeable about the phenomena under investigation in a community (Newman, 2013). The KIs for this research are health providers who were involved in the provision of maternal health care services at the health centres named by the youth to have accessed maternity care from. The study had proposed to include health facility staff and NGO staff working with pregnant and young mothers. These informants were assumed to be well-informed about the experiences, reactions, barriers and support available for these youth. However, no NGO was identified as working with youth and or supporting them in order for them to access health services in the study districts.

3.7.4 Qualitative research location

Qualitative data collection was conducted in Bushenyi and Kibaale districts in western Uganda. The western region was selected because of poor use of maternal health care services among youth in the region. According to the researcher's quantitative analysis of the pooled 1995, 2000/01, 2006 and 2011 Uganda demographic and health survey data, unmarried youth in western Uganda used ANC infrequently compared to youth in the central region. In addition, as an instrument of the research inquiry and a data interpreter the researcher had to carry out this research in an area where she understands the languages commonly used (Morse and Field, 1996; Britten, 2006; Pezalla et al., 2012; Braun & Clarke, 2013). This helped improve the accuracy of the research since she could understand what was being discussed during data collection. She was able to

listen to the audio recorded interviews, check the consistency of the transcribed data and make corrections where required.

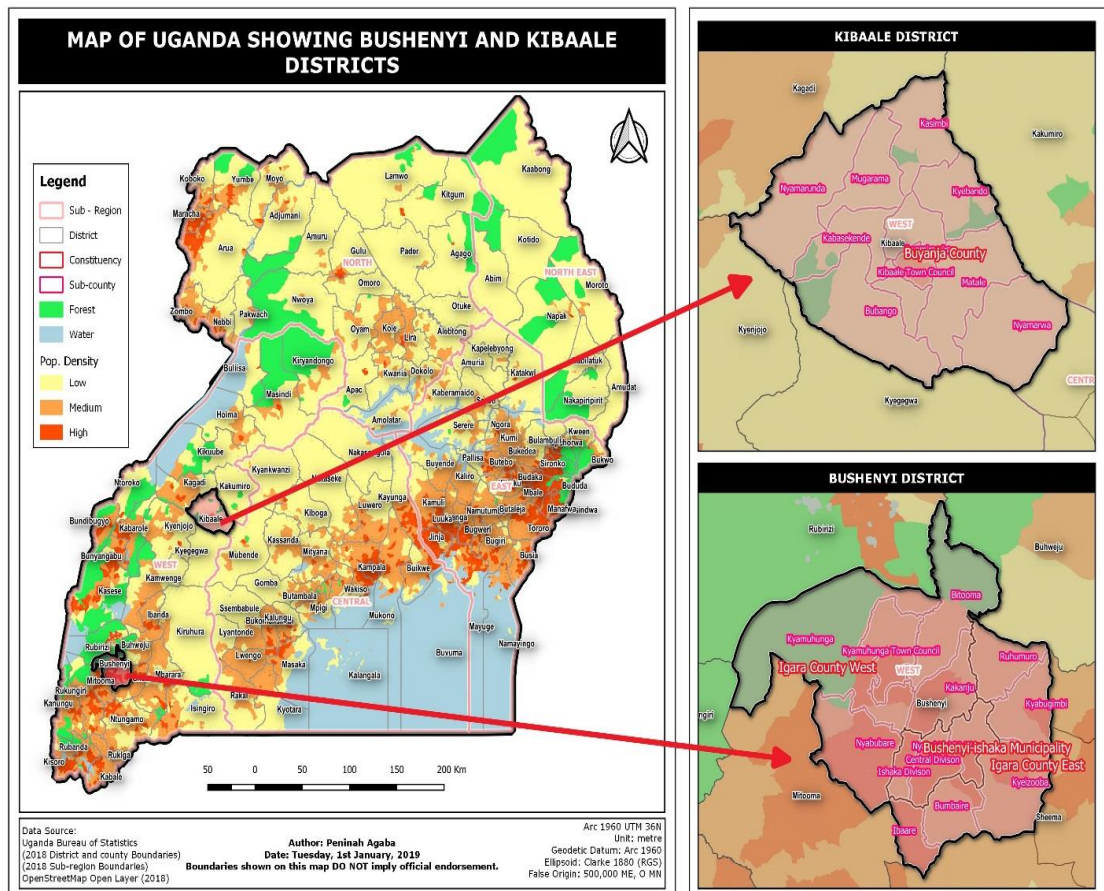


Figure 3. 2: Map of Uganda showing Bushenyi and Kibaale districts as at 1st July 2017

3.7.4.1 Kibaale and Bushenyi districts

Kibaale is a district in western Uganda comprised of one administrative constituency and 11 sub-counties. It borders Kagadi, Kakumiro, Mubende, Kyegegwa and Kyenjojo districts. It has a total population of 140,947; 70,815 males and 70,132 females, yielding a sex ratio of 101 (UBOS, 2017). Sixty-two percent of them are below 20 years. The main economic activity is agriculture which is done by 96.2 percent of the households. Most of the agriculture is for personal subsistence, thus, this population by-and-large has a low economic status (Kibaale District Local Government, 2009).

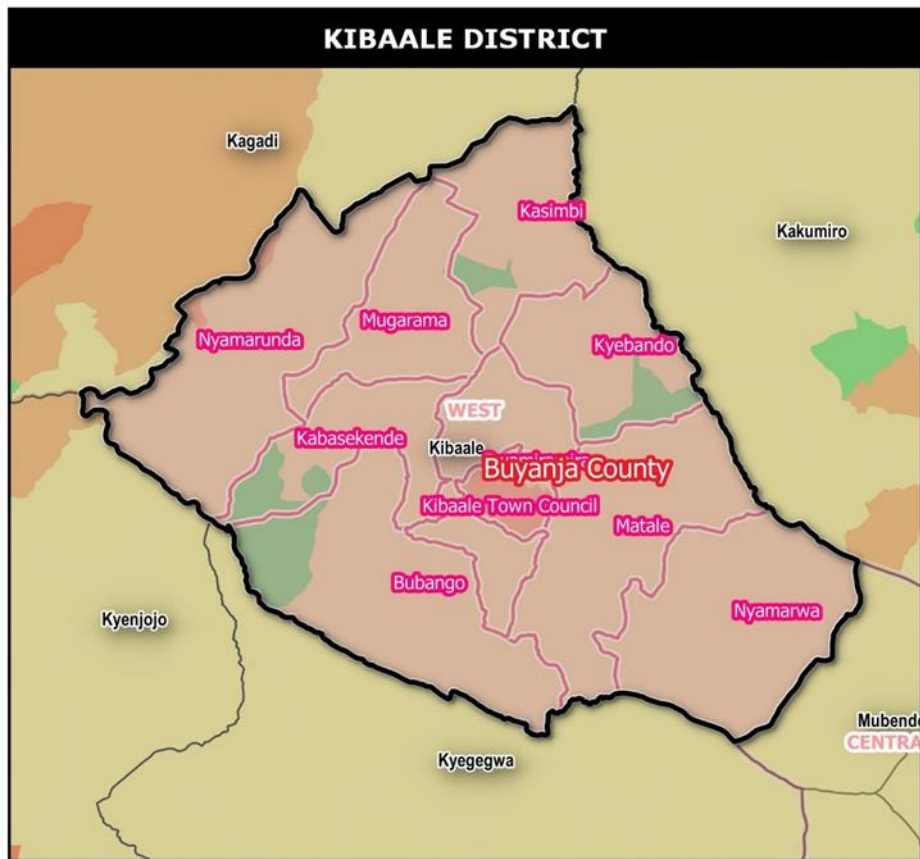


Figure 3. 3: Map of Kibaale showing Buyanja constituency and eleven sub-counties as of 1st July 2017

Bushenyi is also located in western Uganda and borders Rubirizi, Buhweju, Sheema, Mitooma, and Rukungiri districts. It consists of three counties that are further divided into thirteen sub-counties. It has a total population of 234,443 persons, of which 114,207 are males while 120,236 are females; sex ratio of 95. Fifty-seven percent of the total population is below 20 years of age. The main economic activity is farming where 82.9 percent of the households are crop growers and 85.2 percent rear animals (UBOS, 2017).

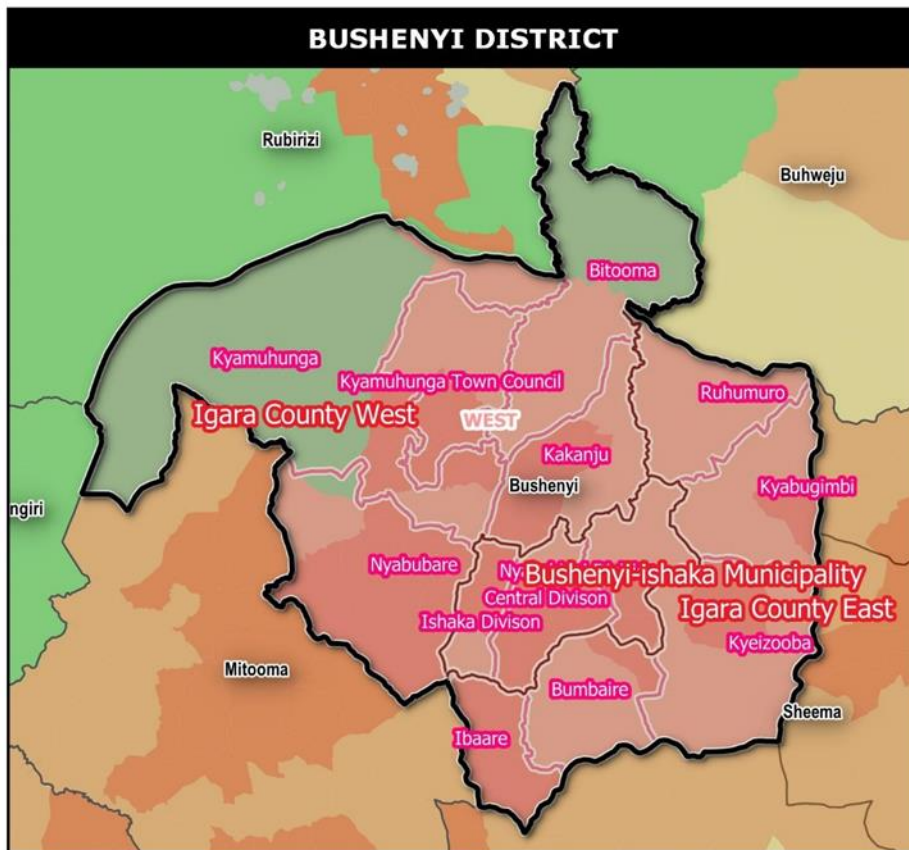


Figure 3. 4: Map of Bushenyi showing three constituencies and thirteen sub-counties as of 1st July 2017

According to the 2014 Uganda population and housing census, Kibaale has a low literacy rate (76%) compared to 80.3 percent in Bushenyi. Eighteen (18) percent and 10 percent of the girls aged 12-17 years had given birth in Kibaale and Bushenyi district compared to 6.5 percent of the girls in Uganda as a whole (UBOS, 2017). Kibaale has a high teenage pregnancy compared to Bushenyi district that is classified as a middle rate district (MOH, 2016a). Kibaale is a predominantly rural area with only about one percent (1,340) of the population living in urban areas compared to 17.6% in Bushenyi.

The census further shows that more than half of the population (53.5%) live five kilometres or more from any health facility and seventy-two percent live five kilometres or more from the public health facility in Kibaale district compared to only 5.4 percent and 21.7 percent in Bushenyi district respectively. The poor roads plus long distances hinder access to maternity care and all interviewed youth reported public health facilities as their source of maternal health care services in both districts.

The level of ownership of a radio was above the national average (52%) in both districts (70% in Kibaale vs 75% in Bushenyi). The radio was the main source of information for

both (72%). Thirty-one percent of the persons aged 10 years and above owned mobile phones (40.4 males and 21.3 females) and 2.8 percent had access to the internet (3.9% males and 1.7% females) (UBOS, 2017) in Kibaale district. Comparatively, more than half (59.5%) of the persons aged at least 10 years owned a mobile phone (62.3% males and 57% females) and 19.8 percent had access to the internet (23.3% males and 16.8% females) in Bushenyi (UBOS, 2017). This is associated with the findings of the current study where some youth did not own phones and preferred to receive health information through the radio or Village Health Teams because of easy access.

Present day Bushenyi and Kibaale districts were created in July 2009 and July 2016 respectively. In a bid to take services closer to the people, the parliament of Uganda has split large districts into small administrative areas. Former Bushenyi was made up of five counties of Buhweju, Sheema, Bunyaruguru, Mitooma, and Igara. These former counties make up present day Buhweju, Sheema, Rubirizi, Mitooma, and Bushenyi districts respectively. Kibaale was composed of three counties of Buyaga, Buyanja, and Bugangizi which constitute present day Kagadi, Kibaale, and Kakumiro districts respectively. Trend data for the two districts is not given because a comparison of statistical data shows different patterns due to changes in administrative units, which subsequently impacts on demographic and socio-economic characteristics trends.

3.7.5 Sampling

Districts were purposively chosen where one district was somewhat developed and the other was a low-developed and remote setting; one with moderate (Bushenyi) and the other with high (Kibaale) teenage pregnancies respectively (MOH, 2016b). The sample was easy to find in Kibaale district due to higher levels of pregnancies among unmarried youth than in Bushenyi district. In each district, three sub-counties were chosen, two were rural and one was urban. Participants were drawn from any parish and village within that sub-county. In Kibaale district, Mugarama and Matale sub-counties were the rural sub-counties and Kibaale Town Council was the urban one. In Bushenyi district, Kyeizoba and Bumbaire were the rural sub-counties and Bushenyi-Ishaka Municipality was the urban sub-county. A combination of rural and urban areas gave a complete representation and enhanced the rigour of the research.

Purposive sampling was used to identify potential study participants. Knowledgeable participants to get in-depth information and insights for the research to answer the research questions were chosen as suggested by Patton, (2002), Tashkkori & Teddlie,

(2003), and Clark & Creswell, (2008). This sampling was done to get youth who were unmarried and were pregnant or had given birth within three years before fieldwork to reduce the recall bias. Snowballing is recommended for hard-to-reach populations (King & Horrocks, 2010; Braun & Clarke, 2013). It was relied upon because this population of unmarried youth who are pregnant or gave birth is hard to access. Social networks were utilised and helped, for example, in one FGD in Kibaale, the researcher and the village health team member had identified four participants for the discussion a day before. Through participants' relations, two more youth were informed and took part in the FGDs. The participants who were recruited through friends were active participants and contributed to the discussion (FGD seven). I planned to recruit youth through local organisations that work with pregnant and young mothers and from youth centres. However, there were no such organisations in the study districts.

3.7.6 Participant recruitment

Local leaders (Village health teams) and adolescent social informal networks in the study areas helped in identifying study participants. I moved with the Village Health Teams (VHTs) to households they knew had a youth who is pregnant or gave birth while unmarried. Youth were screened for the inclusion criteria. We also asked the youth if they knew other girls in a similar situation and we would contact them about participation. During the participant recruitment, the potential participants were informed of the study purpose and advised about informed consent. One IDI participant (participant two) was recruited from a health facility as she had come to access ANC services.

Youth who were selected for in-depth interviews would agree on the day and convenient time when research assistants could come to conduct the interviews. Youth selected for FGDs would be requested to participate in one at an appointed place and time. Participant recruitment was usually a day or two days before the interview, and it was the researcher's responsibility. IDI participants included some youth who could not make it to the FGD venues but were able to have individual interviews with the research team. Three IDI participants were selected during FGDs. They talked about some issues that needed detailed follow-up. During youth participant recruitment, parents were also requested for an interview at an arranged time.

The health providers are the only key informants interviewed in this research. Health centres were identified during interviews and FGDs. Youth were asked about the health

facilities where they accessed maternity services from. Health providers were identified from the health centres that youth mentioned to have accessed maternity care from, and we visited those that were located in the research districts. The research team visited health centres that were in the study districts due to the absence of ethical clearance from other districts.

3.7.7 Sample size

Eight focus group discussions (FGDs) with female youth aged 15-19 years in Bushenyi and Kibaale districts in Uganda were carried out. Four FGDs were completed in each district. These were comprised of young mothers and pregnant youth. Fourteen in-depth interviews with unmarried youth were carried out in order to get a deeper understanding of their experiences during the maternity period. Seven IDIs with parents of the youth who took part in the IDIs or FGDs were also completed. Seven KI interviews were carried out with health facility staff providing maternity care in the health centres that were indicated by youth and that are in the study districts. The information obtained through parents' in-depth interviews and key informant interviews compliments information from youth interviews to get a deeper understanding of the experiences, perspectives, and support available for the youth.

Interview studies commonly have 5-25 participants due to time and resources availability (Kvale, 2007). "The rule of thumb is to plan for three to four groups with any one type of participants" (Krueger & Casey, 2000: 26). A sample of three for each category was sufficient for a phenomenology study in order to generate sufficient data, to enable in-depth exploration and engagement with the data while detecting any convergence and divergence across the sampled groups. A sample of three was also sufficient for the generation of themes (Braun & Clarke; Smith and Osborn, 2003; Smith, 2008). This is because new information gained from extra FGDs or interviews decreases (data saturation) as more interviews are conducted (Clark & Creswell, 2008; Kvale, 2007; Morgan, 1997).

3.7.8 Qualitative research participants

Focus Group Discussions (FGDs) were held with unmarried youth aged 15-19 years who had a live birth within the last three years before fieldwork or those who were pregnant. In-depth interviews using un-structured open-ended questions to encourage the respondents to give detailed answers were carried out. The reason for considering a reference period of three years was to reduce on non-response due to memory lapse.

Memory lapse was observed from previous studies that utilised secondary data especially Demographic and Health Surveys as a limitation for the quantitative data analysis because of a long reference period of five years. More in-depth interviews were carried out among parents of these youth to get experiences, reactions, and support rendered to youth during the maternity period.

Key informant interviews were carried out among midwives and nurses who participate in maternity care provision for the youth and are in the research districts. This was to find out about health care providers' attitudes, perceptions and support rendered to unmarried youth. They were also able to provide insights into the experiences of youth during the maternity period in the communities. This study found only nurses and midwives offering maternity care; there were no other staff that offered maternity care in the visited health centres, for example, no gynaecologist was interviewed. This is similar to what was found in the Ministry of Health reports that higher level medical staff were in short supply especially in rural areas (MOH, 2010, 2014, and 2017).

It was not easy to get enough samples for adolescent partners and youth support organisation staff that this study had proposed to interview. This was because partners were hoped to be recruited through youth, but because some had moved to far off places due to fear of the consequences of impregnating girls or youth had lost contact with them, this was not possible. Moreover, due to the abuse some youth went through, they did not want anything to do with the partners, while some feared that if the partners knew that they directed us to them, they would be mistreated, and/or partners might stop the support they were providing. There was no known youth support organisation that supported the pregnant youth and young mothers. The organisations that were identified from the district community development offices were not helping with maternity care access and none was specifically working with the youth.

3.7.9 Qualitative research instruments

Interview guides were used to collect data and included questions relevant to the study research questions. Interview guides were specifically designed for this study because there are no validated tools for this aspect of the study. To ensure consistency, the local research ethics review committee asked the researcher to translate the tools to the local languages. Due to low literacy levels in Uganda, community level interviews are usually conducted in the local languages. The research tools were translated into Runyoro and Runyankole languages. Runyoro is the main language spoken in Kibaale,

whereas Runyankole is mostly used in Bushenyi district. The researcher's mother tongue is Runyankole and she knows Runyoro to a great extent.

During data collection, some themes that needed further investigation came up and were included in the tools. It is advisable to be flexible with the research tools because qualitative research is meant to capture accounts of participants' experiences, not answers to specific questions in a survey (King & Horrocks, 2010; Marshall & Rossman, 2014). At the beginning of data collection, research tools did not include questions on background characteristics and maternity care use among youth, but as fieldwork progressed, through being present during interviews and research de-briefs, the researcher realised that these questions were needed in order to know the characteristics of study participants, level of use of the services and for easy flow of the questions. This is the reason some background and maternity care use information is missing in table 6.1 and table 6.2 in chapter six.

3.7.10 Research team

The research team included the researcher and four research assistants with vast experience in qualitative data collection. These were all females, two were native Banyankole and two were native Banyoro who understand Runyankole and Runyoro. The research assistants were also fluent in English. The research assistants carried out all the interviews and focus group discussions and the researcher supervised them. The researcher would listen-in to some of the interviews and all focus group discussions. Research assistants would help clarify the information to participants in instances when participants had difficulty in understanding what the researcher had communicated. Since a qualitative researcher is a research instrument (Braun & Clarke, 2013), she would also ask for clarification of some of the issues that came up in interviews and FGDs that she did not understand.

3.7.11 Recruitment of research assistants

Recruitment of research assistants was done through the researcher's personal contacts that are involved in research. They shared the telephone contacts of the people they recommended. The researcher contacted them and had a telephone interview on qualitative data collection methods and their experience in carrying out qualitative data collection. The researcher requested curriculum vitas from those who had promising knowledge and experience in qualitative data collection, and she chose four of them.

3.7.12 Training of research assistants

The research assistants underwent an intensive training to become conversant with the research objectives, research tools and their impact on the study outcomes/results. The researcher took them through how to conduct FGDs and IDIs, research ethics and creating rapport. This is because a good rapport encourages participants to open-up comfortably (King & Horrocks, 2010). We went through the research tools and role played them.

We separated into two groups by language and compared the local language translated tools with the English version to check for translation consistency. Identified inconsistencies were agreed on and amendments were made. I explained to them the target study population, emphasizing the target age group and marital status. Knowing the right age group helped especially during FGDs where VHTs would recruit unmarried women regardless of age because they thought we would support them with basic needs. The VHTs kept insisting that we include older persons because they were also poor and could not afford the basic needs for themselves and their children. This was regardless of the intensive explanation that the purpose of the study was purely for research. The VHTs recruited more participants after the initial recruitment drive because we usually got less youth than the maximum numbers for the FGDs. Research assistants and the researcher would ask some screening questions before starting the FGDs to establish the right age for the participants and those who did not qualify would be given refreshments, some transport costs were refunded, and they were politely requested to leave.

3.7.13 Role of the researcher and research assistants

All ethical clearance by the local institutional review board, Uganda National Council of Science and Technology (UNCST) and the district and all lower local government offices was done by the researcher. The researcher was solely responsible for the recruitment of all research participants. During FGDs, one of the research assistants was the note taker and the other was the moderator. The researcher was present at all FGDs and some in-depth interviews. The researcher would note some issues that needed more probing and correction and would discuss them with the moderator during the break. Additionally, the research assistants interviewed all in-depth interview participants and all key informants. The research assistants transcribed the interviews in word by harmonising the notes taken and the audio recorded interviews. An individual who

understands both languages verified the quality of the transcripts. The researcher verified the transcripts too as she listened to the audio recorded interviews during data analysis.

3.7.14 Validity and reliability of qualitative data

Validity is the ability of research tools to capture what it was intended to measure to answer the research questions. This is ‘the trustworthiness, credibility or authenticity of results’ (Creswell & Miller, 2000 in Creswell, 2014:201). Research tools were developed in close consultation with supervisors and another independent reviewer to check the appropriateness of the questions to achieve study objectives. The combination of methodological and data triangulation improves the validity of data. Methodological triangulation is using alternative approaches to questioning. On the other hand, data triangulation is collecting data from different populations (Morse, 1991; Creswell, 2014). This helps with checking the accuracy and stability of interviewee statements which in turn helps check consistency for instance if themes are developed based on data from different sources and perspectives of different participants, this increases the validity of the study (Creswell, 2014). FGDs, in-depth and key informant interviews were employed to solicit data from unmarried youth, parents and health providers. Triangulation also offers an opportunity to understand the relationship between different approaches. The detailed description of the research process provided in this study helps verify the validity of the findings.

Reliability refers to “how consistent results are” (Kvale, 2007:36), and is measured by tools being able to collect similar information from participants. Data reliability is the lack of researcher or investigative bias to ensure the confirmability of the data. Researcher bias can be introduced in the research by use of structured questions with closed questions (Roulston, 2010; Kvale, 2007). There are various strategies to ensure confirmability. The current study achieved it using semi-structured interview guides with open-ended questions. Four research assistants were employed to collect the data. Rigorous training of the research assistants was undertaken to clearly understand the research objectives and were able to familiarise themselves with the research tools. This helped them in the way in which they asked questions, probed and prompted for relevant information, as well as building a rapport. This ensured that they get honest responses from participants as was noted by King & Horrocks (2010). Interview guides

were also translated to the local languages, to ensure questions are asked in a comparable way.

At the data processing stage, transcripts were checked by the researcher and an independent person conversant with the two languages to make sure there were no mistakes. Definition of codes was done by the researcher alone in close consultation with the supervisors. The research was conducted in areas where the researcher knows the languages and therefore understands all that was said during the interviews and discussions. Where she had difficulty understanding, she sought clarification. This is because qualitative research and interpretative inquiry is where the researcher interprets what s/he sees, hears and understands (Braun & Clarke, 2013). Care has been taken to document the detailed account of the research process so that this study can be replicated, as Roulston, (2010) suggested. Copies of interview guides are available on request. The researcher also gives her positionality and a reflexive account of her actions, detailing her preconceptions and prior experiences. Her characteristics like gender, culture, history and socio-economic status that might have influenced the study from beginning to the end are also articulated as was suggested by Arthur et al., (2007) and Creswell, (2014).

3.7.15 Data collection

Data collection was done between November and December 2017 for a period of one month. This included conducting FGDs, key informant and in-depth interviews. These took place after clearance from a local Institutional Review Board, registration of the study with Uganda National Council of Science & Technology (UNCST), and after obtaining permission from district and other local government authorities. Data collection was done by research assistants with vast knowledge in qualitative research. During the research, key topics that came up were noted and used as probes for the next interviews. Therefore, changes were made to the semi-structured research guides during the research process.

All the interviews were audio recorded with a digital audio recorder and no participant declined to be audio recorded. Audio-recorded interviews ensure that the interviewer is not distracted by having to write the responses. Most importantly, recording allows the researcher to return to the data in its original form as many times as is required during transcription or interpretation of the data (Braun & Clarke, 2013). Recording helps capture the respondent's exact words verbatim and important information is not lost

(King & Horrocks, 2010). Recording helps to create rapport so that the interviewer focuses on the respondent (Braun & Clarke, 2013), and the topic of discussion (Kvale, 2007).

Back-up of recorded data is advised to avoid loss of the collected data (Kvale, 2007; Roulston, 2010). Copies of the digital audio-recorded information were saved on a laptop every day to avoid loss of recordings. Limited internet connectivity in the research areas would not allow cloud storage of recordings, but this was done immediately after fieldwork completion. All the interview conversations were audible, and interviewers kept requesting mumbling interviewees to speak up, as recommended by Kvale (2007). Interviewers also took brief notes during interviews, for reference in case a recorder failed. All the interviews were successfully recorded; we used two recorders specifically during FGDs. Interviewers used their mobile phones as back up during interviews.

3.7.16 Data transcription

Transcription of interviews is another important phase in qualitative data because it affects data analysis quality and how we represent the research participants (Roulston, 2010). It was done by research assistants, each transcribing her administered individual interviews or moderated FGDs. Some interviewers had transcribed interviews word-for-word, including non-verbal communication. Others had edited interview transcripts and presented summaries which altered what was originally said and which had the effect of changing the meanings. Therefore, the researcher listened to audio recordings and edited the transcripts accordingly to make sure all transcripts are transcribed verbatim. This is because phenomenology requires verbatim transcripts (King & Horrocks, 2010). Phenomenology analysis ‘focus is on words spoken by participants – *what* was said rather than *how* it was said’ (Braun & Clarke, 2013:169). This was followed by some ‘tidying up’ of transcripts to aid comprehension carefully so as not to distort the meaning (King & Horrocks, 2010:149) and to make a good representation of the participants (Braun & Clarke, 2013). The oral speech was turned into meaningful written text which increased the reliability of the research assistants’ transcribed data (Kvale, 2007). The researcher annotated the interviews, leaving out some of the non-verbal sounds, interviewers’ utterances used to show active listening or continuers, pauses and stressed words into a more formal written style and ‘a readable public story’ (Kvale, 2007:95).

Researchers like Temple and Edwards, 2002 and Temple and Young, 2004, recommend that data translation steps should be presented and are central to the representation of data (Roulston, 2010:108). In this study, data collection was in the two local languages and interviews were transcribed directly into English. Therefore, data analysis and interpretation were done in English. Some of the expressions that were impossible to translate accurately (especially cultural related information) were presented as original words in the text and their meanings were presented as footnotes.

3.7.17 Qualitative data analysis

There are several methods used to analyse qualitative data including thematic analysis, grounded theory, discourse analysis and Interpretative phenomenological analysis. The purpose of this qualitative study was to identify the lived experiences and support available to unmarried female youth aged 15-19 years during the maternity period; at their homes, in the community, and at the health centres from their own positions (Van Manen, 1997; Marrsan, 2002; Polit & Beck, 2008; Creswell, 2009, 2012; Braun & Clarke, 2013). To highlight the feminist approach to explore the lived experiences of youth, the thematic Interpretative Phenomenological Analysis (IPA) was chosen over other methods like discourse analysis and grounded theory mainly because IPA is able to explore the intricacies of lived experiences during the limited time for the doctoral research.

Van Manen's (1997) three-step approach of analysing phenomenological data was followed to identify themes in this study. It included: firstly, the wholistic approach. Secondly, the selective or highlighting approach and lastly, the detailed or line-by-line approach (Polit & Beck, 2008; Roulston, 2010). The researcher read the whole text and attempted to capture the meaning of the text and then wrote a text to express this meaning or codes. She then highlighted statements or phrases that appeared essential to the experience, perspectives and support. Finally, she analysed each sentence or sentence cluster to reveal the experiences being described.

The audio recorded interviews were transcribed by research assistants. The researcher read the verbatim transcripts while listening to audio interviews to ensure all content was captured and to acquire a close understanding of the data. The researcher noted preliminary codes that stood out in a notebook and in a different word file. Lengthier transcripts were reviewed several times, and this helped to make better sense of these transcripts (Smith & Dunworth, 2003; Smith & Osborn, 2004).

After attaining a general sense of the transcripts, the researcher revisited the transcripts to determine the themes more accurately. The researcher divided the emerging themes into meaning units/codes relevant to the topic of analysis (Smith & Dunworth, 2003; Roulston, 2010). Each code was highlighted in a different colour in the transcript and it meant a unique topic of the participant's experience and support during the maternity period. Related units were highlighted with the same colour in different transcripts. The codes were applied to all the transcripts and new codes that came up in subsequent transcripts were added to the list of codes. The data were coded into distinct categories that were later grouped into related themes that describe the core commonality and structure of the experience (Smith & Dunworth, 2003; Starks & Brown Trinidad, 2007; Smith et al., 2009; Roulston, 2010; Braun & Clarke, 2013). This was followed by an interpretative analysis, synthesis and grouping of themes using participants' words to create the blended story of the youth experiences (Roulston, 2010). The entire data analysis required the researcher's total immersion in the data with honesty and attention to her own perspective, pre-existing thoughts and beliefs which she had to 'bracket off' (Bourdieu, 2004). The researcher did not employ independent coders as researchers in the literature have suggested (Braun & Clarke, 2013; Roulston, 2010; Smith & Dunworth, 2003). However, she developed the themes in close consultation with the supervisors.

3.8 Ethical considerations

Ethics as defined by Edwards & Mauthner (2002:16) 'concerns the morality of human conduct' and in social research, it refers to the 'moral deliberation, choice and accountability on the part of researchers throughout the research processes (as cited in King and Horrocks, 2010:104). Ethical principle is concerned with researchers preserving the well-being and dignity of participants and protecting them from harm (Kvale, 2007). The ethical responsibility during our research is to both our study participants and our research audiences such as academic communities, and policy makers (Braun & Clarke, 2007; King & Horrocks, 2010). Research ethics approval improves the credibility and scientific value of the study.

3.8.1 Ethics approval

Ethics approval before carrying out research with human beings requires meeting certain ethical standards. These ethical standards also apply to most formally established research ethics committees and institutionalized procedures to ensure that all

ethical guidelines are met and the rights and interests of those participating in this study are protected. Thus, the proposal for this study was reviewed by the School of Education and Social Sciences Ethics Committee at the University of Hull. Study approval was sought from a local Institutional Review Board in Uganda before the commencement of the study. The researcher submitted the research proposal as well as a comprehensive response to the ethical issues to an ethics review board in Uganda. The protocol included a range of ethical issues and how they would be addressed. They were reviewed, and the review board got back to the researcher to clarify some of the issues that were not clear. The researcher responded to their suggestions satisfactorily, and the study was approved in October 2017. The study was then registered with Uganda National Council of Science & Technology (UNCST).

Authorisation was sought from the two district local governments as Roulston (2010) suggests that lower administrative permission should also be sought. The research team reported to lower level authorities with letters of study clearance from the national review committee and the district local governments. We also reported to health centre administration and sought permission to interview providers involved in the provision of maternal health care.

3.8.2 Informed consent

Informed consent should be prospective, voluntary and the participant should be fully informed (Kvale, 2007). It should contain information on the researcher, why the participant was chosen, how long the study will take, expected benefits, potential risks and risk management, voluntary nature of the study, any payment involved, assurance of confidentiality, and how the participants will get feedback. A copy of the consent form should also be given to participants (Kvale, 2007; Braun & Clarke, 2013; Rudestam & Newton, 2014). This information was included in the informed consent forms in.

Seeking consent from the right person helps to reduce harm and risks to participants for participating in the research (King & Horrocks, 2010). An informed consent was explained to participants during recruitment and during the introduction/opening of the interview. An assent form was prepared for young adolescents 10-14 years to allow for their parents' consent and signature, but this study had no participants less than 15 years of age. Informed consent was sought from the youth themselves because they were all above 15 years, however, we sought permission from their parents or guardians.

The interviewer/moderator explained to the participants why they have been chosen to take part in the study; what is required of them; the voluntary and free will to participate in the study and the risks and benefits of taking part. There was no direct benefit for participants to take part in the research study. Individuals were told that they could withdraw at any stage with no consequences to the care they were currently receiving from the health facilities. No cases of participant withdrawal occurred in this study as King & Horrocks (2010) observed that in most cases, participants rarely withdraw when they have consented to participate in an interview. Participants had to consent to the use of audio recorder during the interviews and FGDs and all study participants agreed to be audio recorded. Consenting to the audio-recorder helps the participants to be comfortable being recorded (King & Horrocks, 2010).

Participants were handed copies of the consent forms which were read to them and the literate could read along with the interviewer or moderator. They were required to accept and sign the informed consent forms before participating in the study as was done in other studies (Yow, 1994; cited in Kvale, 2007; Kelly, 2012). All participants signed the consent forms. They signed two copies; one was retained by the research team and the other copy was theirs in case they needed to refer to it as advised by Braun & Clarke, (2013). All research participants signed the consent forms. An eyewitness was required for the illiterate participants to confirm that what was explained to them appeared in writing on the consent forms. During the FGDs, a literate participant witnessed for the illiterate FGD participant. Eyewitnesses also had to sign the consent forms. Key informants were informed about the study on the day of the interviews and were required to accept and sign consent forms. Informed consent was sought from individual health providers after the health facility administration had granted the team the permission to carry out the study.

3.8.3 Confidentiality, privacy and anonymity

Research among this group of youth involves ethical concerns regarding confidentiality, privacy and reducing the risk of double-victimisation of respondents as they relive their experiences. The research team tried to take care while asking sensitive questions by ensuring privacy and by building rapport between interviewer and respondent. Rapport with the interviewer, confidentiality, and privacy are all keys to building respondents' confidence so that they can safely and comfortably share their experiences with the interviewer (King & Horrocks, 2010). Self-presentation in a culturally acceptable way,

asking questions and probing in a friendly way also builds rapport (King & Horrocks, 2010; SAGE Publications, 2008). All participants were encouraged to contribute in the conversation during FGDs, but were not forced to respond to all questions, that is, they could choose not to respond to a question with which they are not comfortable with. More so, in-depth interviews were carried out in privacy after obtaining consent from the participants and permission from their parents or guardians. Drinks were provided during FGDs in order to make participants comfortable and enhance participation as was proposed by Braun & Clarke (2013).

Assurance was given to participants that all information obtained would be confidential and anonymity would be maintained at all times. Anonymity and confidentiality were maintained by assigning identification numbers to participants that are used during data analysis so that participants are not identifiable when statements from their interviews are presented (Kvale, 2007; Burton & Bartlett, 2009; King & Horrocks, 2010; Braun & Clarke, 2013). The recorded data and interview transcripts are kept safely and are only accessed by the researcher and the supervisors. This is because voices are hard to anonymise and are more easily recognised than printed data (Braun & Clarke, 2013). The computer entered data is password protected with support from the Hull University ICT department staff. Confidentiality was also achieved by making sure interviewers do not interview related or known participants to reduce bias due to the depth and sensitivity of the stories of participants as was noted by Braun & Clarke, (2013).

3.9 Dissemination of the study results

Stakeholder meetings within the research districts will be conducted so that policy makers can design appropriate policies for persons who are directly affected (youth). More stakeholder meetings with policy makers from national organisations and line ministries shall be held in Kampala. I have presented my research findings at some conferences and will present more findings at national, regional and international conferences. I will share copies of my thesis with Mildmay Uganda Research Ethics Committee and Uganda National Council of Science and Technology. The thesis will be digitised in the British Library ETHOS system and Hull Library-Hydra portal and accessible to all with internet access. Peer-reviewed journal articles will also be produced out of this research.

3.10 Relationship of the researcher to the research

As a case in social science research, I would like to say a little bit about myself as a researcher in relation to the research. This is to enable the readers to know the nature and source of potential biases in this study.

I am a female, born to primary level educated parents in a rural area in Bushenyi district, western Uganda where I spent most of my early life. The main economic activity was farming while my father was a casual worker in a beverage factory and was away from home during most parts of the year due to work. My primary and secondary education was in western Uganda. My University education was in Central Uganda at Makerere University and my first degree was in Population studies between 2003 and 2006.

After my first degree, I worked as a part-time research assistant at The Steadman research group and later as a Teaching Assistant in the Department of Population Studies, Makerere University, where I was also engaged in research activities. Holding a research position where I was directly involved in needs' assessment in most deprived communities brought me closer to a clearer appreciation of how women were culturally deprived of enjoying their rights and participating productively and influentially in issues affecting their destiny. Working in rural settings in western Uganda districts exposed me to stories of young and old women whose deprivation and exclusion has progressively come to be accepted as a cultural norm. Many young females were engaged in sexual activities and entering unions at an early age without access to proper reproductive health services, including access to family planning. These women had poor knowledge of the fertile period, including those who said were using it as the family planning method and this led to repeated and unwanted pregnancies. The experiences I witnessed in the field inspired me to do my graduate studies in demography and carry out my research on factors for age at first marriage among women in Western Uganda. I have been involved in research and academia at Makerere University, Uganda since 2007.

I grew up witnessing home deliveries which were common among women of all age groups with recent improvements due to sensitisation and improved service availability. My mother never had any ANC visit and all her nine births were successfully achieved in our home with the assistance of her extended family. This story is true for most women of her age. Women would be taken to hospital in case complications arose

during childbirth. Given the poor transport means, some women give birth on the way to the hospitals and there are specific names given to children born on the way to hospital for instance Rwamuhanda among Bakiga and Kamuhanda among Banyankole, Banyoro and Batoro. The transport means have improved over time from wooden stretchers to motorcycles in rural areas. These stretchers would be carried by men in the neighbourhood over long distances and this would cause delays compared to motorcycles. There are some remote and hilly areas where transport has not improved. In 2012, while working with an NGO and conducting assessments of health centres in terms of their preparedness to provide anti-retroviral therapy to HIV/AIDS patients, I witnessed a woman in pre-child labour pains who was brought to the health centre on a wooden stretcher.

My first close encounter with unmarried pregnancy was in 1999 while in secondary school when I lost a childhood friend to an abortion and wondered why she could not keep the pregnancy. I have seen some other girls get pregnant in the community and have heard what they go through. In 2012, a married friend who got a ‘too close pregnancy’ commented that “unmarried females who keep the pregnancy to term are indeed strong” because she felt shame. That is when I realised that unmarried pregnant girls have their unique experiences from those who marry or are married. The continued interaction with these young girls during research and in my communities sparked my interest to find out more about their use of maternal health services and their experiences and support during the maternity period.

As a Ugandan woman, I somehow know what it is like to become pregnant while unmarried. I know Runyankole because it is my mother tongue and understand Runyoro to a large degree. I grew up in Bushenyi district and had been to two rural communities in Kibaale district for an extended time doing research before this research study. Being a western Ugandan female, I shared the two characteristics with the participants. I was thus an insider in this study. Participants called us ‘*basawo*’, meaning health workers or nurse. This was useful because participants easily talked to us and they indicated that they prefer health providers who come to talk to them about maternity care within the communities.

3.11 Reflexive statement

This section will provide a brief account of reflexivity for this research and is written in the first person.

I have no personal experience of a pregnancy or childbirth outside marriage but have seen girls who have been pregnant before marriage and some of their experiences. So, I was quite different from the participants because I had never experienced what they passed through. I had done some literature review and therefore went to the field with knowledge of some issues that may affect unmarried youth during the maternity period. However, I had to know that these known experiences were different from some of the participants of this research. I was aware of these differences during the research and I feel I was able to put away this historical experience and knowledge and shared the participants' experiences gathered during the interviews as Bourdieu, (2004) said that the researcher's experiences have to be 'bracketed-off' to get the participants pure experiences. This could partly be due to the training I had before undertaking this research.

Given the sensitivity of pregnancies among this age group and my limited experience in conducting focus group discussions, recruitment of focus group discussions participants was complex. For the first FGD, we had recruited six participants the day before, who consented to attend at an agreed time and venue. This was a rural setting and we agreed to meet in the afternoon, to give them time to first attend to their farms. To our surprise, only two participants came after an hour of waiting. We followed-up the others and managed to convince two to come but their participation in the discussion was limited. We found one was in hiding, fearing that we might want to arrest her and her partner. One of the recruited girls who did not turn-up said that her partner was in prison and that she would not be comfortable taking part in the discussion. We started the FGD a bit late, but it was successful and guided participant recruitment for the preceding FGDs and changes to the FGD guide.

In the FGD guide, I had not included questions on the background characteristics and participants' levels of the use of maternal health care services which I realised were important and then included them for the next FG discussions. During recruitment for the next FGDs, I had to emphasise the purpose of the study and assure them of confidentiality of their responses/ I would transport some participants to the FGD venues to aid timekeeping for the start of the FGD. All in all, interesting information was generated from the FGD participants. They were more open than IDI participants and FGD participants shared their personal experiences as well. Even when questions would be asked about general experiences, adolescents would easily share their

experiences. The preceding FGs did not have any no shows although some participants would come late.

I and the research assistants never gave our reproductive history, we did not tell them whether we had ever given birth, the ages or marital status or any background characteristics. Our knowledge of some aspects of the population and study areas might have influenced our interviewing and probing as what they 'briefly talked about' could alert us to implications that would not be seeming to a researcher unfamiliar with the context (Braun & Clarke, 2013: p 147). This could have also influenced the analysis and interpretation of data.

Also, deeply reading and analysing the experiences of these youth was distressing sometimes. I had to take the researcher out of the research and represent the participants only. Given the intimate relationship that had been built with participants, it creates guilt and now the focus turns to the readers (Braun & Clarke, 2013). During data analysis and writing, it is only the participants' views that are represented. Care has been taken for participants' voices to come out and quotes of what they said are included. Biographic information about participants has also been included in the appendix (Appendix VII) to help readers know the participants for this study and for my research to bring people's lives to a wider audience. I believe this analysis has presented the unmarried youth' experiences during this difficult time; the participants whom I have much respect for. This study has improved my research skills and helped me identify my research interest which I hope to explore further.

3.12 Chapter Summary

This chapter has explained the methods used to answer this study's aims and questions. The chapter also discussed ethical considerations and how the researcher approached them in this study. The chapter focused on topics related to the research design including those related to research participants, location, procedures, instruments and analysis. The positionality of the researcher and a brief reflexive statement are given. The next four chapters present the findings obtained by the methods described in this chapter: chapters four and five cover quantitative findings, while chapters six and seven cover qualitative findings.

4 CHAPTER FOUR: DETERMINANTS OF THE USE OF ANTENATAL CARE AMONG UNMARRIED AND MARRIED YOUTH IN UGANDA BETWEEN 1995 AND 2011

4.1 Introduction

The maternal mortality ratio in sub-Saharan Africa is the highest of all regions of the world at 510 per 100,000 live births, compared to 12 per 100,000 live births in developed countries (WHO, 2015). In Uganda, the maternal mortality ratio has reduced from 506 per 100,000 live births in 1995, to 336 per 100,000 live births in 2016; at least 16 women die each day due to pregnancy and childbirth related complications. (WHO, 2015; UBOS & ICF, 2018). This could be due to poor use of antenatal care especially among certain population groups.

Although the effectiveness of antenatal care to prevent potential obstetric emergencies during pregnancy and childbirth has been questioned, use of antenatal care services has been found to be associated with reduced maternal and child deaths and morbidity (Tsu, 1994; Howlader et al., 1999; Rooney, 1992; Koshar et al., 1998; Villar & Bergsjø, 1997; Carroli et al., 2001; Simkhada et al., 2008) and cessation of substance use (Teagle & Brindis, 1998). Antenatal care use is also associated with better obstetric outcomes through early identification and management of complications (Carroli et al., 2001; Reynolds et al., 2006; Mpembeni et al., 2007). Late start of ANC has also been observed to be associated with poor pregnancy outcomes like low birth weight and premature births (Heaman et al., 2008). In addition, antenatal care enables the provision of preventive health services such as immunisation, malaria prophylaxis, iron supplementation, HIV testing and counselling, leading to elimination of mother to child transmission of HIV (EMTCT) (Carroli et al., 2001; Wehby et al., 2009; Gross et al., 2012; Konje et al., 2018). To benefit from these services and to alleviate potential pregnancy complications, early start and frequent use of ANC is recommended (Van Ejik et al., 2006).

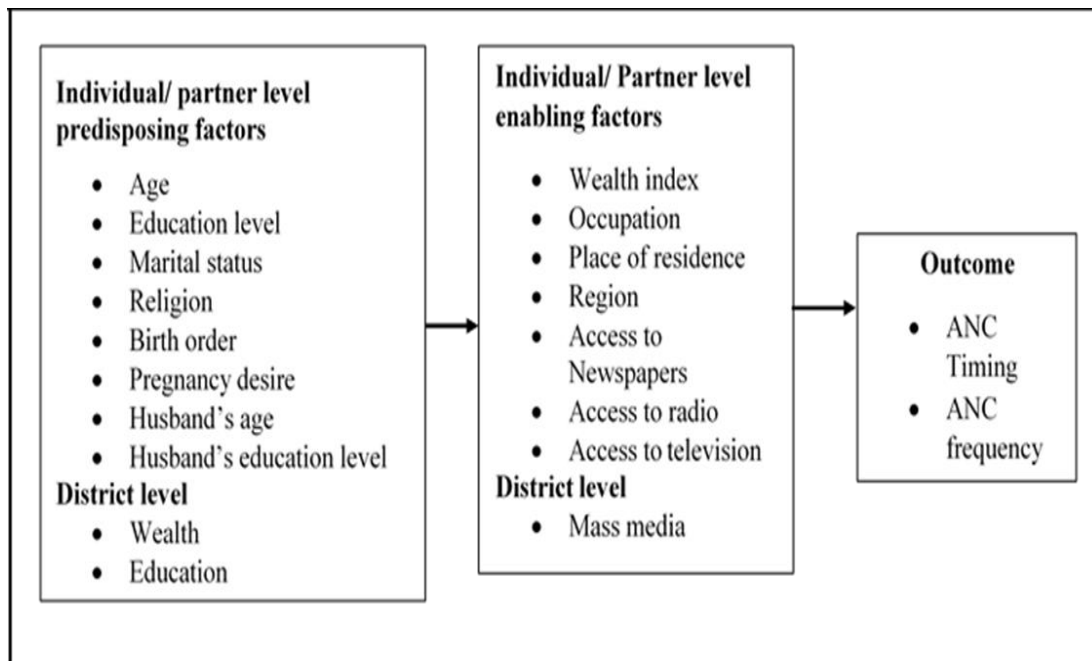
Furthermore, ANC use has been observed to affect the use of subsequent maternal health services, such as use of health facilities at childbirth or assistance by a trained provider (Mpembeni et al., 2008; Gabrysch & Campbell, 2009; De Allegri et al., 2011; Birungi et al., 2011; Sein, 2012; Anyait et al., 2012; Rai et al., 2012; Gross et al., 2012; Singh et al., 2014; Gudu and Addo, 2017; Jacobs et al., 2017), and postnatal care (Birungi et al., 2011; Rai et al., 2012; Sein, 2012; Kumar et al., 2013; Singh et al., 2014). This helps reduce adverse pregnancy outcomes including fistula, maternal and

child mortality (Li et al., 1996; Lee et al., 2001; Yakoob et al., 2001; Bang et al., 2004; Ransmans et al., 2006).

The Focused ANC model of WHO recommends at least four ANC visits, and the first one should be in the first three months of the pregnancy (WHO, 2006; MOH; 2013; MOH; 2016). Historical patterns indicate that achievement of SDG 3.1 will require 91 percent coverage of ever use of ANC, and 78 percent of at least four antenatal care visits together with 81 percent of in-facility delivery as well as 87 percent of skilled birth attendance (Kassebaum et al., 2016). In Uganda, at least one ANC visit among women of reproductive age is almost universal (97%), however, 60 percent had at least four ANC visits in 2016, an increase from 48 percent in 2011, while 30 percent had ANC in the first trimester in 2016 compared to 21 percent in 2011 (UBOS & ICF, 2012; 2018). Ever use of ANC was at 93 and 97 percent among adolescents in Uganda in 2011, and 2016 respectively, while having at least four ANC visits was at 14 percent among adolescents in 2011.

4.2 The conceptual framework

The behavioural model of access to healthcare as proposed by Andersen (1968) guided the analysis of factors for use of antenatal care. This model assumes that the use of medical care depends on predisposing factors, need for health care, and enabling factors. Over time, this model has been revised and updated to include environmental, need and health provider characteristics and health outcomes like consumer satisfaction and quality of life (Aday & Andersen, 1974; Andersen, 1995; Andersen & Davidson, 2007; Andersen, 2008; Andersen et al., 2014). However, due to the inattention to environment, need and health provider factors in Demographic and Health Surveys, they are not included in this analysis.



Source: Researcher's construct

Figure 4. 1: A conceptual framework for the analysis of determinants of antenatal care use among youth

Based on the insights from the literature review, several studies have tried to document the factors that influence the use of maternal health services among youth, but none has done so among unmarried youth in Uganda. Therefore, this study used pooled data from the 1995, 2000/01, 2006, and 2011 UDHS data to examine the predisposing and enabling predictors of the timing and the number of antenatal care visits among unmarried (compared to married) youth aged 15-24 years in Uganda. More specifically, the following research objectives were explored:

- i). To examine the levels and trends in ANC use among unmarried (compared to married) youth between 1995 and 2011
- ii). to find out the predisposing and enabling factors associated with the timing of antenatal care visits among unmarried (compared to married) youth aged 15-24 years
- iii). To determine the predisposing and enabling predictors of the number of antenatal care visits among unmarried (compared to married) youth aged 15-24 years

4.3 Research questions

Research questions: What factors influence the timing and the number of ANC visits among unmarried and married youth?

- What are the levels of the use of antenatal care among unmarried and married youth in Uganda between 1995 and 2011?
- Is there a difference in trends of the timing, and the mean number of ANC visits among unmarried and married youth in Uganda?
- What predisposing and enabling factors influence the use of ANC in the first trimester among unmarried (compared to married) youth?
- Is there a difference in factors that affect the mean number of ANC visits among unmarried (as opposed to married) youth?

4.4 Research Hypotheses

- i). Timing of antenatal care doesnot vary by age of the youth in Uganda
- ii). Education level does not influence the use of ANC in the first trimester among youth in Uganda
- iii). Pregnancy desire doesnot influence the number of ANC among youth in Uganda
- iv). Occupation does not influence the number of ANC visits among youth in Uganda

4.5 Data sources

Secondary analysis of the Uganda Demographic and Health Survey (UDHS) data, which was carried out in 1995, 2000/01, 2006, and 2011 was done. The four surveys were population-based household surveys that used two stage sampling where clusters (Enumeration Areas) and households from each cluster were randomly selected. The Enumeration areas (EAs) for the 1995 and 2000/01 UDHS were drawn from the 1991 Uganda Population and Housing Census (UPHC) sample frame, while clusters for the 2006 and 2011 UDHS were drawn from the 2002 UPHC sample frame. After the selection of EAs, a complete listing of households was completed, and households were then selected with probability proportion to size from each EA⁵.

⁵ Details about sample selection is available in the UDHS reports available online from dhsprogram.com

The data from each of the surveys was analysed to show trends in the use of maternal health services throughout the survey periods. The data from the four surveys (1995, 2000/01, 2006, & 2011 UDHS) was pooled into a single dataset in order to obtain a large sample especially for the unmarried youth to increase statistical power for further analysis. This yielded a sample of 6,018 female youth aged 15-24 years, each one of whom had given birth in the preceding five years before each of the 1995, 2000/01, 2006 and 2011 surveys (Table 4.1). Of these, 581 were unmarried and 5,437 were married youth.

4.6 Variables of the study

This includes both the dependent and independent variables of the study.

4.6.1 Dependent variables

As explained in chapter 3, the dependent variables are;

- i) the number of ANC visits which was treated as a continuous variable and ranged from zero for those who did not have any ANC visit to 20 ANC visits
- ii) ANC timing which was categorised into a binary outcome and those who initiated ANC visits in the first three months of the pregnancy were coded as one (1), while those who never attended or started after the three months were coded as zero (0).

4.6.2 Predictor variables of the study

Several predictor variables have been identified to have an impact on the use of ANC, based on the conceptual framework, previous empirical literature, and their availability in the Uganda Demographic and Health Survey data. These include individual, husband, and district level predisposing and enabling factors relating to demographic and socio-economic factors, specifically age of a woman, parity, pregnancy desire, education level, religion, region and place of residence, wealth index, woman's occupation, frequency of access to radio, television (TV), and reading newspapers and husband characteristics of age, education level and occupation. Contextual district level factors of education level, wealth level and mass media access were developed from the available related population level variables in the datasets, which were ranked and aggregated into three categories of low, middle and high education level, wealth level and access to mass media. The categories for each variable are explained in table 4.2 below.

Table 4.1: Predictor variables of the study

Variable	Categories
Individual and husband predisposing factors	
Age group (ref=15-19)	It is coded into two categories of 15-19 and 20-24 years
Birth order (ref=parity one)	This was coded into two categories including One (1) for youth who were pregnant for the first time and Two (2) for youth who were pregnant for more than one time.
Pregnancy wanted (ref=wanted then)	A dichotomous variable coded as 1 if the youth wanted to get pregnant then and 2 if they did not want to get pregnant any more or those who wanted to get pregnant later.
Age of the husband(ref=15-24)	Husband's age was categorised into three groups of 15-24, 25-29 and 30 and above
Education level (ref=no education or primary education)	It was coded into two categories of no and primary education and secondary and above education levels
Religion (ref=Catholics)	Religion was coded as Catholics, Protestants and others
Education level of the husband (ref=no education)	It was categorised into three categories as no education, primary education and secondary and above education levels.
Individual and husband enabling factors	
Wealth index (ref=poorest)	In UDHS surveys, they do not collect information on income, but household assets information was compiled, and each asset is assigned a weight through the factor component analysis. The scores are summed for each household, and individuals are ranked according to the total score of the household in which they reside. The sample is then divided into five population quintiles with the same number of individuals in each quintile. These are coded as poorest, poorer, middle, richer and richest quintiles
Occupation (ref=not working)	Occupation was categorised into not working, agriculture which included agriculture self-employed and agriculture employees, labourers that is skilled and unskilled labourers and professionals including those in managerial, professional and technical, clerical, sales and services.
Place of residence (ref=urban)	This is coded as urban and rural residence

Variable	Categories
Region (ref=central)	This was recoded into four regions of central, eastern, northern and western regions
Exposure to mass media (Newspapers, radio and television) (ref=no access)	Frequency of access to radio, newspapers and television was coded as no access, less frequent access and more frequent for those who did not access each at all, those who accessed less than once or once a week and those who accessed almost every day respectively.
Husband occupation (ref=not working)	Husband occupation was categorised into the same four categories as for the youth namely not working, agriculture which included agriculture self-employed and agriculture employees, labourers that is skilled and unskilled labourers and professionals including those in managerial, professional and technical, clerical, sales and services.
Contextual district-level factors	These were developed from population level factors into district-level factors using the principal component analysis.
Education level (ref=low)	This is categorised into low, middle and high education level
Wealth level (ref=low)	Low, middle and high wealth levels were developed for this variable
Mass media (ref=low)	Three categories of low, middle and high district mass media exposure were created

4.7 Method of analysis for determinants of ANC visits within the first trimester and ANC numbers among youth in Uganda

4.7.1 Introduction

As explained in chapter three, to find the predictors for the timing of the first antenatal care visit, a two-level logistic regression model was fitted with district at the second level. The multilevel logistic regression equation takes the form:

$$\text{Logit } \Pi_{ij} = \text{Log} \left[\frac{\Pi_{ij}}{1 - \Pi_{ij}} \right] = \beta_0 + \beta X'_{ij} + u_{0j}$$

Where (Π_{ij}) is the probability of youth i , in the j th district accessing ANC in the first trimester. β_0 is the regression intercept, X'_{ij} are vectors of individual or district level

covariates; β is the associated vector of estimated parameter estimates, and is shared by all districts, while the random effect u_{oj} is specific to district j .

In addition, with details in chapter 3, multilevel linear regression was used to find factors for ANC numbers among the unmarried and married female youth. Several linearity assumptions were carried out and it was observed that the number of ANC visits did not violate the most crucial assumptions of normal distribution of either residuals or linearity between variables and homoscedasticity (results not presented). Some outliers were identified but these do not affect the outcome although they may make the model unstable. The multilevel linear regression equation takes the form below;

$$y_{ij} = \beta_o + \beta_{ij}x_{ij} + u_{oj} + \varepsilon_{ij}$$

Where y_{ij} is the multilevel regression model for the number of ANC visits for person i in district j , β_o is the regression intercept, x_{ij} are vectors of the individual or district level characteristics. β_{ij} is the vectors of estimated parameter coefficients, and is shared by all districts, while the random effect u_{oj} is specific to district j and ε_{ij} is the error term at individual and district levels.

The effects of individual-level and district-level determinants for the use of ANC in the first trimester and the mean number of ANC visits were reported in terms of odds ratios and estimates respectively, whereas the measures of district variation in the use of ANC (random effects) are represented by the intra-district correlation coefficient (IDC) and variance partition coefficients (VPC). The Intra-district correlation shows the proportion of the total unexplained variation in the outcome that is attributable to district level factors (Field, 2009; Rasbash et al., 2009). It is a measure of the degree of dependency or similarity or homogeneity of individuals in the same district (Kreft & de Leeuw, 1998)

4.8 Levels of antenatal care use among youth

The univariate analysis shows the levels of the use of antenatal care and the percentage distribution of youth by demographic and socio-economic variables.

4.8.1 Levels in the use of antenatal care among unmarried compared to married youth between 1995-2011 in Uganda

Most of the youth who had recent births received antenatal care when they were pregnant with their last child, and the married youth used ANC (95%) more than the unmarried youth (93%). Of those who had received ANC, half of them had ANC 1-3 times while the other half had at least four ANC visits among both groups. Levels in the use of ANC within the first three months of the pregnancy were low for both married and unmarried youth, but a slightly higher proportion (18.3%) of the married female youth had ANC in the first trimester than the unmarried female youth (16.2%). (Table 4.3).

Table 4.2: Distribution of ANC use among youth between 1995 and 2011

Parameter	Youth	Percentage	Youth	Percentage
	Never married		Married	
ANC use				
No ANC	41	7.0	259	4.8
Some ANC	540	93.0	5,578	95.2
Timing of ANC (Dichotomous)*				
First Trimester	94	16.2	991	18.3
Never had or Second or third Trimester	487	83.8	4,446	81.7
Number of ANC Visits				
No ANC visits	41	7.0	259	4.8
1-3 visits	269	46.4	2,644	48.6
4+ visits	271	46.6	2,534	46.6
Total	581	100	5,437	100

**has two outcomes of 0 and 1*

4.8.2 Background characteristics of the respondents

More than half of the unmarried respondents lived in rural areas (72.2%), were aged 20-24 years (58.8%), had attained primary education (47.4%), had one birth (84.2%), wanted the pregnancy later (77.7%), and a higher proportion were Catholics (38.2%). This trend was similar among married youth except that more married youth wanted the pregnancy at that time (59.8%), and most had had two or more births (63.8%) (**Appendix III**).

4.9 Trends in ANC use among unmarried and married youth between 1995 and 2011

The first aim of this chapter was to find the trends in ANC use among youth in Uganda between 1995 and 2011. Using cross-tabulations and one-way ANOVA, the trends in the timing of the first ANC and the number of ANC visits were estimated and are shown in figure 4.2 and 4.3 respectively.

4.9.1 Trends in the timing of antenatal care among youth in Uganda, between 1995 and 2011

The levels of the use of ANC in the first trimester were low but increased over the years among both the unmarried and married female youth (Figure 4.1). It increased from 13 percent to 21 percent among the unmarried and from 16 percent to 25 percent among the married youth between 1995 and 2011. In 2000/01, equal proportions of unmarried and married youth used ANC in the first trimester (almost 17%). The total percentage increase between the 1995 and 2011 was 7.8% among unmarried compared to 9% among married youth. This difference was significant among the married youth $p=0.000$, but not among the unmarried youth ($p=0.454$).

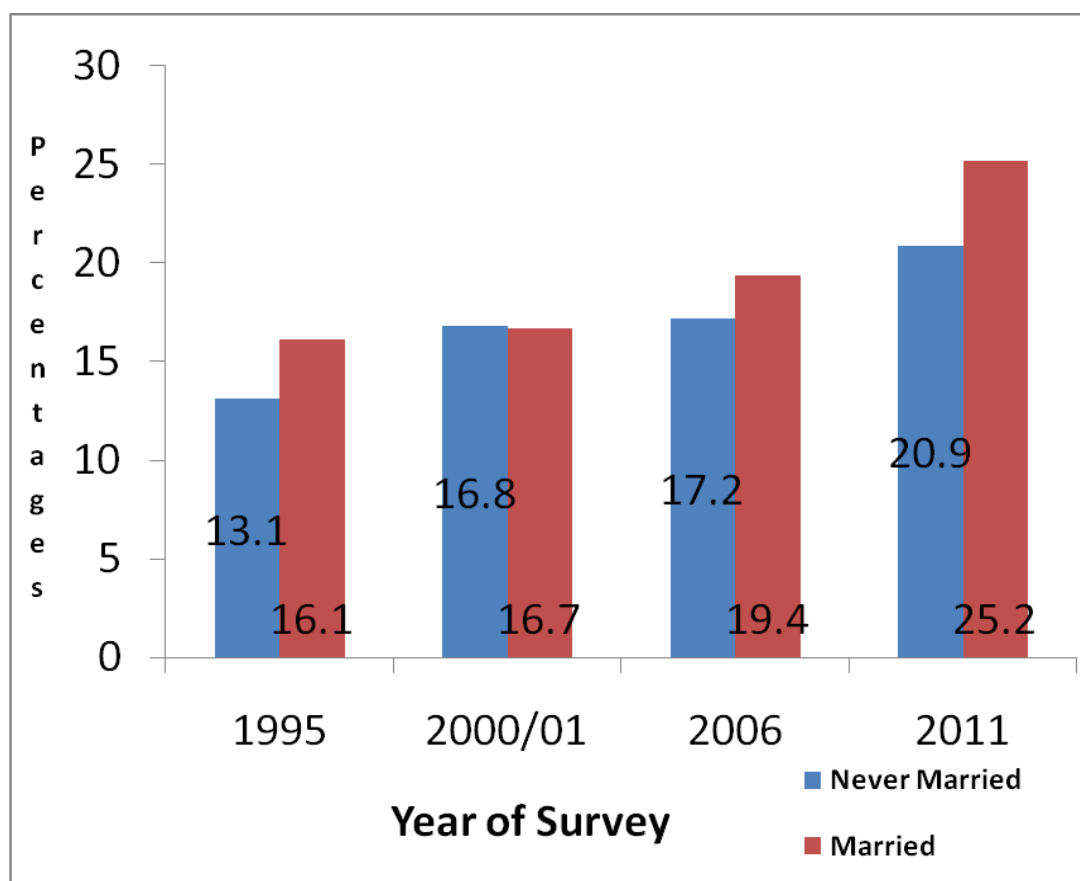


Figure 4. 2: Trends in having the first ANC visit in the first trimester (1995-2011)

4.9.2 Trends in the number of ANC visits among unmarried and married youth 15-24 years

Using one-way ANOVA, the mean number of ANC visits were computed and the trends between 1995 and 2011 are shown in Figure 4.2 below. The mean number of ANC visits increased from 3.4 to a peak of four visits between 1995 and 2000/01. It then decreased after 2000/01 up to 3.4 visits in 2011 among unmarried youth. It was highest among the married youth in 1995 and 2000/01 and decreased after 2000/01 to a low of 3.5 in 2011 among the married youth. The mean differences were significantly different among the married youth at $p=0.007$ but not among the unmarried youth ($p=0.064$).

Table 4.3: Trends in proportions having at least four ANC visits among unmarried and married youth aged 15-24 years in Uganda between 1995 and 2011

Number of ANC Visits	1-3 ANC visits	4+ ANC visits	Total youth	1-3 ANC visits	4+ ANC visits	Total youth
		$p=0.012^*$			$p=0.000^*$	
1995	39.5(46)	45.2(53)	117	44.7(22)	49.0(750)	1,530
2000/01	43.5(54)	51.9(64)	124	49.2(23)	46.8(640)	1,367

2006	44.2(76)	50.6(87)	171	49.1(23)	47.8(628)	1,313
2011	47.8(81)	46.7(79)	169	45.2(23)	51.2(628)	1,227
Total			581			5,437

4.10 Antenatal care timing differentials among unmarried and married youth aged 15-24 years in Uganda between 1995 and 2011

The cross-tabulation analysis using chi-square to explore the relationship between the timing of ANC visit within the first trimester and predisposing and enabling factors are presented in the following sub-sections.

4.10.1 ANC timing differentials by predisposing variables

There was no significant difference in the use of ANC in the first trimester by age for both unmarried and married youth, and parity and pregnancy desire for the unmarried youth. Most married youth (20.5%) who were carrying their first pregnancy had their first ANC visit in the first trimester compared to 17.4% who were having their second or higher order pregnancy ($p=0.01$). Nineteen percent of married youth who wanted the pregnancy then also had their ANC visit in the first trimester and 16.3% who did not want the pregnancy had the ANC visit in the first trimester ($p=0.0007$) (Table 4.4 below).

Also, the highest proportion of ANC use in the first trimester was highest among unmarried youth with no or with primary education (18%) while for married youth, it was highest among those with at least a secondary level of education (23.2%) and the difference was significant at $p=0.021$ & $p=0.000$ respectively. Eighteen percent of unmarried Catholics compared to 20% married Catholics had ANC in the first trimester (Table 4.4 below). Similar proportions of Protestants (16%) and youth of other religions (13.8%) had ANC in the first trimester among both groups. The difference was not significant among unmarried youth but was significant among married youth ($p=0.652$ & $p=0.000$ respectively).

Table 4.4: Variations in the use of ANC in the first trimester by predisposing factors among unmarried (compared to married) youth

Variable	Unmarried youth		Married youth	
	Yes, first trimester visit	Total youth	Yes, first trimester visit	Total youth
Age	<i>p=0.410</i>		<i>p=0.737</i>	
15-19	16.1 (40)	249	17.3(221)	1,275
20-24	16.3 (54)	332	18.5(769)	4,161
Pregnancy wanted	<i>p=0.188</i>		<i>p=0.007*</i>	
Then	12.8(19)	149	19.2(668)	3,480
Later or not anymore	17.4(75)	432	16.3(319)	1,957
Birth order/Parity	<i>p=0.728</i>		<i>p=0.001*</i>	
One	16.1(76)	473	20.5(406)	1,980
Two or more	17.4(19)	108	17.4(585)	3,437
Total		581		5,437
Education level	<i>p=0.021*</i>		<i>p=0.000*</i>	
No education or Primary Education	17.8(61)	342	17.2(782)	4,544
Secondary	13.9(33)	239	23.2(207)	893
Religion	<i>p=0.652</i>		<i>p=0.000*</i>	
Catholic	17.6(40)	227	19.8(448)	2,261
Protestant	16.0(37)	231	16.0(283)	1,850
Others	13.8(17)	123	13.8(259)	1,327

**Statistical significance at 5% level $p < 0.05$.*

4.10.2 Enabling factors and ANC timing differentials among youth

Table 4.5 shows that there was no statistical difference in the use of ANC in the first trimester by place of residence among unmarried and married youth. A high proportion of unmarried youth in western region (17.6%) had their first ANC visit in the first three months of the pregnancy while for the married, it was high among those in the northern and central regions. For both groups, low proportions of use occurred among youth in eastern Uganda and the difference was significant for the married youth only ($p=0.000$) (Table 4.5 below).

Additionally, higher proportions of first ANC were observed among professionals in both groups (18.4% among unmarried vs 23.6% among married) and the lowest proportions were observed among non-working unmarried (15.3%) and the married who were working in the agriculture sector (17%). This difference was not significant among

unmarried youth ($p=0.084$) but was significant among married youth ($p=0.002$). (Table 4.12).

Table 4.5: Variations in ANC timing in the first three months of the pregnancy by enabling factors

Variable	Unmarried youth		Married youth	
	Yes, first trimester visit	Total youth	Yes, first trimester visit	Total youth
Type of Residence	$p=0.847$		$p=0.092$	
Urban	15.7(24)	153	20.4(159)	780
Rural	16.4(70)	428	17.9(832)	4,657
Region	$p=0.901$		$p=0.000^*$	
Central	16.4(39)	238	21.5(326)	1,512
Eastern	14.2(17)	112	11.4(184)	1,617
Northern	16.0(12)	75	21.7(230)	1,061
Western	17.6(26)	148	20.1(251)	1,247
Wealth index	$p=0.935$		$p=0.000^*$	
Poorest	18.2(12)	66	19.4(166)	857
Poorer	19.4(13)	67	18.0(148)	822
Middle	13.9(12)	79	17.7(122)	690
Richer	15.5(14)	89	23.2(149)	642
Richest	18.4(30)	163	19.8(177)	896
Woman's Occupation	$p=0.084$		$p=0.002^*$	
Not working	15.3(27)	177	18.6(267)	1,435
Professionals	18.4(23)	125	23.6(147)	625
Agriculture	15.6(39)	249	17.0(545)	3,202
Labourers	16.2(5)	30	18.2(32)	176
Total		581		5,437

*Statistical significance at 5% level $p<0.05$.

4.10.3 Mass media and ANC timing differentials among youth in Uganda

Table 4.6 shows that the highest proportion of use of ANC in the first trimester was among unmarried youth who had less frequent access to the newspapers (20%), radio (17%) and television (22.2%). While among married youth, the highest percentage was among those who had daily access to newspapers (27%), radio (21.7%) and television (27.7%). The lowest percentages of married youth who had ANC in the first trimester were observed among those who had no access to all the three forms of media provision. This difference was significant for the married youth only at $p=0.016$, 0.000 and 0.000 for newspaper, radio and television respectively but not among unmarried youth.

Table 4.6: Differentials in ANC use in the first trimester by access to mass media

Variable	Unmarried youth		Married youth	
	Yes, first trimester visit	Total youth	Yes, first trimester visit	Total youth
Frequency⁶ of reading newspapers	<i>P= 0.420</i>		<i>P=0.016*</i>	
Not at all	16.0(46)	287	18.7(616)	3,292
Less frequent	20.9(32)	153	23.1(128)	553
More frequent	15.4(4)	25	27.0(17)	63
Frequency of listening to the radio	<i>P=0.853</i>		<i>P=0.000*</i>	
Not at all	14.8(23)	155	14.1(271)	1,920
Less frequent	17.1(25)	146	17.6(183)	1,038
More frequent	16.4(46)	280	21.7(537)	2,479
Frequency of watching TV	<i>P=0.208</i>		<i>P=0.000*</i>	
Not at all	15.7(68)	433	17.3(831)	4,802
Less frequent	22.2(18)	81	23.1(84)	364
More frequent	11.9(8)	67	27.7(75)	271
Total		581		5,437

**Statistical significance at 5% level $p < 0.05$.*

4.10.4 ANC timing differentials by husband characteristics

ANC timing also varied by husband's education level and occupation where 22% of youth with husbands with at least a secondary level of education had the first ANC visit within the first trimester, followed by 17% of those with husbands with primary education ($p=0.000$) (Table 4.7). More married youth with non-working husbands (23%) had the first ANC visit in the first trimester followed by professionals (19%), and then those employed in agriculture (16.9%); and this relationship was significant at $p=0.000$. This could be because non-working husbands have the time to accompany their wives in order to access maternity care relatively early. There was no difference in the timing of the first ANC visit by age of the husband ($p=0.081$).

⁶ Not at all- No access to any, Less frequent- once or less than once; More frequent- Almost daily access

Table 4.7: Disparities in ANC use in the first trimester by husband characteristics

Variable	Married youth	
	Yes, first trimester visit	Total youth
Husband's age	<i>p</i>=0.081	
15-24	19.0(205)	1,079
25-29	19.5(325)	1,671
30+	19.9(230)	1,158
Husband's Education level-	<i>p</i>=0.000*	
No education	16.4(88)	535
Primary Education	16.7(538)	3,229
Secondary	21.8(365)	1,673
Husband's Occupation	<i>p</i>=0.000*	
Not working	23.2(318)	1,368
Professionals	18.9(176)	932
Agriculture	16.0(369)	2,311
Labourers	15.4(127)	826
Total		5,437

**Statistical significance at 5% level $p < 0.05$.*

In conclusion, the analysis shows that the significant difference in ANC timing was observed only in terms of education level among unmarried youth and the highest proportion was among unmarried youth with no or primary education. No significant difference was observed by other predisposing and enabling factors among unmarried youth. However, a significant relationship between predisposing and enabling factors, and husband characteristics and the timing of ANC visit in the first trimester among married youth was observed. The proportions in use were significantly different among married youth by parity, region, education level, religion, wealth index, and occupation type, access to mass media, and the husband's education level and occupation. The next section presents the predictors of the timing of ANC among unmarried compared to married youth.

4.11 Determinants of timing of antenatal care among unmarried and married youth in Uganda

Multilevel logistic regression was done with district of residence as a second level of analysis and the results are as described below.

4.11.1 Marital differences in the timing of antenatal care among youth 15-24 years

The researcher began with analysis among all youth to identify marital status disparities in the timing of antenatal care. The first (empty) model among all youth shows an increased likelihood in the use of ANC in the first trimester between 1995 and all the survey years. When marital status was controlled for, the married youth were 26% more likely to have their first ANC visit in the first trimester than the unmarried youth. When predisposing and enabling factors were controlled for, the likelihood of ANC visits in the first trimester increased among the married, and they were 32% more likely to use ANC in the first trimester than the unmarried youth (OR=1.32, 95%CI=1.01-1.74). (**Appendix IV**). This analysis shows that there are observable differences in timing of ANC by marital status and the factors for ANC timing could be different among unmarried and married youth. As a result, separate multilevel models for unmarried and married youth to find differences in factors for ANC visits within the first three months of the pregnancy were conducted. The results are presented in Table 4.8 for unmarried youth and Table 4.9 for married youth below.

4.11.2 Procedure for the analysis of factors for the timing of antenatal care among unmarried compared to married youth

The variables were introduced successively into the model to show potential pathways of the factors influencing timing of antenatal care. The first model (model 0) has no covariates, the second model (model 1) controlled for predisposing variables and model two controlled for predisposing and enabling variables. For married youth, another model (model 3) was completed, controlling for husband factors. A model controlling for district level factors was not ran for both unmarried and married youth because the VPC was zero among unmarried youth. For comparison purposes, a model controlling for district factors was not conducted for married youth too.

The first model (model 0 or empty model) showed no significant difference in ANC use in the first trimester between 1995 and all the survey years among unmarried youth. There was a 45% increase in first trimester use of ANC between married youth in 1995

and 2006 (OR=1.45, 95% CI=1.17-1.79). More so, married youth in 2011 were twice as likely to have their first ANC visit in the first trimester (OR=1.93,95%CI=1.56-2.39) as married youth in 1995. The observed difference in ANC timing between 1995 and 2011 among unmarried and married youth confirms a previous finding on trends of ANC use within the first trimester using cross tabulations and Chi-square statistics in sub-section 4.9.1 where there was a significant difference in ANC timing trends between the years among married youth, but not among unmarried youth.

4.11.3 Predictors of the timing of antenatal care among unmarried youth

Model 1 controlled for predisposing factors and it is observed that no predisposing variable had a significant relationship with the use of ANC in the first trimester. When enabling factors are controlled for (Model 2), education level becomes significant and is negatively associated with the use of ANC in the first trimester. It is observed that the odds of using ANC in the first trimester were reduced with having a secondary education level. Unmarried youth who had at least a secondary level of education were 44 percent less likely to attend ANC in the first trimester compared to those with no education or primary level education only (OR=0.56, 95%CI= 0.31-0.98). There is no evidence that other predisposing factors influence the timing of ANC among unmarried youth or that enabling factors relating to ANC timing play a significant role in influencing other predisposing factors, except for education level (table 4.8).

As observed from the variance components model (that is, the empty model) in table 4.8, variation in timing of antenatal care among unmarried youth was only at the individual level. There were no district-level variations as indicated by zero random variance in timing of ANC in the first trimester across districts. In addition, the variance partition coefficient (VPC) and the intra-district correlation (IDC) is zero in all the models. Thus, the total unexplained variation in having an ANC visit in the first three months among unmarried youth could be attributed to unobservable individual-level factors. The zero IDC indicates that unmarried youth in each district have no similarity.

Table 4.8: Adjusted odds of first trimester antenatal care use among unmarried youth (confidence intervals in brackets)

Variable	Estimate	Odds Ratio (95%CI)	Odds Ratio (95%CI)
Year of survey (1995)	Model 0	Model 1	Model 2
2000/01	1.59 (0.77-3.26)	1.65(0.80-3.42)	0.77 (0.40-1.49)
2006	1.80 (0.91-3.53)	1.93(0.97-3.84)	0.91(0.52-1.59)
2011	1.87(0.96-3.64)	2.00(1.01-3.97)*	1.00 (1.00-1.00)
Predisposing factors			
Age (15-19)			
20-24		1.24(0.78-1.99)	1.32(0.77-2.24)
Education (No education or primary education)			
Secondary+		0.78(0.49-1.23)	0.56(0.31-0.98)*
Random Variance (SE)	0.000(0.000)	0.000(0.000)	0.000(0.000)
IDC	0	0	0
VPC=IDC*100	0	0	0
VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Level of significance at 5% level $p < 0.05$, Reference categories are in brackets after the names of the characteristic being considered, Sample size at level 1 (Individual)=485, level 2 (District) =54 Model 0- No covariates controlled for except year of survey Model 1- Controlling for predisposing factors Model 2- Controlling predisposing and enabling factors			

4.11.4 Antenatal care use in the first trimester among married youth 15-24 years

Model 1 (Table 4.9) controlled for predisposing factors and it is observed that the use of ANC in the first trimester was associated with higher parity, higher education level and protestant religion membership among married youth. With parity, married youth who were pregnant at least twice were 21 percent less likely to have their first ANC visit in the first trimester compared to married youth who were pregnant for the first time. Compared to unmarried youth, it is noticeable that married youth with at least secondary education were 30 percent more likely to attend ANC in the first trimester than those who had no education or had primary education (OR=1.30, 95%CI=1.08-1.57). This is different from what was found among unmarried youth where higher levels of education were related with lower odds of having an ANC visit in the first trimester (OR=0.56, 95%CI=0.31-0.98). Use of ANC in the first trimester was also significantly associated with religion among married youth. Protestants had 20 percent

reduced odds (OR=0.80, 95%CI=0.72-0.95) of having an ANC in the first trimester compared to their catholic counterparts. Parity and religion were not observed as an influence on timing of ANC among unmarried youth. Age and desire to have a child had no influence on ANC timing among both groups.

Model 2 (Table 4.9) controlled for enabling factors and among married youth, region and media exposure were observed to be associated with ANC visits in the first trimester. Among unmarried youth, no enabling variable was significantly related to ANC use in the first trimester. Married youth in the eastern region were 40 percent (OR=0.60, 95%CI=0.40-0.89) less likely to have their first ANC visit in the first trimester compared to those in central region. More frequent access to radio was associated with 40 percent (OR=1.40, 95%CI=1.11-1.76) higher chances of ANC visit in the first trimester compared to married youth who had no access to radio. Married youth with more frequent access (almost daily) to television were 57% (OR=1.57, 95%CI=1.11-2.22) more likely to have their first ANC visit within the first trimester than those who did not have access to the television.

Controlling for enabling factors reduced the impact of year of survey. There were reduced odds of having an ANC visit in the first trimester in the year 2000/01 (OR=0.72, 95%CI=0.57-0.90) and 2006 (OR=0.79, CI=0.64-0.97) compared to 1995. The significance of use in the year 2011 was reduced and there was no longer a significant difference in married youths having an ANC visit between 2011 compared to married youths in 1995.

Among married youth, the final model (model 4) controlled for husband factors of age, education and occupation. Education was the only husband variable that significantly influenced the use of ANC in the first trimester and the pattern is as expected. The odds of married youth having an ANC visit in the first trimester were 68 percent higher (OR=1.68, 95%CI=1.20-2.35) for youth with husbands with secondary education compared to married youth with husbands with no education. Controlling for partner factors considerably reduced the estimate for year of survey such that year of survey was no longer significant among married youths in having an ANC visit in the first trimester.

For married youth, the results in Table 4.9 indicate that most of the variations in ANC visit in the first trimester occurred at the individual level. However, some variations at the district level were observed as indicated by the significant random variance in

reporting of having ANC in the first three months across districts. As shown by the variance partition coefficient (VPC), the ICC was estimated at about 3.3-7.5%, even after controlling for predisposing and enabling factors in Table 4.9. Thus, about 3% of the total unexplained variation in the use of ANC in the first trimester could be attributed to unobserved district-level effects with the remaining unexplained variation attributable to individual-level factors.

Table 4.9: Average Odds of first trimester antenatal timing among married youth from Multilevel Logistic Regression Models

Parameter	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)
	Model 0	Model 1	Model 2	Model 3
Year of survey (1995)				
2000/01	1.19 (0.97-1.47)	1.20(0.97-1.48)	0.72(0.57-0.90)*	0.77 (0.34-1.77)
2006	1.46 (1.18-1.80)*	1.45(1.17-1.79)*	0.79(0.64-0.97)*	0.86 (0.37-1.97)
2011	2.01 (1.63-2.48)*	1.93(1.56-2.39)*	1.00(1.00-1.00)	1.00 (1.00-1.00)
Predisposing factors				
Age (15-19)				
20-24		1.08(0.89-1.30)	1.07(0.86-1.33)	1.05 (0.83-1.32)
Parity (One)				
Two+		0.79(0.67-0.93)*	0.77(0.63-0.92)*	0.77 (0.63-0.93)*
Education (No education or primary education)				
Secondary+		1.30(1.08-1.57)*	1.41(1.12-1.77)*	1.31 (1.03-1.66)*
Religion (Catholics)				
Protestant		0.80(0.67-0.95)*	0.80(0.65-0.99)*	0.80 (0.65-0.98)*
Others		0.93(0.77-1.11)	1.02(0.83-1.25)	1.01 (0.82-1.25)
Enabling factors				
Region (Central)				
East			0.60(0.40-0.89)*	0.57 (0.38-0.86)*
North			1.41(0.94-2.12)	1.41 (0.93-2.14)
West			1.01(0.69-1.49)	0.99 (0.66-1.47)
Radio (No access)				
Less frequent access			1.10(0.85-1.42)	1.08 (0.84-1.40)
More frequent access			1.40(1.11-1.76)*	1.36 (1.07-1.72)*
Television (No access)				

Parameter	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)
Less frequent access			1.19(0.90-1.57)	1.21 (0.92-1.61)
More frequent access			1.57(1.11-2.22)*	1.54 (1.08-2.18)*
Education level of husband (<i>No Education</i>)				
Primary Education				1.37 (1.00-1.88)
Secondary+				1.68 (1.20-2.35)*
Random Variance(SE)	0.266(0.073)*	0.244(0.068)	0.112(0.043)*	0.125(0.046)*
IDC	0.075	0.069	0.033	0.037
VPC=IDC*100	7.5	6.9	3.3	3.7
<p>VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Level of significance at 5% level $p < 0.05$, Reference categories are in brackets after the names of the characteristic being considered, Sample size at level 1 (Individual)=3,788, level 2 (District) =56</p> <p>Model 0- No covariates controlled for</p> <p>Model 1- Controlling for predisposing variables</p> <p>Model 2- Controlling for predisposing and enabling variables</p> <p>Model 3- Controlling for predisposing, enabling and husband factors</p>				

The first part of this chapter presents briefly the methods employed to achieve the objectives of this chapter. Levels, trends, differentials and factors for the use of ANC in the first trimester among unmarried compared to married youth aged 15-24 years were also carried out. The next section presents the differentials in ANC frequency by predisposing and enabling factors and the predictors of ANC frequency among unmarried compared to married youth between 1995 and 2011 in Uganda.

4.12 Differentials in the number of ANC visits among unmarried and married youth aged 15-24 years in Uganda

Analysis of variance was used to analyse the mean number of ANC visits by each predictor variable, as presented in the following sections.

4.12.1 Mean antenatal care numbers by predisposing factors among unmarried compared to married youth

There were no significant differences in the mean number of ANC visits among unmarried and married youth aged 20-24 years. Mean ANC visits were high among the unmarried who wanted the child at that time at 3.8 ($p=0.10$). Higher mean ANC visits were observed among youth who were pregnant for the first time at 3.7 and 3.9 for both unmarried and married youth respectively. There was a three-point mean difference among married youth who were having the first pregnancy and those with at least the second pregnancy, and this difference was significant at $p=0.000$.

Table 4.10: Mean ANC visits by predisposing factors among youth

Variable	Unmarried youth		Married youth	
	Mean ANC visits	Total youth	Mean ANC visits	Total youth
Age	$p=0.410$		$p=0.737$	
15-19	3.6	249	3.7	1276
20-24	3.7	332	3.7	4162
Pregnancy wanted	$p=0.010^*$		$p=0.032^*$	
Then	3.8	149	3.7	3480
Later or not anymore	3.6	432	3.7	1957
Birth order/Parity	$p=0.602$		$p=0.000^*$	
One	3.7	473	3.9	1980
Two or more	3.5	108	3.6	3437
Education level	$p=0.021^*$		$p=0.000^*$	
No education	3.1	37	3.2	838
Primary Education	3.4	305	3.6	3706
Secondary	4.0	239	4.4	893
Religion	$p=0.899$		$p=0.018^*$	
Catholic	3.7	227	3.7	2261
Protestant	3.6	231	3.6	1850
Others	3.5	123	3.8	1327
Total		581		5,473

**Statistical significance at 5% level $p < 0.05$.*

With education level, the mean ANC visits were high for those with secondary level education and lowest among those with no education among both unmarried and married youth ($p=0.021$ and 0.000 respectively). The highest mean ANC visits (3.5times) were among unmarried Catholics and highest among members of other religions among married youth (3.8 times). This difference was not significant ($p=0.899$) among the unmarried but it was significant among the married youth at $p=0.018$. The observed mean visits for most predisposing categories are less than the WHO recommended minimum visits except for those with secondary level education (Table 4.10).

4.12.2 Differences in ANC numbers by enabling factors

Table 4.11 below shows that higher mean ANC visits were observed among youth in urban areas than in rural areas. The differences in mean values between urban and rural areas were 0.5 and 0.9 among unmarried and married youth and significant at $p=0.022$ and 0.000 respectively. By region, the lowest mean ANC visits were among the youth living in the western region followed by eastern and then northern regions, with the highest mean visits seen in the central region among both groups. The mean differences between the central and western region were 0.8 and 1.1 for unmarried and married youth, and these were statistically significant at $p=0.049$ and $p=0.000$ respectively. The mean ANC visits were at least the four minimum visits recommended by WHO in resource poor countries among youth who reside in urban areas and in the central region (WHO, 2006).

The difference in mean ANC visits from the highest wealth quintile and the poorest wealth quintile were 0.6 and 0.5 among unmarried and married youth and it was significant among the married youth at $p=0.000$ but not among unmarried youth. The mean ANC visits were highest among labourers and professionals, who had a mean of at least four ANC visits among both unmarried and married youth. Non-working youth had a higher mean ANC visits than those employed in agriculture for both groups ($p=0.015$ & 0.000 among unmarried & married youth respectively).

Table 4.11: Mean ANC visits by enabling factors among youth

	Unmarried youth		Married youth	
Variable	Mean ANC visits	Total youth	Mean ANC visits	Total youth
Type of Residence	<i>p=0.022*</i>		<i>p=0.000*</i>	
Urban	4.0	154	4.5	780
Rural	3.5	428	3.6	4,657
Region	<i>p=0.049*</i>		<i>p=0.000*</i>	
Central	4.0	238	4.3	1,512
Eastern	3.5	119	3.4	1,617
Northern	3.7	76	3.8	1,061
Western	3.2	148	3.2	1,247
Wealth index	<i>p=0.202</i>		<i>p=0.000*</i>	
Poorest	3.3	66	3.5	857
Poorer	3.3	67	3.7	822
Middle	3.8	79	3.6	690
Richer	3.9	89	3.5	642
Richest	3.9	163	4.0	896
Woman's Occupation	<i>p=0.015*</i>		<i>p=0.000*</i>	
Not working	3.9	177	3.8	1435
Professionals	4.0	125	4.4	625
Agriculture	3.3	249	3.5	3202
Labourers	4.1	30	4.5	176
Total		581		5,437

**Statistical significance at 5% level, $p < 0.05$.*

4.12.3 ANC frequency differentials by access to mass media

Table 4.12 shows that youth who had almost daily access to newspapers, radio and television had the highest mean ANC visits followed by those with less frequent access and the lowest mean was observed among youth with no access to any media. The means were similar for both married and unmarried youth with no access to each media. The differences in mean between youth who had daily access to newspapers and those who did not read newspapers at all were the highest for both groups. Daily access to television and reading newspapers was related with a mean of at least four visits for both unmarried and married youth. The differences were significant among unmarried and married youth except for access to television among unmarried youth ($p=0.058$).

Table 4.12: Differentials in mean ANC visits by access to mass media among youth

Variable	Unmarried youth		Married youth	
	Mean ANC visit	Total youth	Mean ANC visits	Total youth
Frequency of reading newspapers	<i>P= 0.011*</i>		<i>P=0.000*</i>	
Not at all	3.5	287	3.5	3292
Less frequent	4.1	153	4.4	553
More frequent	4.3	25	4.8	63
Frequency of listening to the radio	<i>P=0.025*</i>		<i>P=0.000*</i>	
Not at all	3.3	155	3.3	1920
Less frequent	3.5	146	3.7	1038
More frequent	3.9	280	4.0	2479
Frequency of watching TV	<i>P=0.058</i>		<i>P=0.000*</i>	
Not at all	3.6	433	3.6	4802
Less frequent	3.6	81	4.3	364
More frequent	4.3	67	4.8	271
Total		581		5,437

**Statistical significance at 5% level $p < 0.05$.*

4.12.4 Married youth husband characteristics and differentials in the mean number of ANC visits

Mean ANC visits of at least four visits were observed among youth with husbands who had secondary level education or above (4.2), were professionals (4.2) or labourers (4). The results were significant for all the three factors of age of the husband ($p=0.007$), education level ($p=0.000$) and occupation ($p=0.000$) (Table 4.13).

Table 4.13: Variations in mean ANC visits by married youth husbands' characteristics

Variable	Married youth	
	Mean ANC visits	Total youth
Husband's age	<i>p=0.007*</i>	
15-24	3.6	1,079
25-29	3.6	1,671
30+	3.8	1,158
Husband's Education level-	<i>p=0.000*</i>	
No education	3.3	535
Primary Education	3.5	3,229
Secondary	4.2	1,673

	Married youth	
Variable	Mean ANC visits	Total youth
Husband's Occupation	<i>p=0.000*</i>	
Not working	3.5	1,368
Professionals	4.2	932
Agriculture	3.5	2,311
Labourers	4.0	827
Total	581	5,437

**Statistical significance at 5% level $p<0.05$.*

For both groups, those who were living in urban areas, the central region, who had at least secondary level education, who were professionals or labourers, accessed newspapers once a week or daily and those who had almost daily access to television had the mean ANC visits of at least four as recommended by WHO in resource constrained countries (WHO, 2006). In addition, the married youth who had more access to radio, less access to television and were in richest wealth index had a mean of at least four ANC visits. Married youth with husbands who had at least secondary level education, who were either professionals or labourers also had the mean of at least four ANC visits.

Therefore, the analysis of variance has identified factors by which mean ANC visits vary. However, due to confounding of the variables, the multilevel linear regression was applied to find factors that influence ANC visits among unmarried and married youth and results are presented in **section 4.13 below**.

4.13 Predictors of the Number of ANC Visits among Unmarried compared to Married Youth in Uganda between 1995 and 2011

4.13.1 Introduction

To identify marital status differences in the number of antenatal care visits, the researcher first analysed data among all youth. The first model (model 0) was an empty model that had no covariates and it showed no differences in the number of ANC visits between 1995, 2000/01 and 2006, but there was a 0.3 reduction in the mean number of ANC visits between 1995 and 2011. The second model (Model 1) controlled for marital status and it is observed that there was no significant difference in the number of ANC visits between the married and unmarried youth and the trend by years remained the same. After controlling for year of survey and individual demographic and socio-economic factors (model 2), the married were likely to have 0.3 more ANC visits than the unmarried youth (**Appendix V**). Therefore, there is some indication that the number of ANC visits varies by marital status, as had been recognised by other studies (Hueston et al., 2008; Ochako et al., 2011). A separate analysis was carried for each of the unmarried and married youth to show factors that influence the number of ANC visits by marital status. The results are presented in table 4.14 for unmarried youth and 4.15 for married youth.

The empty model shows that there was a significant decline in the mean number of ANC visits in 2006 (estimate= -0.210, SE=0.089) and 2011 (estimate= -0.363, SE=0.092) compared to 1995 among married youth, whereas among unmarried youth, there was an increase in 2006 and 2011, although it was not significantly different from unmarried youth in 1995. Among married youth in 2000/01, there was no significant change in ANC visits while among unmarried youth, there was 0.6 (estimate= 0.617, SE=0.308) increase in the mean ANC visits compared to unmarried youth in 1995.

4.13.2 Factors for antenatal care frequency among unmarried youth in Uganda

Table 4.14 presents the factors for the mean number of antenatal care visits among unmarried youth. Model one controlled for individual predisposing factors as presented in the conceptual framework in, **section 4.3 above**. Results show higher mean ANC numbers with higher education levels. Unmarried youth with at least secondary level education had 0.7 more ANC visits (Estimate= 0.720, SE=0.214) compared to those with no education or primary level education. Unmarried youth of other religions had 0.5 fewer ANC visits (Estimate= -0.509, SE= 0.261) compared to their catholic

counterparts. There is no evidence of other predisposing factors having an influence on the mean number of ANC visits.

The final model among unmarried youth (model 2) controlled for predisposing and enabling factors and it can be seen from table 4.15 that the mean number of ANC visits was significantly related to region, wealth index and access to radio. Unmarried youth who lived in western Uganda had 0.7 fewer ANC visits (Estimate= -0.662, SE=0.333) than the unmarried youth in central Uganda. Unmarried youth in middle income households had almost one (0.9) more mean ANC visits (Estimate= 0.889, SE=0.424) compared to those in the poorest households. In addition, those who listened to the radio at least daily had 0.6 more ANC visits compared to youth who did not have any access to the radio at all. Controlling for predisposing factors in model two reduced the significant impact of religion and education of unmarried youth on ANC frequency. Unmarried youth of other religions are no longer significantly different from Catholics. The estimates for education also reduced considerably in such a way that at least secondary level education was no longer significantly associated with the number of ANC visits for unmarried youth.

The results for the intercept model and model one in table 4.14 show that most of the variation in the mean number of ANC visits was at an individual-level and the variation at district level was not significant, as indicated by the non-significant district level variance. Model three shows that the variation in the number of ANC visits was at an individual level. The variance partition component for the final model was estimated at zero, thus the unexplained variation in the number of ANC visits among unmarried youth is explained by individual-level factors.

Table 4.14: Multilevel Linear Regression parameter estimates of the number of ANC visits among unmarried youth (standard errors given in brackets)

Variable	Model 0	Model 1	Model 2
Year of survey (1995)			
2000/01	0.617(0.308)*	0.5843(0.306)*	1.018(0.294)*
2006	0.478(0.293)	0.3917(0.294)	0.505(0.255)*
2011	0.027(0.291)	-0.057(0.293)	0.000(0.000)
Predisposing factors			
Age (15-19)			
20-24		0.2756(0.215)	0.284(0.239)
Parity (One)			
Two+		-0.1526(0.273)	-0.290(0.317)
Education (No education or primary education)			
Secondary & above		0.720(0.214)*	0.211(0.260)
Religion (Catholic)			
Protestant		-0.177(0.227)	-0.068(0.254)
Others		-0.509(0.261)*	-0.390(0.285)
Enabling factors			
Region (Central)			
East			-0.166(0.326)
North			0.103(0.388)
West			-0.662(0.333)*
Wealth Index (Poorest)			
Poorer			-0.316(0.437)
Middle			0.889(0.424)*
Richer			0.567(0.427)
Richest			0.194(0.428)
Radio (No access)			
Less frequent access			0.394(0.332)
More frequent access			0.635(0.319)*
Random variance(SE)	0.173(0.235)	0.177(0.130)	0(0)
IDC	0.028	0.030	0
VPC=IDC*100	2.8	3	0
<p>VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Level of significance at 5% level $p < 0.05$, Reference categories are in brackets after the names of the characteristic being considered, Sample size at level 1 (Individual)=485, level 2 (District) =54</p> <p>Model 0- No covariates controlled for Model 1- Controlling for predisposing factors Model 2- Controlling for predisposing and enabling variables</p>			

4.13.3 The Determinants of antenatal care numbers among married youth

Table 4.15 presents the results for factors impacting on ANC visits among married youth and these results differ somewhat from those of unmarried youth.

Model 1 controlled for predisposing factors and some results differ for married youth compared to unmarried youth. Married youth with higher parity had 0.2 lower mean ANC visits (Estimate= -0.241, SE=0.070) than married youth who were pregnant for the first time. Parity was not significant among unmarried youth. Education was similarly significantly related with mean ANC visits among married youth as among unmarried youth and the mean increase was almost the same (Estimate=0.720, SE=0.214 among unmarried compared to Estimate=0.705, SE=0.085 among married youth). Religion was not significant among married youth while among unmarried youth, being a follower of other religions was associated with lower mean ANC visits (Estimate=-0.510, SE=0.261).

Model two controlled for enabling factors and significant differences were seen among unmarried and married youth. Among married youth, more variables are significantly related with the mean number of ANC visits. Eastern and western regions had fewer mean ANC visits compared to married youth in the central region, whereas among the unmarried, it was only those in the western region that had a decreased number of mean ANC visits compared to unmarried youth in the central region. As expected, married youth in professional positions had higher mean ANC visits compared to non-working youth (estimate=0.282, SE=0.116). Labourers also had higher mean ANC visits (estimate=0.529, SE=0.188) compared to their non-working counterparts. Occupation of unmarried youth was found to have no significant influence on the number of ANC visits. Contrary to what I had expected, married youth in the richest households have lower mean ANC visits (estimate=-0.292, SE=0.131) compared to married youth in poorest households, while among the unmarried, youth in middle income households had higher mean ANC visits (estimate=0.889, SE=0.424) compared to unmarried youth in the poorest households.

Some access to newspapers also significantly influenced the number of ANC visits among married youth while this was not significant among unmarried youth. Married youth with access to newspapers at least once a week had 0.3 more mean ANC visits (estimate=0.262, SE=0.109) and those who had almost daily access to the newspaper had 0.6 more mean ANC visits (estimate=0.572, SE=0.265) compared to married youth

who had no access to the newspapers at all. Almost daily access to the radio was also associated with higher mean ANC visits among married youth compared to those with no access to the radio (estimate=0.404, SE=0.093). The trend was comparable to what was observed among unmarried youth (estimate=0.635, SE=0.319). More frequent access to the television was also associated with higher mean ANC visits among married youth but this was not observed to be associated with ANC numbers among unmarried youth. Married youth with daily access to television had 0.4 more mean ANC visits (estimate=0.412, SE=0.160) than married youth with no access to television.

Model three controlled for husband factors and it is seen from table 4.15 that mean number of ANC visits was associated with age and education level of the husband. Married youth with husbands aged 30 years and above were able to attend on average 0.2 (estimate=0.194, SE=0.098) more ANC visits compared to those with husbands aged 15-24 years. More so, youth with husbands who had at least secondary level education had 0.5 more ANC visits (estimate=0.480, SE=0.133) while those with primary level education had 0.3 more ANC visits (estimate= 0.293, SE=0.123) compared to youth with husbands who had no formal education. The results provided no evidence of association between the number of ANC visits and husbands' occupation.

The results observed in table 4.15 suggest that most of the variation in mean number of ANC visits was at the individual level. However, there was also some variation at the district level as indicated by the significant random variance in the reporting of number of ANC visits across districts. As shown by the variance partition coefficient (VPC), the IDC was estimated at about 2.2-5.5%, even after controlling for individual predisposing and enabling factors. Thus, a large percentage of the total unexplained variation in number of ANC visits among married youth is attributable to individual-level factors.

Table 4.15: Multilevel Linear Regression parameter estimates of the number of ANC visits among married youth (standard errors given in brackets)

Parameter	Model 0	Model 1	Model 2	Model 3
Year of survey (1995)				
2000/01	0.040(0.087)	0.030(0.086)	0.653(0.095)*	0.694(0.339)*
2006	-0.210(0.089)*	-0.245(0.089)*	0.318(0.090)*	0.371(0.339)
2011	-0.363(0.092)*	-0.472(0.093)*	0.000(0.000)	0.000(0.000)
Predisposing factors				
Age (15-19)				
20-24		0.140(0.082)	0.051(0.093)	0.025(0.096)
Parity (One)				
Two+		-0.241(0.072)*	-0.278(0.081)*	-0.290(0.081)*
Education (No education or primary education)				
Secondary+		0.705(0.085)*	0.396(0.101)*	0.314(0.103)*
Region (Central)				
East			-0.357(0.160)*	-0.407(0.159)*
North			0.025(0.173)	0.025(0.172)
West			-0.563(0.164)*	-0.580(0.163)*
Enabling factors				
Occupation (Not working)				
Professionals			0.282(0.116)*	0.245(0.116)*
Agriculture			-0.073(0.098)	-0.057(0.099)
Labourers			0.529(0.188)*	0.505(0.187)*
Wealth Index (Poorest)				
Poorer			0.187(0.113)	0.161(0.113)

Parameter	Model 0	Model 1	Model 2	Model 3
Middle			0.014(0.121)	-0.023(0.121)
Richer			-0.124(0.131)	-0.170(0.131)
Richest			-0.291(0.131)*	-0.334(0.131)*
Newspapers (No access)				
Less frequent access			0.262(0.109)*	0.219(0.109)*
More frequent access			0.572(0.262)*	0.538(0.264)*
Radio (No access)				
Less frequent access			0.186(0.101)	0.160(0.101)
More frequent access			0.404(0.093)*	0.356(0.094)*
Television (No access)				
Less frequent access			0.116(0.123)	0.131(0.123)
More frequent access			0.412(0.160)*	0.402(0.160)*
Husband factors				
Age of husband (15-24)				
25-29				0.017(0.089)
30+				0.194(0.098)*
Education level of husband (No Education)				
Primary Education				0.293(0.123)*
Secondary+				0.480(0.133)*
Random variance(SE)	0.242(0.063)*	0.191(0.052)*	0.0755(0.0290)*	0.073(0.028)*
IDC	0.046	0.055	0.022	0.022
VPC=IDC*100	4.6	5.5	2.2	2.2
VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Level of significance at 5% level $p<0.05$, Reference categories are in brackets after the names of the characteristic being considered, Sample size at level 1 (Individual)=3,788, level 2 (District) =56 Model 0- No covariates controlled for				

Parameter	Model 0	Model 1	Model 2	Model 3
Model 1- Controlling for predisposing factors				
Model 2- Controlling for predisposing and enabling factors				
Model 3- Controlling for predisposing, enabling and husband factors				

4.14 Discussion of key findings for the use of antenatal care among youth

4.14.1 Introduction

The chapter aimed to examine the predictors of the use of antenatal care (ANC) among unmarried (compared to married) youth in Uganda between 1995 and 2011. Particularly, to: (i) examine the levels and trends in ANC use among unmarried (compared to married) youth between 1995 and 2011; (ii) to find out the predisposing and enabling factors associated with the timing and the number of antenatal care visits among unmarried (compared to married) youth aged 15-24 years. Pooled data from the 1995, 2000/01, 2006 and 2011 Uganda Demographic and Health Surveys was analysed. This was among 581 unmarried compared to 5,437 married youth. Multilevel logistic and linear regression models with district as the second level were conducted among unmarried and married youth to show the predictors of timing and frequency of antenatal care respectively. The results obtained from this analysis are discussed in relation to existing literature in the following sections.

4.14.2 Levels in the use of antenatal care among unmarried (compared to married) youth

From objective one above, it was observed that there was an increase in early initiation of prenatal care from 1995 to 2011 from 13% to 20% among unmarried & 16% to 25% among married) among youth. However, these levels are still very low as ANC use in the first trimester should be universal (UN, 2000; UNDP, 2000; WHO, 2006; UNDP, 2015). However, the low levels of initiation of ANC in the first trimester among the youth is consistent with the national average among all women of reproductive age at 21 percent in 2011 and 29 percent in 2016 (UBOS & ICF, 2017; UBOS & ICF macro, 2012). Low levels of early start of ANC are also observed in Tanzania (24%) (MoHCDGEC et al., 2016), Kenya (20%) (Kenya National Bureau of Statistics & ICF, 2015), and Malawi (24%) (National Statistical Office (NSO) [Malawi] and ICF, 2017) and low-income countries (24%) (Moller et al., 2017). Low levels of early initiation of ANC have been reported in prior studies (Kiwuwa & Mufubenga, 2008; Kisuule et al., 2013; Gebremeskel et al., 2015). This could be because youth are accessing ANC from informal sources like Traditional Birth Attendants as was noted among women in Uganda (Ndyomugenyi et al., 1998) or because mothers had no pregnancy complications (Griffiths & Stephenson 2001; Kisuule et al., 2013; Finlayson & Downe, et al., 2013; Hatherall et al., 2016) and therefore view the pregnancy as a normal life

event. Prior studies also show that youth have been reported to start ANC late due to lack of knowledge, limited decision-making power, lack of money, cultural factors, failure to recognise the pregnancy, and continued vaginal bleeding (Jewkes et al., 1998; Stevenssimon et al., 1991; Myer & Harrison, 2003; Van Ejik et al., 2006; Downe et al., 2009; Gross et al., 2012).

Compared to married youth, it was also observed that unmarried youth had lower proportions of initiating ANC in the first trimester across the years compared to married youth. Existing literature revealed that married youth were associated with early use of ANC than unmarried youth (Ochako et al., 2011). Married youth might have an advantage of husband support and health systems which favour married women over the unmarried ones (Senderowitz, 1999). Also, since most pregnancies among unmarried women are unwanted, they tend to hide the pregnancies due to fear of family and society reaction to their pregnancies until late stages (Teagle & Brandis, 1998; Chaibva et al., 2009; Rai et al., 2013; Reibel et al., 2015; Hokororo et al., 2015). Some unmarried youth might also be planning an abortion in the early stages before the pregnancy is realised by others (Hatherall et al., 2016). Therefore, societal and familial attitudes change to support unmarried youth will help them to disclose their pregnancies early and thus receive the support to seek ANC early.

It was observed that starting ANC early did not translate to a higher number of ANC visits. A high proportion of both unmarried and married youth had their first ANC in the first trimester in 2011, but lower mean ANC visits were also observed in 2011. This was despite almost all youth having attended any ANC (93%-unmarried, 95%-married). This has been observed in other studies among women of reproductive ages as women attend ANC not because of the perceived benefits from attendance but to meet the health system requirement so that they are not denied access to other medical care services and supplies like *mama* kits and/or reprimanded by health providers or made to pay for the services (Ndyomugenyi et al., 1998; Amooti-Kaguna & Nuwaha, 2000; Myer & Harrison, 2003; Launiala. & Honkasalo, 2007; Atuyambe et al., 2008; Mushi, 2009; Mrisho et al., 2009; Gross et al., 2012). Youth and the population in Uganda in general need to be educated about the benefit of attending ANC on time and frequently. This can be through several communication channels like radio, village health teams and community meetings (Gross et al., 2012).

4.14.3 Predictors of ANC use among unmarried compared to married youth in Uganda

The second objective was to find out the predisposing and enabling factors associated with the use of antenatal care among unmarried compared to married youth in Uganda between 1995 and 2011. The results of the multilevel analysis suggest that there was a multivariate dimension that distinguishes unmarried youth from married youth. The aim was to identify predisposing and enabling factors that would accurately classify members of each group. The findings thus show that for each group, a combination of predisposing and enabling factors influence the use of ANC. Literature examining the use of antenatal care has also suggested that a combination of predisposing and enabling factors influence the use of ANC among youth. For example, Andersen, in her behavioural model of the use of health services, suggests that predisposing and enabling factors play an essential role for the person to access medical care (Andersen, 1968). It appears that the use of antenatal care is influenced by both predisposing and enabling variables among unmarried and married youth in this study and these results are discussed in the following two sections.

4.14.3.1 Association between predisposing factors and the use of antenatal care among unmarried compared to married youth in Uganda

Five youth and two husband predisposing factors were controlled for in the multilevel models. They included age, pregnancy desire, parity, education level and religion and husband education and age. The association between these factors and the use of antenatal care are discussed below.

Previous studies among youth have shown that higher education level was associated with greater odds of the use of antenatal care (Hueston et al., 2008; Kamal, 2009; Ochako et al., 2011; Sein, 2012; Rai et al., 2012; Kumar et al., 2013; Haque et al., 2012; Shahabuddin et al., 2015). The current study also found that higher education levels were associated with greater odds of seeking ANC in the first trimester among married youth compared to those with no education or primary education. Secondary and above education was also associated with increased odds of frequent ANC among unmarried and married youth. Studies have found that higher education level is associated with higher levels of knowledge on the benefits of seeking maternal healthcare which could lead to increased use of ANC (Matsumura & Gubhaju, 2001; Jat et al; 2011; Neupane, & Doku, 2012; Barasa et al., 2015) while limited knowledge of the benefit of ANC use

was associated with delayed or non-use of ANC among adolescents in Bulawayo, Zimbabwe (Chaibva et al., 2009). Education has also been linked to empowerment of women in other studies (Matsumura & Gubhaju, 2001; Grown et al., 2005; Fillipi et al., 2006; Tembon & Fort, 2008; Ahmed et al., 2010; Haque et al., 2012); thus, youth with high levels of education can make decisions concerning their health. Among married youth, education increases the likelihood of communication with husbands and other family members on health-related issues like the use of antenatal care (Jejeboy, 1995; Furuta & Salway 2006). In this analysis, the impact of education on the number of ANC visits ceased to be significant among unmarried youth after controlling for predisposing factors, thus the impact of education could be explained by wealth index and access to health information through the mass media among unmarried youth.

Contrary to what has been found in other studies, among unmarried youth, at least secondary level education was associated with reduced odds of the use of ANC in the first trimester compared to unmarried youth with no education or primary education. This points to the barriers unmarried youth face regardless of their education level. This could be due to stigmatisation of their pregnancies which compel them to hide the pregnancies until the latter stages of the pregnancy (Atuyambe et al., 2005). Also, since most of the youth in this age range are in school, they could have continued with school as much as possible. Youth at school might have experienced problems with timing of antenatal care clinics and school as has been found in a study in South Africa by Ehlers et al., 2000. Hence, the information about the importance of timely use of antenatal care should be shared to all unmarried youth regardless of the education level. Barriers unmarried youth with higher education levels face need to be identified and policies to overcome them put in place to encourage their frequent use of ANC.

Prior studies have found higher parity to be associated with fewer ANC visits and late start of ANC (Magadi et al., 2007; Hueston et al., 2008; Ochako et al., 2011; Birungi et al., 2011; Shahabuddin et al., 2015). In this study, married youth of higher parity were less likely to start ANC in the first trimester and more likely to have fewer ANC visits compared to married youth of parity one. However, higher parity had no influence on the timing and the number of ANC visits among unmarried youth. High parity was found to be associated with reduced excitement (Stewart & Cecutti, 1993; Gage, 1998) which might lead to reduced chances of the use of antenatal care. Studies have found that higher parity increases the child care responsibilities for older children which

reduces the chances to use ANC (Pallikadavath et al, 2004; Simkhada et al., 2008; Ahmed et al., 2010). Furthermore, higher parity may be associated with limited resources in a family (Simkhada et al., 2008). Youth with higher parity should hence be supported to solve the barriers that hinder them from accessing ANC. Community outreach programmes may help bring the ANC services closer to the youth. However, policies aimed at increasing ANC use among unmarried youth should target all regardless of the parity.

The influence of religion on the use of antenatal care has had mixed results in different countries. Muslims have been found to use ANC less than youth who follow Hinduism in India (Singh et al., 2012b; Singh et al., 2014). While in Niger, Muslims were twice as likely to have four ANC visits as Christian adolescents (Rai et al., 2012). The lower levels of the use of ANC among Muslims could be because Muslim women are prohibited from exposing their bodies to the opposite sex (Singh et al., 2014). However, the impact of religion in this study is mixed in relation to other studies among youth. Religion influenced the use of antenatal care services among both unmarried and married youth. Married Protestants were less likely to seek ANC in the first trimester compared to Catholic married youth. Unmarried members of other religions were less likely to have frequent ANC compared to Catholics. The effect of religion decreased after controlling for enabling factors and membership to other religions was no longer observed to influence frequency of ANC among unmarried youth. The impact of religion on the number of antenatal care visits among unmarried youth might be due to differences in enabling factors of region of residence, wealth index and information about the benefits of the use of antenatal care obtained through the radio.

Research has shown that the level of education attained by the husband has an influence on married youth use of ANC services (Kamal, 2009, Singh et al., 2012a; Singh et al., 2012b; Rai et al., 2012; Kumar et al., 2013). Attainment of a secondary or even higher level of education by the husband was associated with increased chances of having both the first ANC visit in the first trimester and frequent ANC visits thereafter in this study. Studies have shown that higher education level is generally related with a greater amount of knowledge on the benefit of using ANC (Matsumura & Gubhaju, 2001; Jat et al; 2011) which could be the case for husbands with a higher education level, who then support their wives in seeking ANC both early and frequently.

Another husband factor that was significantly related to the number of antenatal care visits was the age of the husband. Youth who had husbands who were at least thirty years old were more likely to have higher ANC visits than those who had husbands aged 15-24 years. This points to the level of support older husbands offer to their wives as men are, in most cases, the financial controllers in the homes (Dudgeon & Inhorn, 2004; Morfaw et al., 2013). Thus, with the financial support from husbands, married youth can afford to frequently go to the health facilities for antenatal care.

Prior studies have found that older youth were more likely to use ANC than the younger youth (Reynolds et al., 2006; Hueston et al., 2008; Ryan et al., 2009; Anderson & Rahn, 2016). This might be because of the familial and societal acceptance of pregnancy among older youth than the younger ones. Older youths have been found to receive more support than the young ones during the maternity period (Cosey & Bechtel, 2001). In contrast, use of ANC was not significantly associated with age among both unmarried and married youth in the current study.

Previous studies among youth have found that youth who wanted the pregnancy were more likely to start ANC early and to have more ANC visits than youth who did not want to get pregnant (Teagle & Brindis, 1998; Chaibva et al., 2009). However, in this study, pregnancy desire was not associated with ANC use among both unmarried and married youth. Although age and pregnancy desire had no influence on the use of antenatal care in this study, this was contradictory to other studies. Policies aimed at improving ANC use among youth in Uganda should consider all age groups as there was no major difference between youth aged 15-19 and 20-24 years among both unmarried and married youth as observed from this analysis.

4.14.3.2 Enabling factors and their association with the use of antenatal care among youth in Uganda

The enabling factors that were controlled for in this analysis were wealth quintile, occupation, region, and place of residence, access to newspapers, radio and television. Their influence on the use of antenatal care were mixed and are discussed in relation to literature as below:

Previous studies among youth found that their occupation was associated with the use of ANC (Weimann et al., 1997; Singh et al., 2013). This analysis also found that married youth who were employed in professional positions and labourers were more likely to

have more ANC visits than the non-working youth. This could be due to affordability and availability of both transport and hospital requirements due to income from employment (Bbale, 2011). Studies have also found that higher income empowers youth to make their own decisions concerning their healthcare (Haque et al., 2012). However, no difference in ANC timing by occupation was observed among both groups. Occupation was also not associated with frequency of ANC visits among unmarried youth.

Previous studies have found that at least middle wealth index is associated with greater chances of using ANC services (Rai et al., 2012; Kumar et al., 2013; & Singh et al., 2013). In Nigeria, the richest adolescents were 5.5 times, middle were 2.8 times while the richer ones were 2.6 times more likely to have at least four ANC visits than the poorest (Rai et al., 2012). This study found that among unmarried youth, middle wealth index was associated with more ANC visits compared to those classified as the poorest. The influence of wealth index on the use of antenatal care services could be related to the ability to cover both direct and indirect costs to access antenatal care (Gebremeskel et al., 2015).

Contrary to previous studies above, married youth in the richest wealth index were associated with infrequent ANC visits compared to the poorest married women. The other wealth quintiles revealed no differences in the use of ANC compared to the poorest. The infrequent use of antenatal care by the wealthiest married youth could point to the importance attached to ANC and availability of alternative care during pregnancy, especially from traditional birth attendants and older women in the extended family that have been found in a previous study in Uganda (Ndyomugenyi et al., 1998). The joint decision from husbands and mothers-in-law has also been found to be associated with unfavourable decision to use ANC by married women elsewhere (Matsumura & Gubhaju, 2001; Adamu & Salihu, 2002; Simkhada et al., 2008). This could have also influenced the infrequent use of ANC by married youth in Uganda.

Prior studies have found regional differences in the use of antenatal care elsewhere (Kamal, 2009; Rai et al., 2012; Singh et al., 2012a; Singh et al., 2012b; Singh et al., 2014). Kamal, (2009) found that married youth in Rajshahi were three times more likely to seek ANC from a skilled provider than youth in Barisal province. The current study found that youth in the central region were more likely to use ANC than those in other regions. Married youth in the eastern region were less likely to start ANC in the first

trimester. Married youth in the eastern and the western regions and unmarried youth in the western region were less likely to have frequent ANC compared to those in central region. The advantage that the central region has over other regions in Uganda can be attributed to it including or being close to Kampala city, which is well served by social and health amenities including over 90 percent of all private health facilities, as well as the national referral hospitals (MOH, 2013, 2016b). Thus, the distances youth in other regions must travel to access maternal health care services influences the use compared to those in the central region and long distances have been found to negatively influence the use of maternal health services in other studies (Teagle & Brindis 1998; Kyei et al., 2012; Teijlingen et al., 2012; Reibel et al., 2015; Hokororo et al., 2015; Tuyisenge et al., 2018).

Exposure to health information has been found to have a positive impact on ANC use among youth in Bangladesh (Kamal, 2009; Rahman et al., 2011a; Haque et al., 2012), in Myanmar (Sein, 2012), in India (Singh et al., 2012a; Singh et al., 2012b), in Nigeria (Rai et al., 2012), in Niger (Singh et al., 2013) and USA (Rogers et al., 1996). In this study, daily access to the radio and television were associated with early start of antenatal care among married youth. Daily access to the radio and newspapers were also associated with frequent ANC visits among the married youth. Daily access to the radio was also associated with frequent ANC use among unmarried youth. However, access to television and newspapers were not associated with the use of ANC among unmarried youth. Access to media is associated with increased knowledge about the benefit of using maternal health services which in turn leads to better use of antenatal care (UNICEF & WHO., 2003; Simkhada et al., 2008; Chaibva et al., 2009; Chaibva et al., 2010). There are health programs on almost all radio stations in Uganda in different languages. A case in point is *straight talk Uganda* which has youth health programs on different radio stations in seventeen different local languages in Uganda (Straight Talk, Foundation, 2018). In addition, radio is easily accessed by a large population (55.2%) compared to the television (7.2%) and newspapers (2.1%) in Uganda (UBOS, 2014, 2016). However, the observed patterns among unmarried youth could mean that they face other barriers to the use of antenatal care even when they have information about the benefits of timely and frequent use of antenatal care. Hence, research to find out these barriers and design policies that can help alleviate them is required.

4.15 Summary and Conclusion

Education predicted the use of ANC in the first trimester among unmarried and married youth. Education was the only factor significantly associated with the use of ANC in the first trimester among unmarried youth. While high levels of education were associated with higher chances of using ANC in the first trimester among married youth, it was associated with late start of ANC among unmarried youth. High parity, protestant membership and residence in the eastern Uganda were associated with late start of ANC while access to radio and television, and higher partner education were associated with the use of ANC in the first trimester among married youth.

Among unmarried and married youth, higher educational attainment and greater access to radio were associated with frequent ANC use. Although having a middle wealth index was associated with more ANC visits among unmarried youth, married youth in highest wealth quintile households were associated with infrequent ANC visits. Unmarried and married youth living in western Uganda had fewer ANC visits compared to those living in the central region. Additionally, married youth residing in the eastern region were associated with lower ANC visits among married youth, but this did not apply to unmarried youth. Membership of other religions was associated with lower ANC visits among unmarried youth compared to Catholics but not among married youth. More access to newspapers and higher levels of the husband's education level were associated with more ANC visits among married youth only.

Overall, the multilevel results show no variation in ANC use among unmarried youth at district level. Therefore, individual predisposing and enabling factors explain the timing and frequency of ANC visits among unmarried youth. Thus, policy makers need to focus on factors at the individual level to improve ANC use among unmarried youth. More so, few variations were observed in terms of the individual factors, especially with the use of ANC in the first trimester where only education was associated with reduced odds of using ANC in the first trimester. Therefore, unmarried youth should be targeted as a whole to improve their ANC use in Uganda.

The results also indicate that youth in Uganda have few ANC visits and very small proportions of less than 25 percent start ANC visits in the first trimester in Uganda. This is far below the WHO recommendation for universal use within the first three months of the pregnancy. Lower proportions also had the minimum of four ANC visits. The poor ANC use has an impact on the pregnancy outcomes, and the health and mortality of

both the youth and their infants. Efforts should be geared towards improvements in the knowledge of the benefit of using ANC to encourage them to seek ANC early and more frequently. Policies aimed at removing barriers that delay or stop youth from seeking ANC frequently should also be formulated and implemented.

5 CHAPTER FIVE: FACTORS THAT INFLUENCE THE USE OF HEALTH FACILITY AT DELIVERY AMONG UNMARRIED AND MARRIED YOUTH IN UGANDA

5.1 Background and objectives

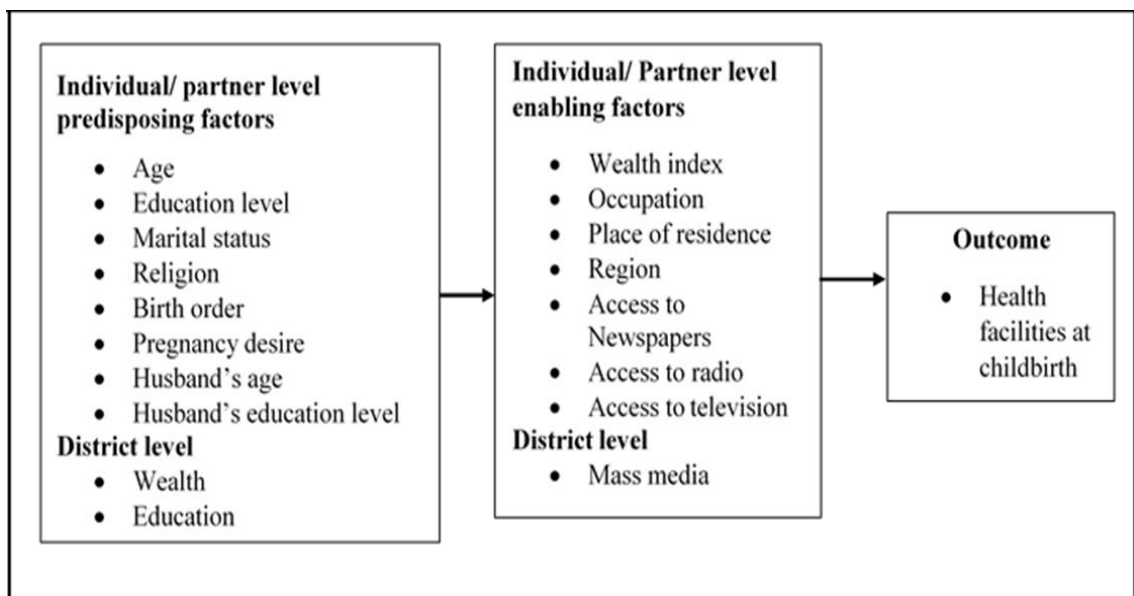
Despite the global progress in improving maternal mortality, women in sub-Saharan Africa (SSA) are 14 times more likely to die during the maternity period compared to women in developed regions (Ronsmans et al., 2006; WHO, 2014). Maternal mortality remains part of the “unfinished agenda” of the MDGs, leading to its prioritization in the SDGs era (WHO, 2014, 2015). Thus, the third Sustainable Development Goal (SDG 3) aims to ensure healthy lives and promote wellbeing for all at all ages; and SG target 3.1 aims at reducing MMR to less than 70 per 100,000 live births with no country double than the global average (UNDP, 2015, 2017). However, if current trends in maternal mortality are maintained, many countries will not meet the SDG 3.1 target (WHO et al., 2014; 2015; Kassebaum et al., 2016). Therefore, to achieve this target, effective ways of improving maternal survival must be prioritized (WHO, 2014).

Most maternal deaths occur during labour, delivery or within two days postpartum, mainly due to haemorrhage, sepsis, and hypertensive disorders (Mbonye et al., 2003; Ronsmans et al., 2006; Say et al., 2014; WHO et al., 2014; 2015; Kassebaum et al., 2016; Patten & Javanbakht, 2017). This reflects the close link between maternal survival, and the place of delivery, supervision during and after delivery, and the quality of maternal health care (WHO, 2015). Thus, most deaths would be averted with prompt and adequate diagnosis, and care during and after the childbirth process (Campbell & Graham, 2006).

Delivery from health facilities is an important opportunity to aid a mother during childbirth, supervise her immediately after childbirth and to identify, manage and/or prevent complications (UNICEF, 2009; WHO, 2014). The use of health facilities has been associated with reduced maternal mortality (Bulatao & Ross, 2003; Ray & Salihu, 2004; Bullough et al., 2005; Campbell et al., 2006; CDC, 2014; WHO et al., 2014, 2015; Koblinsky et al., 2016; Serbanescu et al., 2017). In previous studies, researchers have suggested that for countries to achieve SDG3, target 3.1, the use of maternal health services should be universal (Alam et al., 2015) or should be at least 81 percent together with a 91 percent use of at least one antenatal care visit, 78 percent of four antenatal care visits, and 87 percent of skilled birth attendance (Kassebaum et al., 2016). However, despite the correlation of the use of health facilities with maternal survival, its

use remained low in Uganda (41 percent in 2006 & 57 percent in 2011 (UBOS & ICF Macro, 2007, 2012; WHO, 2014). However, a greater increase was observed in the five years before the 2016 UDHS from 57 percent in 2011 to 73 percent in 2016 (UBOS & ICF macro 2012: UBOS & ICF; 2018).

The behavioural model of access to healthcare as proposed by Aday & Andersen, (1974) guided the analysis of factors for use of health facilities at childbirth. This model considers that use of medical care depends on predisposing, need and enabling variables. Environmental and health provider characteristics, and health outcomes like consumer satisfaction and quality of life have been included in the later revisions of this model (Aday & Andersen, 1974; Andersen, 1995; Andersen & Davidson, 2007; Andersen, 2008; Andersen et al., 2014). However, due to the unavailability of need, environmental, and health providers' variables in the Uganda Demographic and Health Surveys (UDHS) data, they are not included in this analysis. Therefore, the predisposing variables are assumed to operate through the enabling factors to influence the youth' use of health facilities at childbirth.



Source: Researcher's construct

Figure 5. 1: A conceptual framework for the analysis of determinants of the use of health facilities at childbirth among youth

Most studies included in the literature review considered individual and community level predisposing and enabling factors using logistic regression. Yet, the behavioural model of access to health care that was utilised in these studies and has been adopted for this study is a multilevel framework. No population-based studies were found to have

been carried out comparing unmarried and married youth in Uganda. This study used a nationally representative survey and employed multilevel models to find out the variations in enabling and predisposing factors associated with the use of health facilities at childbirth among unmarried (compared to married) youth aged 15-24 years in Uganda. This is aimed at providing information to guide health providers and policy makers to overcome barriers and improve the use of health facilities at childbirth, which will subsequently reduce maternal mortality among youth. More specifically, this chapter examined;

- i. The levels and trends in the use of health facilities at childbirth among unmarried (compared to married) youth aged 15-24 years between 1995 and 2011
- ii. The individual and district level predisposing and enabling factors that influenced the use of health facility at childbirth among unmarried (compared to married) youth in Uganda.

5.2 Research questions

Research questions: What factors are associated with the use of health facilities at childbirth among unmarried (compared to married) youth between 1995 and 2011?

- What are the levels of the use of health facilities at childbirth among unmarried and married youth in Uganda?
- Is there a difference in trends of the use of health facilities at childbirth by youth' marital status in Uganda?
- Are the factors associated with the use of health facilities at delivery among unmarried youth different from factors associated with the use of health facilities at childbirth among married youth in Uganda, between 1995 and 2011?

5.3 Variables of the study

5.3.1 Dependent variable

The dependent variable is the use of a health facility at childbirth, coded as Yes=1 and No=0

5.3.2 Independent variables: Individual level and district level variables

Individual level variables: Age of a woman, parity, child desire, education level, place of residence, region, wealth index, woman’s occupation, frequency of access to radio, television (TV) and reading newspapers, as well as husband characteristics of age, education level and occupation.

District level factors: Education level, wealth level, and mass media access

5.3.3 Data analysis method

As explained in section 3.7.4, two level logistic regression models were used to model the individual and district level predictors of use of health facilities at childbirth among youth. The multilevel logistic regression takes the form:

$$\text{Logit } \Pi_{ij} = \text{Log} \left[\frac{\Pi_{ij}}{1 - \Pi_{ij}} \right] = \beta_0 + \beta X'_{ij} + u_{oj}$$

Where (Π_{ij}) is the probability of youth i having a childbirth from a health facility, in the j th district. β_0 is the regression intercept, X'_{ij} are vectors of individual or district level covariates; β is the associated vector of estimated parameter estimates, and is shared by all districts, while the random effect u_{oj} is specific to district j .

5.4 Levels in the use of health facilities at childbirth

This analysis shows that the highest proportion of unmarried youth (62.4%) gave birth in health facilities compared to the married who mostly gave birth outside the health facilities (52.4%) (Table 5.1). The socio-demographic characteristics of the respondents are presented in Appendix III.

Table 5. 1: Distribution of unmarried and married youth (15-24 years) by place of delivery

Place of delivery	Unmarried Youth		Married Youth	
	n	%	n	%
In health facility	363	62.4	2586	47.6
Not in health facility	218	37.6	2851	52.4
Total	581	100	5,437	100

5.5 Trends in health facility use at childbirth among unmarried and married youth aged 15-24 years between 1995 and 2011 in Uganda

Cross-tabulations using chi-square tests were carried out to find the proportions and any significant differences in the percentages of youth who gave birth in health facilities within the five years before each survey. Proportions in the use of health facilities increased between the survey years among both unmarried and married youth. The proportions were higher among the unmarried than the married across all the years. The greatest increment was among the married from a low of 37% in 1995 to a peak of 64.5% in 2011. This increasing trend was significant at $p=0.002$ and 0.000 among unmarried and married youth respectively.

Table 5. 2: Trends in the use of health facilities at birth among youth in Uganda

	<i>Yes, facility delivery</i>	<i>Total youth</i>	<i>Yes, facility delivery</i>	<i>Total youth</i>
Number of ANC Visits	$p=0.002^*$		$p=0.000^*$	
1995	47.9	117	37.2	1,530
2000/01	62.1	124	42.9	1,367
2006	65.5	171	48.6	1,313
2011	69.8	169	64.5	1,227
Total		581		5,437

**Statistical significance at 5% level $p<0.05$.*

5.6 Bivariate association between health facility delivery and different independent variables

Bivariate analysis using cross tabulations with chi-square tests were used to find out the relationship between each independent variable and health facility delivery. The results of this analysis are presented in this section.

5.6.1 Relationship between health facility delivery and predisposing characteristics of youth

Although the use of health facilities at birth was not significantly different among female youth aged 15-19 and 20-24 years, more than half of the unmarried youth aged 20-24 years (63%) gave birth from health facilities compared to about half (49.3%) of the married youth aged 15-19 years. Further analysis of age by parity found that most unmarried youth aged 20-24 years (72.3%) were having their first birth while for the married youth, it was mostly those aged 15-19 years who were having their first birth (71.9%) (**Results not shown**). Thus, parity might explain the patterns in use by age among unmarried and married youth. The biggest proportions of youth that gave birth in

health facilities were among those who wanted the pregnancy later in both groups, but the significant difference was among married youth ($p=0.011$), but not among unmarried youth ($p=0.787$). Unmarried youth who were pregnant for the first time were almost twice as likely to use health facilities at childbirth than those who were pregnant at least for the second time (68% versus 38.5%, $p=0.000$). The highest proportions of youth who were having their first birth delivered from health facilities, 68% unmarried and 57.6% married, and this relationship was significant at $p=0.000$ for both groups (Table 5.3).

In addition, the youth with at least secondary level education (82.4% & 76.8%) were almost twice as likely to use health facilities at childbirth compared to those with no education or primary level education (48.4% & 41.8%) among both unmarried and married youth respectively; this was significant at $p=0.000$ for both groups. The highest proportion in health facility delivery were among unmarried youth of other religions (75%), followed by Protestants (62%), and then Catholics (56%) ($p=0.002$). More than half (55%) of the married youth of other religions delivered from health facilities compared to 45 percent of Catholics and Protestants ($p=0.000$) (Table 5.3).

Table 5. 3: Association between predisposing factors and health facility use at delivery

Variable	Unmarried Youth		Married Youth	
	Yes, facility delivery	Total youth	Yes, facility delivery	Total youth
Age	$p=0.786$		$p=0.157$	
15-19	61.8	249	49.3	1276
20-24	63.0	332	47.0	4161
Pregnancy desire	$p=0.787$		$p=0.011^*$	
Then	61.5	149	46.3	3480
Later or not anymore	62.7	432	49.9	1957
Birth order/Parity	$p=0.000^*$		$p=0.000^*$	
One	67.9	472	57.6	1980
Two or more	38.5	109	41.8	3457
Education level	$p=0.000^*$		$p=0.000^*$	
No education or primary education	48.4	342	41.8	4,544
Secondary+	82.4	239	76.8	893
Religion	$p=0.002^*$		$p=0.000^*$	
Catholic	55.9	227	45.2	2261
Protestant	62.3	231	45.1	1850
Others	74.8	123	54.9	1327

Variable	Unmarried Youth		Married Youth	
	Yes, facility delivery	Total youth	Yes, facility delivery	Total youth
Total		581		5,437

*Statistical significance at 5% level $p < 0.05$.

5.6.2 Differentials in the use of health facilities at birth by selected enabling factors

Table 5.4 shows that more than three quarters (83.8% unmarried and 84.1 % married) of youth in urban areas gave birth from a health facility, compared to 55% of unmarried and 41% of married youth in rural areas ($p=0.000$ for both). The highest proportions of use of health facilities at birth were among youth in the central region, followed by eastern, western, and the lowest was observed in the northern region among both groups. Overall, the proportions of use were higher among the unmarried than the married youth across all the regions. This result is significant at $p=0.000$ among unmarried and married youth.

Furthermore, most youth in the richest wealth quintile had their birth in the health facilities, followed by those in poorer households, middle, richer, and the lowest was among youth in poorest quintile households. This relationship was significantly different at $p=0.014$ and $p=0.000$ among unmarried and married youth respectively. Most professional unmarried youth used health facilities at delivery, followed by those who were not working, while among the married youth, the highest was observed among professionals followed by labourers. The lowest was observed among youth employed in the agriculture sector for both groups, and this difference was significant at $p=0.000$ for both (Table 5.4).

Table 5. 4: Relationship between enabling factors and the use of health facilities at birth

Parameter	Yes, health facility	Total youth	Yes, health facility	Total youth
	Unmarried youth		Married youth	
Type of Residence	$p=0.000$		$p=0.000$	
Urban	83.8	154	84.1	780
Rural	54.7	428	41.4	4657
Region	$p=0.000^*$		$p=0.000^*$	
Central	73.5	238	66.9	1512
Eastern	66.4	119	47.2	1617
Northern	47.4	76	33.9	1062

Western	51.7	149	36.2	1247
Wealth index	<i>p=0.014*</i>		<i>p=0.000*</i>	
Poorest	53.7	67	39.7	857
Poorer	67.2	67	50.7	822
Middle	65.8	79	50.4	691
Richer	58.4	89	47.4	642
Richest	74.8	163	68.0	896
Woman's Occupation	<i>p=.000*</i>		<i>p=0.000*</i>	
Not working	71.2	177	54.5	1435
Agriculture	49.4	249	39.6	3202
Labourers	66.7	30	54.9	175
Professionals	75.2	125	70.4	625
Total		581		5,437

**Statistical significance at 5% level $p<0.05$.*

5.6.3 Access to mass media and the use of health facilities at birth

As seen in table 5.5 below, there was a significant relationship in the use of health facilities at birth by access to newspapers, radio and television. Most youth who had some access to media were more likely to use health facilities at birth than those who did not have any access. Married youth with more frequent access to each type of media were almost twice as likely to use health facilities at childbirth compared to those who did not have any access to mass media. This difference was significant at $p=0.000$ for access to the three mass media variables among both groups.

Table 5. 5: Mass media access and the relationship with the use of health facilities at delivery

Parameter	Yes, facility delivery	Total youth	Yes, facility delivery	Total youth
	Unmarried youth		Married youth	
Frequency of reading newspapers	<i>P=0.000*</i>		<i>P=0.000*</i>	
Not at all	56.4	287	47.0	3,292
Less frequent	81.0	153	75.4	553
More frequent	84.0	25	85.7	63
Frequency of listening to the radio	<i>P=0.000*</i>		<i>P=0.000*</i>	
Not at all	43.9	155	31.2	1,920
Less frequent	65.1	146	47.1	1,038
More frequent	71.4	280	60.4	2,479
Frequency of watching TV	<i>P=0.000*</i>		<i>P=0.000*</i>	
Not at all	56.6	433	43.4	4,802

Less frequent	75.3	81	69.2	364
More frequent	83.3	67	96.2	271
Total		581		5,437

**Statistical significance at 5% level $p < 0.05$.*

5.6.4 Husband's characteristics and facility delivery differentials among married youth

As presented in table 5.6 below, 64% of the youth who had husbands with secondary level education or higher, had deliveries in health facilities, followed by 41% with husbands with primary level education and 36% of those with no education ($p=0.000$). The highest proportion of youth with non-working husbands (62%) had their childbirth in health facilities followed by those with husbands who were labourers (60%), professionals (56%), and the lowest proportions were among youth with husbands who were engaged in agriculture (31%) ($p=0.000$). Husband's age had no effect on facility delivery, although more than half of the youth in each husband age group had facility delivery, with the highest proportion among those with husbands aged at least 30 years (53.3%).

Table 5. 6: Husband characteristics and health facility use at delivery among married youth 15-24 years

Variables	Married youth	
	<i>Yes, facility delivery</i>	<i>Total youth</i>
Husband's age	$p=0.349$	
15-24	51.4	1079
20-24	50.6	1671
30+	53.3	1157
Husband's Education level	$p=0.000^*$	
No Education	35.7	535
Primary	41.1	3229
Secondary and above	63.8	1673
Husband's Occupation	$p=0.000^*$	
Not working	62.1	1368
Agriculture	31.2	932
Labourers	59.7	2311
Professionals	56.0	827
Total		5,437

**Statistical significance at 5% level $p < 0.05$.*

5.6.5 District level variables and the use of health facilities at child birth

Relatively high proportions of youth in low and high education level districts had births in health facilities among both unmarried and married youth. The lowest proportions of

the use of health facilities at child birth were among youth in middle education level districts. This difference was significant at $p=0.000$ for both groups as shown in Table 5.7 below. At least half of the youth in districts with high mass media levels gave birth in health centres. This was followed by youth in districts of middle access to mass media and the lowest was among those in district with low mass media access. ($p=0.001$ among unmarried youth compared to 0.000 among married youth. The percentages were also high among youth classed as being in high wealth levels followed by youth in middle wealth level district and the lowest were among youth in districts with low wealth levels and these differences were significant at $p=0.000$.

Table 5. 7: Difference in the use of health facility at childbirth by district level factors

Variable	Unmarried youth		Married youth	
	Yes, in health facility	Total youth	Yes, in health facility	Total youth
Education years	$p=0.000^*$		$p=0.000^*$	
Low	64.6	48	43.1	466
Middle	37.5	64	40.4	902
High	65.6	468	49.7	4069
Mass media	$p=0.001^*$		$p=0.000^*$	
Low	36.0	25	35.0	412
Middle	52.2	90	43.1	1039
High	65.9	466	50.0	3987
Wealth level	$p=0.000^*$		$p=0.000^*$	
Low	24.3	37	32.2	516
Middle	60.0	35	43.7	568
High	65.4	509	49.9	4354
Total		581		5,437

**Statistical significance at 5% level $p<0.05$.*

To summarise, there was a significant relationship between parity, education level, religion, place of residence, region of residence, occupation, wealth index, access to radio, newspapers, and television with health facility delivery among unmarried youth. Parity, child desire, education level, religion, place of residence, region of residence, woman and husband's education level and occupation, and wealth index had a significant relationship with health facility delivery among married youth. In addition, there were statistical differences in the use of health facilities by district level factors among both groups. On the other hand, this analysis found that there was no significant difference in the use of health facilities at childbirth by age, for both unmarried and

married youth, by pregnancy desire among unmarried youth, and no difference by husband's age for the married youth.

5.7 Predictors of Health Facility Delivery among Unmarried and Married Youth in Uganda

The first model (Model 0) among all youth included only year of survey. It showed that there was a significant increase in the chances of the use of health facilities at birth by year of survey. Youth in 2000/01 and 2006 were 30 percent (OR=1.30 95%CI=1.14-1.81), and 51 percent (OR=1.51, 95%CI=1.34-2.31) more likely to use health facilities at birth compared to youth in 1995. In addition, youth in 2011 were 3.3 times (OR=3.3, 95%CI=3.12-5.64) more likely to deliver at health facilities compared to youth in 1995. The intra-district correlation (IDC) for the variance component model was 0.161, thus 16 percent of the variation in health facility at childbirth was due to district level factors and 84% of the variation was due to unobservable individual factors. This difference was significant at $p=0.000$.

Successively, marital status was added to evaluate if there were differences in the use of health facilities at childbirth by marital status. It was observed that married youth had decreased chances of the use of health facilities at childbirth compared to the unmarried youth (OR=0.70, 95%CI=0.58-0.86). After controlling for predisposing, enabling, and district level variables, no difference in the use of health facilities at birth was observed among the married compared to the unmarried youth (OR=1.01, 95%CI=0.79-1.29). The IDC reduced to 0.065, thus 6.5 percent of the variation in the use of health facilities at childbirth among youth was attributable to unobservable district level factors ($p=0.000$) (**Appendix VI**). Although the final model shows no significant differences in the use of health facilities at birth by marital status, the preliminary results show that there are differences, and it is reasonable to know that studies have found that the determinants are likely to differ among unmarried and married youth (Magadi et al., 2007; Ochako et al., 2011; Hokororo et al., 2015). For this reason, multilevel analysis results are presented separately for unmarried and married youth to explore differences in the use of health facilities at childbirth by marital status.

5.7.1 Procedure for modelling factors for the use of health facilities at child birth among youth

The researcher first fitted an empty model with no covariates (Model 0). The explanatory variables were then sequentially introduced in the model to establish potential pathways of the determinants. The researcher first introduced predisposing factors followed by enabling factors. The first model (model 0) has no covariates, model

1 included predisposing factors, and model 2 includes the predisposing and enabling factors as shown in the conceptual framework in Figure 5.1. In addition to the two models, including predisposing (Model 1) and predisposing and enabling factors (model 2), two more models were run for the married youth. Model 3 controlled for husband factors and model 4 controlled for district level factors. The results of significant factors are presented in table 5.8 for unmarried youth and 5.9 for married youth. A model controlling for district level variables among unmarried youth was conducted but it did not converge, thus no results could be presented.

5.7.2 Determinants of the use of health facility at childbirth among unmarried youth in Uganda

With all variables excluded (Model 0), unmarried youth in 2011 were almost three times (OR=2.93, 95%CI=1.69-5.08) more likely to give birth from health centres than youth in 1995, while unmarried youth in 2006 were 83 percent more likely to give birth at health facilities than those in 1995. There were no significant differences in the use of health facilities between 2000/01 and 1995. With respect to predisposing factors (model 1), use of health facilities at childbirth is observed to be high among youth with secondary level education, but low among youth with a higher parity. Unmarried youth who had at least secondary level education were four times (OR=4.08, 95%CI=2.57-6.48) more likely to deliver in health centres than those who had no or had primary level education. Unmarried youth with relatively high parity were 68% (OR=0.32, 95%CI=0.19-0.54) less likely to deliver in health facilities than those of parity one.

When enabling factors were controlled for in the model (model 3), low use was still seen among unmarried youth of low parity. Higher but reduced odds of use were observed among unmarried youth with at least secondary level education. Controlling for enabling factors explained the differences by year of survey such that differences in use by year of survey was no longer significant. Occupation and place of residence were the only enabling factors significantly associated with the use of health facilities at childbirth. Unmarried youth who were engaged in the agriculture sector were 53 percent (OR=0.47, 95%CI=0.25-0.89) less likely to deliver in health facilities compared to unemployed unmarried youth. There was no difference in the use of health facilities at birth among professionals and labourers compared to unemployed unmarried youth. However, unmarried youth in rural areas were 59 percent (OR=0.41, 95%CI=0.21-0.81) less likely to give birth at health facilities, compared to those living in urban areas.

The results of the models in Table 5.9 show that most of the variation in the use of health facilities at childbirth among unmarried youth was at the individual level. However, some variation at the district level was observed as indicated by the significant random variance in the use of health facilities across districts when controlling for predisposing factors. As shown by the variance partition coefficient (VPC), the ICC was estimated at about 16%, but when enabling factors were controlled for, the IDC reduced to 4.3, and the random variance is no longer significant ($p=0.332$) (Table 5.8). There was no significant difference in the use of health facilities at birth between districts among unmarried youth; thus, the unexplained variation in the use of health facilities at childbirth among unmarried youth could largely be attributed to unobserved individual-level factors.

Table 5. 8: The Determinants of health facility use at childbirth among unmarried youth in Uganda presented as odds ratio and 95% confidence intervals in brackets

Parameter	OR (95%CI) Model 0	OR (95%CI) Model 1	OR (95%CI) Model 2
Year of survey (1995)			
2000/01	1.54(0.89-2.68)	1.44(0.80-2.60)	0.56(0.29-1.06)
2006	1.83(1.06-3.15)*	1.40(0.79-2.50)	0.75(0.43-1.31)
2011	2.93(1.69-5.08)*	2.22(1.23-3.99)*	1.00(1.00-1.00)
Predisposing factors			
Age (15-19)			
20-24		1.01(0.65-1.57)	1.45(0.86-2.43)
Parity (One)			
Two+		0.32(0.19-0.54)*	0.24(0.12-0.45)*
Education (No education or primary education)			
Secondary+		4.08(2.57-6.48)*	2.57(1.45-4.53)*
Enabling factors			
Place of residence (Urban)			
Rural			0.41(0.21-0.81)*
Occupation (Not working)			
Professionals			0.50(0.25-1.02)
Agriculture			0.47(0.25-0.89)*
Labourers			0.60(0.21-1.73)
District Random Variance (SE)	0.731(0.256)*	0.623(0.249)*	0.143(0.47)
IDC	0.181	0.163	0.043
District VPC=IDC*100	18.1	16.3	4.3
VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Level of significance at 5% level $p<0.05$, Reference categories are in brackets after the names of the characteristic being considered, Sample size at level 1 (Individual)=485 , level 2 (District) =54			

Parameter	OR (95%CI)	OR (95%CI)	OR (95%CI)
	Model 0	Model 1	Model 2
Model 0- No covariates controlled for			
Model 1- Controlling for predisposing factors			
Model 2- Controlling for predisposing and enabling factors			

5.7.3 Factors for health facility use at delivery for married youth

The results for married youth were slightly different from unmarried youth. Like unmarried youth, the chances of using health facilities were high among youth in 2011 compared to 1995 (OR=2.93 for unmarried youth against OR=3.06 for married youth). However, with married youth, there were increased chances of the use of health facilities at childbirth in 2000/01 compared to married youth in 1995, but no significant difference was observed among unmarried youth in 2000/01 compared to 1995.

Results for married youth also differed from unmarried youth when predisposing factors are controlled for (Model 1). Results suggest that being a follower of other religions was associated with higher chances of using health facilities among married youth but not for unmarried youth. Married youth of other religions were 26 percent (OR=1.26, 95%CI=1.06-1.48) more likely to deliver in health facilities compared to Catholics. The odds of use of health facilities were low for both married and unmarried youth with higher parity. Parity of at least two children was associated with a 47 percent (OR=0.53, 95%CI=0.44-0.64) reduced chance of delivering in a health facility among married youth, and 68 percent reduced chance for unmarried youth. In terms of education, higher education levels were associated with higher odds of use for both groups. Married youth with at least secondary level education were 3.5 (OR=3.45, 95%CI=2.85-4.16) times more likely to deliver in a health facility whereas unmarried youth with secondary level education were four times more likely to deliver in a health facility (OR=4.08, 95%CI=2.57-6.48).

Model two controlled for predisposing and enabling variables, and compared to unmarried youth, place of residence and occupation were associated with the use of health facilities at childbirth. Married youth in rural areas were 69 percent (OR= 0.31, 95%CI=0.04-0.59) less likely to deliver in health facilities compared to those in urban areas, while unmarried youth in rural areas were 59 percent less likely to give birth in a health facility. Married youth who were employed in the agriculture sector were 30 percent (OR=0.70, 95%CI=0.57-0.87) less likely to delivery in health facilities compared to those who were not working. Unmarried youth who were employed in the

agriculture sector were 53 percent less likely to have a health facility childbirth than non-working unmarried youth.

In addition to the above significant predisposing factors, among married and unmarried youth, use of health facilities at birth was associated with wealth index, region and mass media exposure (model 2). Married youth in the middle and richest wealth indices had 39 percent and 42 percent increased chances of giving birth in a health facility, compared to those in the poorest households (OR= 1.39, 95%CI=1.08-1.80 *versus* OR=1.42, 95%CI=1.06-1.91). Married youth in the western region were 45 percent (OR=0.55, 95%CI=0.34-0.88) less likely to give birth in a health facility compared to married youth in the central region.

Frequent access to mass media also increased the odds of using health facilities at child birth among married youth. Married youth with less frequent (at least once a week) and more frequent (almost daily) access to the radio had 27 percent (OR=1.27, 95%CI=1.02-1.57), and 57 percent (OR=1.57, 95%CI=1.28-1.92) higher chances of using health facilities at childbirth, than married youth who had no access to the radio. Those who had almost daily access to the television were slightly more than twice as likely to deliver in a health facility (OR=2.27, 95%CI=1.30-3.97), compared to their counterparts who had no access to television. Controlling for predisposing factors reduced the estimates for religion, such that membership to other religions was no longer significant among married youth.

For married youth, another model (model 3) that controlled for husband characteristics was conducted and it showed that husband's education level increased the odds of the use of health facilities among married youth. Married youth with husbands with primary and secondary level education had a 38 percent and a 77 percent (OR=1.38, 95%CI=1.05-1.82 *vs* OR=1.77, 95%CI=1.32-2.39) greater chance of using health facilities at child birth compared to married youth with husbands with no education.

The last model (model 4) controlled for district level factors, and the results showed that married youth living in a district with a middle education level were 65 percent more likely to give birth within health facilities compared to their counterparts in districts with low education levels (OR=1.65, 95%CI=1.13-2.51). The results provided no evidence of association between use of health facilities at childbirth and other district level factors that were included among married youth. Controlling for husband and district level factors reduced the impact of less access to radio, and it was no longer

statistically significant in influencing the use of health facilities at childbirth among married youth.

The results for different models in Table 5.9 showed that most of the variation in the use of health facilities at childbirth was at the individual level, but there were some variations at district level as indicated by significant district-level random variance. The VPC was estimated between 14.3% and 6.7% which was the measure of similarity in the use of health facilities at childbirth among married youth within the same district. This implies that most (about 86%-93.3%) of the unexplained variation in the use of health facilities at childbirth among married youth was attributable to unobserved individual-level factors.

Table 5. 9: Determinants of health facility use at birth among married youth in Uganda presented as odds ratio and 95% confidence intervals in brackets

Parameter	Model 0	Model 1	Model 2	Model 3	Model 4
Year of survey (1995)					
2000/01	1.28(1.08-1.51)*	1.31(1.10-1.55)*	0.45(0.36-0.56)*	0.70(0.32-1.50)	0.74(0.35-1.60)
2006	1.46(1.23-1.73)*	1.44(1.21-1.72)*	0.58(0.47-0.71)*	0.91(0.42-1.96)	0.94(0.44-2.02)
2011	3.29(2.74-3.95)*	3.06(2.52-3.70)*	1.00(1.00-1.00)	1.00(1.00-1.00)	1.00(1.00-1.00)
Predisposing factors					
Age (15-19)					
20-24		1.06(0.90-1.25)	0.95(0.77-1.16)	0.96(0.78-1.19)	0.95(0.77-1.18)
Parity (One)					
Two+		0.53(0.44-0.64)*	0.53(0.44-0.64)*	0.53(0.44-0.64)*	0.54(0.45-0.64)*
Education (No education or Primary education)					
Secondary+		3.45(2.85-4.16)	2.10(1.65-2.67)*	1.87(1.46-2.39)*	1.88(1.47-2.42)*
Religion (Catholic)					
Protestant		1.06(0.92-1.23)	1.13(0.94-1.36)	1.13(0.94-1.36)	1.13(0.94-1.36)
Others		1.26(1.06-1.48)*	1.19(0.97-1.45)	1.17(0.96-1.43)	1.19(0.97-1.45)
Enabling factors					
Place of residence (Urban)					
Rural			0.31(0.24-0.42)*	0.35(0.27-0.47)*	0.35(0.26-0.47)*
Region (Central)					
East			0.74(0.47-1.19)	0.69(0.43-1.10)	0.70(0.44-1.12)

Parameter	Model 0	Model 1	Model 2	Model 3	Model 4
North			0.66(0.40-1.08)	0.65(0.40-1.07)	0.62(0.38-1.01)
West			0.55(0.34-0.88)*	0.52(0.33-0.84)*	0.53(0.34-0.85)*
Occupation (Not working)					
Professionals			0.94(0.71-1.25)	0.91(0.69-1.21)	0.92(0.70-1.22)
Agriculture			0.70(0.57-0.87)*	0.74(0.59-0.92)*	0.76(0.61-0.95)*
Labourers			1.01(0.67-1.53)	0.96(0.63-1.46)	0.97(0.64-1.48)
Wealth Index (Poorest)					
Poorer			1.16(0.92-1.48)	1.13(0.89-1.44)	1.15(0.90-1.46)
Middle			1.39(1.08-1.80)*	1.36(1.05-1.76)*	1.40(1.08-1.82)*
Richer			1.21(0.91-1.61)	1.13(0.85-1.51)	1.17(0.88-1.58)
Richest			1.42(1.06-1.91)*	1.33(0.99-1.80)	1.41(1.03-1.93)*
Radio (No access)					
Less frequent access			1.27(1.02-1.57)*	1.21(0.98-1.51)	1.20(0.96-1.50)
More frequent access			1.57(1.28-1.92)*	1.45(1.18-1.78)*	1.46(1.19-1.79)*
Television (No access)					
Less frequent access			1.01(0.76-1.34)	0.99(0.74-1.32)	1.00(0.75-1.34)
More frequent access			2.27(1.30-3.97)*	2.25(1.29-3.94)*	2.28(1.30-3.99)*
Husband factors					
Education level of husband (No Education)					
Primary Education				1.38(1.05-1.82)*	1.38(1.05-1.81)*

Parameter	Model 0	Model 1	Model 2	Model 3	Model 4
Secondary+				1.77(1.32-2.39)*	1.77(1.31-2.37)*
District level factors					
Education level (Low)					
Middle					1.65(1.13-2.51)*
High					0.86(0.23-3.07)
Mass media exposure (Low)					
Middle					0.71(0.70-5.73)
High					0.85(-0.44-2.14)
Wealth level (Low)					
Middle					2.01(0.96-3.06)
High					2.40(0.87-6.59)
Random Variance (SE)	0.654(0.142)*	0.249(0.068)*	0.50(0.123)*	0.250(0.068)*	0.248(0.066)*
IDC	0.165	0.070	0.143	0.07	
VPC=IDC*100	16.5	7.0	14.3	7.0	6.7
<p>VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Level of significance at 5% level $p < 0.05$, Reference categories are in brackets after the names of the characteristic being considered, Sample size at level 1 (Individual)=3,788, level 2 (District) =56</p> <p>Model 0- No covariates controlled for</p> <p>Model 1- Controlling for predisposing factors</p> <p>Model 2- Controlling for predisposing and enabling factors</p> <p>Model 3- Controlling for predisposing, enabling and husband factors</p> <p>Model 4- Controlling for predisposing, enabling and husband and district-level factors</p>					

5.8 Discussion of findings for the use of health facilities at child birth among unmarried compared to married youth in Uganda between 1995 and 2011

5.8.1 Introduction

The main aim of this chapter was to uncover the predictors of the variation in the use of health facilities at childbirth among unmarried (compared to married) youth, aged 15-24 years. Notably, (i) to show levels and trends in the use of health facilities at childbirth among unmarried (compared to married) youth between 1995 and 2011 and; (ii) to examine the variation in predisposing and enabling factors for the use of health facilities at childbirth among unmarried (compared to married) youth aged 15-24 years in Uganda. These were achieved from a secondary analysis of the pooled data from the 1995, 2000/01, 2006, and 2011 Uganda Demographic and Health Survey data, among 581 unmarried compared to 5,437 married youth. Multilevel logistic regression models with district as the second level were conducted, to show predictors of the use of health facilities among unmarried and married youth. The results obtained from this analysis are discussed in relation to existing literature in the following sections.

5.8.2 Observed levels in the use of health facilities at childbirth among unmarried and married youth in Uganda between 1995 and 2011

The first objective was to show the levels and trends in the use of health facilities at childbirth. Overall, the levels in the use of health facilities at childbirth were low among youth and far from being universal. However, these levels were higher than the national rates among both unmarried and married youth in all the survey years. There was a significant increase in the proportions of young women using health facilities for childbirth among unmarried and married youth. The proportions were high among unmarried youth compared to married youth in all the survey years. The possible explanation for the low proportions among married youth compared to unmarried youth could be due to the confounding effect of higher parity. Most married youth were pregnant for the second time or more (Appendix III), and higher parity has been associated with lower use of safe delivery in prior studies among youth (Kamal 2009; Birungi et al., 2011, Rai et al., 2012; Singh et al., 2012b; Rai 2014; Singh et al., 2014).

In spite of that, it does appear that there was a great increase in the use of health facilities among married youth between 2006 (48%) and 2011 (64.5%). This result is promising and coupled with higher proportions among unmarried youth in 2011

(69.8%), it showed that the levels of the use of health facilities at childbirth in Uganda was improving, and in 2016, it stood at the national rate of 73 percent, an increase from 58% in 2011 (UBOS & ICF, 2012, 2018). The observed high levels of the use of health facilities at childbirth between 2006 and 2011 could be due to the prohibition of traditional birth attendants from providing maternal health services to women in Uganda in 2010 (Kabayambi, 2013), and better information, education and communication (IEC) about the benefits of the use of health facilities at childbirth.

5.8.3 Predictors of the use of health facilities at childbirth among unmarried compared to married youth in Uganda

The second objective was to find the predisposing and enabling factors that influenced the use of health facilities at childbirth among unmarried compared to married youth in Uganda, between 1995 and 2011. There are so many uncontrollable variables that can influence the use of health facilities at childbirth. However, based on the Andersen (1968) behavioural model of access to medical care, and available data in the Uganda Demographic and Health Surveys (UDHS), predisposing and enabling factors were identified. The predisposing factors included age, pregnancy desire, parity, education level and religion. The enabling factors were wealth quintile, occupation, region, place of residence, access to newspapers, radio, and television. Two husband predisposing factors of education level and age and one enabling factor of his occupation were included. District level variables of education level, wealth level, and mass media exposure were developed from population level variables. The multilevel analysis with district as a second level, showed that predisposing factors such as age and pregnancy desire did not influence the use of health facilities among both the unmarried and married youth and is discussed below in reference to literature.

5.8.3.1 Association between use of health facilities at childbirth and individual predisposing factors

Prior studies have found higher levels of education to be associated with greater chances of safe delivery, or the use of health facilities at childbirth (Kamal, 2009; Ochako et al., 2011; Singh et al., 2012a; Singh et al., 2012b; Rai et al., 2012; Sein 2012; Singh et al., 2013; Singh et al., 2014). A study among adolescents in Nigeria found that those with secondary levels of education were twice as likely to have a safe delivery as adolescents with no education (Rai et al., 2012). Youth with secondary level of education were more likely to use health facilities at birth compared to those with no education or primary

level education in the current study. The effect of education on the improved use of health facilities is linked to higher levels of knowledge on the benefits of seeking healthcare (Matsumura & Gubhaju, 2001; Jat et al; 2011; Barasa et al., 2015). Education is also related to the empowerment of women, and thus, youth with higher levels of education can make decisions concerning their health care (Chakraborty et al., 2003; Ahmed et al., 2010). As was found in previous studies among youth conducted by Kamal, (2009), Singh et al., (2012a), Singh et al., (2012b), Rai et al., (2012), Kumar et al., (2013), Rai, (2014), higher husband education level was associated with higher odds of using health facilities at childbirth. This was also observed in the current study. This analysis found that husbands with at least primary level education were associated with higher chances of using health facilities at childbirth. This might be because partners take part in decision making on when and where to go in order to access the services (Upadhyay et al., 2014), and educated husbands make decisions in favour of the use of health facilities. Education is generally associated with knowledge of the benefit of the use of health facilities (Matsumura & Gubhaju, 2001; Jat et al; 2011), and increased incomes, both of which have been found to be associated with greater chances of the use of health facilities at childbirth among youth in previous studies (Kamal 2009; Singh et al., 2012a; Singh et al., 2012b; Haque et al., 2012; Kumar et al., 2013; Singh et al., 2014; Rai 2014).

Previous studies among youth in developing countries have found that higher parity was associated with reduced chances of the use of health facilities at child birth (Kamal 2009; Birungi et al., 2011; Singh et al., 2012b; Kumar et al., 2013; Singh 2013; Rai 2014; Singh et al., 2014). Parity was significantly associated with the use of health facilities at childbirth in this study. Youth who have had a previous birth were less likely to use health facilities for child birth compared to those who were having their first birth in the current study. Studies have found that if women with higher parity have had no history of pregnancy complications (Kyomuhendo, 2003), have had better pregnancy outcomes with no infant mortality (Johnson et al., 2013), and believe that they can give birth on their own without the need to go to the health facilities (Mekonnen & Mekonnen, 2003) see no reason for using health facilities for childbirth.

The influence of Islam on the use of health facilities at childbirth in India was found to be negative with Muslims less likely to have childbirth in health facilities than the Hindus (Singh et al., 2012b; Singh et al., 2014). Singh et al., (2014) suggested that non-

use of health facilities at childbirth might be because religion prohibits Muslim women to expose their bodies to the opposite sex. In the current study, religion influenced the use of health facilities at childbirth among married youth, but not among unmarried youth. While controlling for predisposing factors, married youth of other religions, including Muslims, had an increased likelihood of using health facilities at childbirth. After controlling for enabling factors, religion was no longer significant, thus the impact of religion could be explained by enabling factors of wealth index, occupation and access to mass media.

5.8.3.2 Association between the use of health facilities at childbirth and enabling factors among youth in Uganda between 1995 and 2011

Among the enabling factors considered in this study, agriculture occupation and rural residence were associated with the use of health facilities among unmarried and married youth. In addition, middle and richest wealth index, residing in western region, frequent access to the radio and television and having husbands with at least primary education were associated with the use of health facilities at childbirth among married youth. These results are discussed below in relation to prior literature.

This study found that married youth residing in western Uganda were less likely to have births in health facilities compared to those in the central region. Region had no influence on the use of health facilities among unmarried youth. Previous studies have found that region of residence had an impact on the use of health facilities at birth, with regions that were remote and occupied mostly by people of low social caste less likely to use health facilities at childbirth compared to youth that resided in regions that were considered more advanced (Kamal, 2009; Birungi et al., 2011; Rai et al., 2012; Singh et al., 2012a; Singh et al., 2012b; Singh et al., 2014.) This was attributed to differences in socio-economic status and regional differences in the provision of health services (Birungi et al., 2011). Other studies have found that differences in use of health facilities by region in Uganda were due to cultural factors (Kyomuhendo, 2003; Kwagala, 2013) and childbirth was the test of a woman's strength and women who had caesarean births or those who died at childbirth were regarded as 'weak' (Kyomuhendo, 2003:18). Additionally, the advantage central Uganda has over other regions is the location of the capital city (Kampala), with the highest concentration of health centres within the region (MOH, 2013, 2014, 2016b). Youth in the central region travel shorter

distances to access the services compared to other regions, where they have to travel longer distances to access the health services (UBOS, 2016a).

This study found that rural areas were associated with lower chances of the use of health facilities at childbirth among unmarried and married youth. This finding is consistent with previous studies that had indicated that the odds of the use of health facilities at childbirth were higher in urban areas than rural areas (Kamal, 2009; Ryan et al., 2009; Haque et al., 2012; Sein, 2012; Kumar et al., 2013; Shahabuddin et al., 2015). Married youth residing in urban areas in Myanmar were 17.5 times more likely to use institutions at childbirth, than their counterparts in rural areas (Sein, 2012). The observed rural-urban differences could be explained by the long distances, the times, and transport means required to reach the health centres during untimed pre-birth labour pains, which are more unfavourable for rural youth than urban youth. Long distances have been documented elsewhere as a barrier to the use of maternal health services (Teagle & Brindis 1998; Kyei et al., 2012; Reibel et al., 2015; Hokororo et al., 2015; Tuyisenge et al., 2018). In Uganda, health facilities are located in towns, or along major roads (HAI, WHO, 2002). Therefore, the long distances coupled with poor transport means could be the cause of non-use of health facilities at child birth among rural youth in Uganda. There are also differences in staffing levels by location of facility, with health facilities in rural areas having fewer staff, especially midwives (Anyangwe & Mtonga, 2007; WHO, 2007, 2012; MOH, 2015, 2016, 2017).

Prior studies have found mixed associations between occupation and the use of health facilities for childbirth. Adolescents working away from home were observed to be less likely to use health facilities at childbirth compared to those working at home in Niger (Rai et al., 2014). No differences in the use of health facilities at childbirth by occupation were observed in Bangladesh (Kamal, 2009). In the current study, the use of health facilities at childbirth was low for both unmarried and married youth employed in the agriculture sector. The negative influence of agriculture could be because it is labour intensive, and youth in agriculture have limited time to access health facilities compared to non-working youth. In addition, most of the agriculture work that these young women do is done as a means to provide for their own subsistence, and only what is the excess to their subsistence requirements is sold, thus less or no income is obtained from this agriculture compared to other work. Consequently, they have less money to meet the requirements for the use of health facilities at childbirth. This analysis also found

that there was virtually no difference between youth who were professionals and those who were labourers in the use of health facilities at childbirth when compared to the non-working youth. This implies that the use of health facilities at childbirth in Uganda demands other requirements besides hospital charges (Gebremeskel et al., 2015). This could be the time needed to access health services, or the child care responsibilities for the youth.

Economic disparities in the use of health facilities at childbirth were also identified in this study among married youth. Middle and richest wealth quintiles were related with higher chances of the use of health facilities at childbirth among married youth, but not among unmarried youth. Several studies have shown that economic power increases the odds of using health facilities or safe delivery among youth (Kamal 2009; Singh et al., 2012a; Singh et al., 2012b; Haque et al., 2012; Kumar et al., 2013; Singh et al., 2014; Rai 2014). In Bangladesh, rich married adolescents were three times more likely to give birth from health facilities, than their poor counterparts (Kamal, 2009). The influence of wealth index on the use of health facilities at childbirth is related to the affordability of the services and other indirect costs (Gebremeskel et al., 2015). Households with relatively high incomes can assign higher proportions of their income to health care, compared to poor households whose priority is meeting household basic needs (Kamal, 2009). The rich also have access to mass media, thus have better knowledge of the benefit of using health facilities at childbirth (UNICEF & WHO., 2003; Simkhada et al., 2008).

The association between access to mass media and the use of health facilities has been soundly established in prior studies that observed that youth, including adolescents who had access to media, had increased chances of using health facilities at childbirth (Singh et al., 2012a; Singh et al., 2012b; Singh et al., 2013; Singh et al., 2014). In the current study, access to the radio and television was associated with higher odds of the use of health facilities at child birth among married youth, yet not among unmarried youth. Media, especially the radio, is a good source of maternal health information for Uganda, given that more than half (55.2%) of the households have access to the radio, compared to 7.2 percent and 2.1 percent who have access to television and print media respectively (UBOS, 2016a). Access to media has also been found to be associated with increased knowledge of the benefits of the use of health facilities at childbirth, and the dangers of birth outside health facilities (UNICEF & WHO., 2003; Simkhada et al.,

2008) which increases the chances of the use of health facilities at childbirth. However, among unmarried youth, there are other barriers even when they are well informed about the benefits of use of health facilities at childbirth.

5.9 Summary and Conclusion

This analysis found that secondary education level was associated with greater chances of the use of health facilities at childbirth among unmarried and married youth. Membership of other religions, middle and the richest wealth quintile, more access to radio and television, primary and secondary level educated husbands, and residing in districts with middle education levels were associated with increased odds of having childbirth in the health facility among married youth. Higher parity, working in the agriculture sector, and rural residence were associated with reduced chances of the use of health facilities among unmarried and married youth. In addition, married youth living in the western region were less likely to use health facilities at childbirth.

District level variance in the use of health facilities at childbirth was not significant among unmarried youth, thus efforts should aim at improving individual-level predisposing and enabling factors for unmarried youth, to improve their use of health facilities at child birth. An increase in the proportions of unmarried youth who had their child birth in health facilities was observed but more effort is needed for universal use to be realised. Policies should improve the education, socio-economic and access to media which will increase their knowledge about the benefits of giving birth from health centres, and the ability to access the health facilities. Health facilities that offer child delivery services should also be available to youth especially those in western region, and those that reside in rural areas in order to improve their use. Efforts should also aim to remove barriers to the use of health facilities at childbirth for youth with higher parity, those employed in the agriculture sector, and those that reside in rural areas.

6 CHAPTER SIX: EXPERIENCES OF YOUTH AND THE SUPPORT RECEIVED DURING THE MATERNITY PERIOD AT HOME AND IN THE COMMUNITY

6.1 Introduction

The purpose of this chapter was to explore the lived experiences of unmarried female youth who were pregnant or had given birth during the three years before the study. This includes their experiences in their homes and in the communities, and how these experiences influence their use of the maternal health care services.

Data collection was conducted between November and December of 2017. Data were collected using in-depth interviews, focus group discussions, and key informant interviews. In-depth interviews were conducted among female youth and their parents, focus group discussions (FGDs) were with the youth and key informant interviews were conducted among health providers who provide maternity care services to the youth. All interviews were audio-taped and transcribed verbatim for analysis. Each in-depth interview (IDI) with the youth lasted approximately 45 minutes; FGDs lasted for about 2 hours and included a break of approximately 15 minutes. In-depth interviews carried out among parents and key informant (KI) interviews with health providers took approximately 30-40 minutes.

All interviews and FGDs followed a semi-structured format, inviting participants to describe their experiences in their own words. The interview guides included some questions on demographic, background socio-economic factors, and a history on maternal health care use. Interviews were conducted by trained research assistants from Uganda, with experience in qualitative data collection, who were fluent in Runyoro and Runyankole, the predominant local languages in the study setting. These research assistants were encouraged to follow up issues that came up during the interviews and seek clarification wherever it was required. The research was approved by the University of Hull, School of Education and Social Sciences ethics review committee, a local institutional review board (Mildmay Uganda Research Ethics Committee), and Uganda National Council of Science and Technology. More clearance was sought from the district local governments and the research team reported to the lower local government structures. The research was carried out in the two western Uganda districts of Kibaale and Bushenyi. (Detailed methodology in chapter three)

The participants were identified by the help of community health workers known as Village Health Teams (VHTs), who also acted as field guides during the research.

Participant recruitment was done by the researcher who identified the participants a few days before data collection occurred. IDIs were carried out among fourteen female youth participants and seven parents. A total of eight FGDs were conducted with four to eight youth participants in each. Seven key informant interviews with health providers were also completed (6 females & a Male). All youth IDI participants were mothers aged 16-19 years, and most had gotten pregnant at 15 years of age. Only two of the youths for IDI (Participants ten & fourteen) had become pregnant while aged below 15 years old; more specifically at 14 years old (table 6.1 below). More than half (8 of 14) of the IDI participants became pregnant while at school. A total of 42 unmarried youths took part in the eight FGDs, and these were aged between 16-19 years of age (table 6.2 below). The parents consisted of two males and five females (Table 6.3), and health providers included six females and one male (Table 6.4). All IDI participants were staying with parents apart from two, one of whom was staying with grandparents (Participant six) and the other was staying with her head teacher (participant three).

Table 6. 1: Summary of youth in-depth interview participants' characteristics

Participant	Age	Pregnant or not	Pregnancy duration	Age at first birth	No. of pregnancies	No. Of children alive	Age of last child	Pregnancy wanted	ANC use	No of ANC visits	HF delivery	PN C	Education level	In school at pregnancy	Stays at	District of research	Place of residence
1	16	No	N/a	16	1	1	3 months	No	No	0	HF	No	Some primary	No	Father's home	Kibaale	2
2	17	Yes	2 months	N/a	1	0	N/a	Yes	Yes	1	N/a	N/a	Complete primary	Yes	Parents home	Kibaale	2
3	17	No	N/a	16	1	1	2 years	No	yes	3	Home	No	In p.6	Yes	Headteacher's home	Kibaale	2
4	17	No	N/a	16	1	1	10 months	No	Yes	Missing	HF	No	Some primary	Yes	Parents home	Kibaale	2
5	17	Yes	11 months	N/a	1	0	N/a	No	Yes	Missing	N/a	N/a	Some primary	No	Parents home	Kibaale	2
6	18	No	N/a	17	2	1	1 year	No	Yes	3	HF	No	Some secondary	Yes	Grand parents' home	Kibaale	1
7	18	No	N/a	17	1	1	8 months	No	Yes	2	TBA*	No	No Education	No	Parents home	Bushenyi	2
8	17	No	N/a	17	1	1	2 months	No	Yes	4	HF	No	Complete primary	No	Parents home	Bushenyi	2
9	19	No	N/a	18	1	1	One year	Yes	Yes	2	HF	No	Some sec	Yes	Parents home	Bushenyi	2
10	16	No	N/a	14	1	1	1 year	No	Yes	3	HF	No	Some secondary	Yes	Parents home	Bushenyi	1
11	19	Yes	8 months	N/a	1	0	N/a	Yes	Yes	3	N/a	N/a	Missing	No	Parents home	Bushenyi	2
12	17	Yes	7 months	N/a	1	0	N/a	No	Yes	1	N/a	N/a	Some secondary	Yes	Parents home	Bushenyi	2

Participant	Age	Pregnant or not	Pregnancy duration	Age at first birth	No. of pregnancies	No. Of children alive	Age of last child	Pregnancy wanted	ANC use	No of ANC visits	HF delivery	PNC	Education level	In school at pregnancy	Stays at	District of research	Place of residence
13	19	No	N/a	17	2	2	2 years & 1 week	No	Yes	3	HF	No	Complete primary		Parents home	Bushenyi	2
14	15	Yes	N/a	14	2	0 (1 Died and currently pregnant)	N/a	No	Yes	4	HF	N/a	Some primary	Yes	Parents home	Bushenyi	2

HF- Health facility, ANC-Antenatal care. PNC- Postnatal care, TBA- Traditional birth attendant N/a- Not applicable, *1= Urban, 2- Rural*

Table 6. 2: Summary of focus group discussion participants' characteristics

FGD number	Number of participants	Age	Pregnant	No. of pregnancies	Age at first birth	Children ages	ANC use	Place of delivery	PNC	Education levels	Main economic activity	District	Place of residence*
1	8	16-18	One participant at 8 months pregnant	1 pregnancy for all		5 months-3 years	Yes	HF	No PNC	2-primary education 5- Some sec education	Farming	Bushenyi	1
2	5	18-19	One participant at 7 months pregnant	One has had 2 pregnancies but had a miscarriage		5 months-1 year	Yes	HF	No PNC	All had secondary Some	Farming & 1 owns a retail shop	Bushenyi	2
3	5	18-19	One participant	One has had 2 pregnancies and both children are alive		2 months-2.5 years		HF	No PNC	1-Incomplete primary 1-Complete primary 3-Incomplete	Farming & 1 works at school canteen	Bushenyi	2

FGD number	Number of participants	Age	Pregnant	No. of pregnancies	Age at first birth	Children ages	ANC use	Place of delivery	PNC	Education levels	Main economic activity	District	Place of residence*
										secondary			
4	4	16-18	No	1 pregnancy for all	14-16	1.5 to 2 years	Yes	HF	2 had PNC	2 incomplete primary 2 incomplete secondary	Work away from home-shop attendants, restaurant	Kibaale	1
5	5	17-19	No	1 had 2 births but second died	16-17	9 months to 3 years	Yes	HF	2 had PNC	2 incomplete primary 1 primary complete 2 incomplete secondary	Farming	Kibaale	1
6	4	16-17	No	1 pregnancy for all	15-16	3 months - 2 years	One had no ANC	One delivered at home	Missing	Missing	Missing	Kibaale	2
7	6	16-19	One participant at 11 months pregnant	1 pregnancy for all	15-17	2 weeks -2 years	Yes	HF	1 had PNC	2 incomplete primary 4 incomplete secondary	Farming & 1 works at a restaurant	Kibaale	2
8	5	18-19		3 had 2 births	14-19	2 months-2 years		2 delivered at home	2 had PNC	3 had incomplete primary, 1 completed primary & 1 had incomplete secondary	Farming	Bushenyi	2

**1= Urban, 2- Rural*

Three of the fourteen youth IDI participants wanted to get pregnant; one IDI participant (participant three) was raped and immediately afterwards, informed the parents but no emergency contraception was sought. Almost all youth IDI participants had some antenatal care except participant one who did not know she was pregnant, until approximately seven months after conception, when she gave birth prematurely. Most of those who had ANC attended at least twice. Seven out of 10 IDI participants who had given birth did so in health facilities (Table 6.1 above). Most youth, both IDI and FGD participants, did not have postnatal care.

Table 6. 3: Characteristics of youth’ parents

Parent number	Sex	Marital status	Occupation	District	Place of residence*
One	Male	Married	Farming	Kibaale	2
Two	Male	Married	Farming	Kibaale	2
Three	Female	Separated	Farming	Bushenyi	2
Four	Female	Married	Farming	Kibaale	2
Five	Female	Separated	Shop/Farming	Kibaale	1
Six	Female	Married	Farming	Bushenyi	2
Seven	Female	Married	Farming	Bushenyi	2

**1= Urban, 2- Rural*

Table 6. 4: Characteristics of health providers

Provider number	Health facility level	Sex of interviewed provider	Type of health facility	Qualification	District	Place of residence*
One	Health centre IV	Female	Public	Enrolled nurse	Bushenyi	1
Two	Hospital	Female	Private	Enrolled midwife	Bushenyi	1
Three	Health centre III	Female	Public	Nursing officer	Bushenyi	2
Four	Health centre III	Female	Public	Enrolled midwife	Bushenyi	2
Five	Health centre III	Female	Public	Enrolled midwife	Kibaale	1
Six	Health centre IV	Female	Public	Enrolled comprehensive nurse	Kibaale	2
Seven	Health centre III	Male	Public	Enrolled comprehensive nurse	Kibaale	2

**1= Urban, 2- Rural*

The background data presented here indicate the context-specific characteristics of the accounts given by the research participants that are illustrative of a given experience but are not representative of society as a whole. Brief biographical details of each of the youth IDI participants are presented in Appendix VII which, alongside the information provided in the methodology chapter, provide a position for the issues discussed in this chapter and the next chapters of the thesis.

The main objective of this chapter was to explore the experiences and support available to unmarried youth, at home and in the community during the maternity period in Uganda.

Research question: What is the experience of unmarried youth at home and in communities during the maternity period in Uganda?

Data analysis using thematic interpretative phenomenological methods was conducted (Details in chapter three). This data was coded into themes and patterns that emerged during data analysis using Van Manen's (1997) reduction methods in phenomenological study. The researcher analysed the interviews for broad themes and coded these themes during analysis. Four major themes were identified: 1) pregnancy knowledge, disclosure and reactions; 2) changes and needs after getting pregnant; 3) community relations, and 4) reproductive health information. These were in turn coded into several sub-themes to explain the variations in participants' experiences. The type and source of support available to the unmarried youth are included in each theme. Expectations from family and partners, as well as contradictory perspectives between youth and parents are also included, to guide policy makers in terms of youth needs and requirements, and for future researchers.

6.2 Pregnancy knowledge, disclosure and reactions

The purpose was to gain information on the experiences of the unmarried youth during the maternity period whilst living with and being a part of their families. This information was taken from the time of disclosing their pregnancy and throughout the maternity period and focussed on how these experiences influence the use of maternal health services. The sub-themes that emerged under this theme were categorised as: shame and fear felt by the youth; youth' pregnancy disrupts family; and relations with their partners.

6.2.1 Shame and fear felt by the youth

Missing periods and the absence of their usual menstrual cycle confirmed to these youths that they had become pregnant. They received the news of their pregnancy with fear and regret for having disappointed their parents. They were thus ashamed to tell their parents or teachers and most hid the pregnancy until it was discovered or had become obvious, due to fear of negative reactions from parents and school authorities. Others even denied the pregnancy when asked, and some parents said they got to know of the pregnancies later when girls were almost giving birth, and this led to poor use of maternal health care services.

"I asked her (youth) if she was pregnant and she kept refusing but people kept telling me, but she denied. I called the father and he asked her, so she stayed here till child birth. But I

got to see it when she was like six months.” (Parent six, mother to IDI participant seven)

This is emphasized by parent three:

“Do you know that girls can hide a pregnancy from the parents till!?! And this can stop her from going to the health centre until like at 8 months. I know of one who hid until labour pains started.” (Parent three, mother to IDI participant eleven)

Health providers identified youths’ fears when it came to the disclosing of their pregnancies, and they counselled and encouraged them to tell the people they stay with in order to make it easier for them to get support during the maternity period.

“We counsel them on being open, to disclose their status to their parents because we cannot allow a pregnant girl to come alone for antenatal. If she comes the first time still having stigma and hasn’t yet disclosed to the person she is living with obviously I have to sit with her and we talk and advise her to do it otherwise next time when they come, they know her status so that in case of anything by the time of delivery she is having someone to accompany her to the facility.” (Health provider six, Female, Enrolled comprehensive nurse)

Due to shame, they developed negative attitudes towards life and did not mind about the outcome of the pregnancy or their health which was associated with poor use of the services as reflected in the words of this FGD participant

“It was now total shame again, even the way people at home were treating me worsened. So, I would say to myself why do I need to go for maternal health services?” FGD two participant

The youth delayed access to maternity care because they did not want to be seen at the health centres. This negative attitude was worsened by poor community attitudes which stopped them from moving out of their respective family home. The stigma and fear that they had about being seen pregnant was put forward by all study participants as the cause for delay or none use of maternity care:

“They get pregnant before marriage, sometimes do not know who impregnated them, do not have the requirements for the hospital like baby’s clothes, fear to be seen pregnant, and boyfriend’s denial of the pregnancy makes them feel inferior. And this makes them fail to go for antenatal.” (Parent five, mother to FGD five participant)

6.2.2 Youth pregnancy disrupts family

Parents of youths were disappointed, angry and bitter with the youth. This was because they felt that they had brought shame on the family and had wasted their resources on education. This is because community regarded parents as failures as their daughters’ pregnancies are associated with poor parenting and a failure to provide for the girls, which compels girls to look for support from men.

“I am facing a lot of challenges. First, I got disappointed, got really ashamed around the neighbourhood and I was expecting a lot from her (daughter) in future since she was still in school, but she stopped school. (...) It was bad, humiliating and disappointing. Being a school girl, it wasn’t good. Being a younger girl and moreover in school, we had high expectation in her, because she is all we had. But she disappointed us.” Parent three (Mother to IDI participant eleven)

At times, the parents’ disappointment turned into violence and they would abuse the girls verbally and physically. Parents expected the girls to marry the men who made them pregnant and used mistreatment to either force them to marry or leave home. This caused psychological distress to the youth as fathers make their lives harder and never supported them during this time.

“The help would have been there but my father drinks and sometimes makes me sleep outside because of the baby and other time he just gives you that look as if you should go and rent elsewhere..... The baby doesn’t cry and even with the first child he (father) would tell me to take the child to the father.” IDI participant thirteen

Most fathers did not financially support the youth during the maternity period. In addition, the money received from the partners of the youth who were responsible for the pregnancies was also not used to support them. Youth’ fathers spent it most times on alcohol.

“But the fathers, they only want to arrest the man who impregnated you, get the money from him, he eats it but does not care about you.” FGD participant

Some youth went to stay with their partners, but others tried to escape parental abuse by staying with other relatives because their partners had denied them accommodation, while others knew that their partners will not welcome them into their homes based on their reaction to an unwanted pregnancy.

“I went to grandmother’s place where I stayed for two weeks because I didn’t want father to keep on abusing me.” IDI participant three

“When he (father) got to know that I was pregnant he wanted to come and beat me up, so I ran away and went to my aunt.” IDI participant ten

The fathers also blamed mothers for their daughters’ pregnancies. This turned violent especially if fathers stayed away from home for work. Mothers were continually blamed for not taking good care of the girls. It sometimes led to separation of parents as mothers could not bear the mistreatment.

“That too brings about violence at home, you find that also your mother is being tortured; abusing her the whole night that you and your daughter knew about your plans and they also chase her.” FGD five participant

One mother who was blamed for her daughter’s pregnancy had this to say:

“It (pregnancy) caused trouble, the family got a problem. Like if you have a husband, since I am the one who stays with them (children), it can cause trouble. There can be change especially the man can even think you had planned it with your daughter. It almost spoiled my marriage but good enough after some time her father accepted what had happened.”
(Parent six, mother to IDI participant seven)

There are some parents who showed positivity to the girls amidst the disappointment of an unwanted pregnancy. They wanted them to feel accepted in the hope that they would not attempt a crude abortion and risk dying in the process. The legally restrictive setting for safe abortion services leads many of them to have an unsafe abortion, for example, the use of local concoctions or take an overdose of certain tablets or concentrated tea which leads

to adverse consequences for them and their families (Prada et al., 2005). Therefore, parents supported the girls during this hard time when they were struggling for acceptance from the family and pressures from partners to abort the pregnancies.

“Honestly, I did nothing, and I did not even show her (daughter) anger because I thought she might end up running away from home and try aborting thus ending up in problems or committing suicide.” (Parent six, mother to IDI participant seven)

“Now she (mother) used to tell me that I should never abort this pregnancy and I also listened. I also thought to myself that I can never do such a thing to die but the other one (partner) would tell me to abort it, and I would say I cannot. I would tell mother and she also told me that I should never do it.” IDI participant five

6.2.3 Youth partners relations

Some youth noted that their relationships with their partners were good before the pregnancy, except for the ones who were raped or conned into making love with the partners against their will. Some even welcomed the news of the pregnancy but due to the influence of family members, especially their parents, partners denied responsibility for the pregnancies. The men feared imprisonment and/ or the financial burden of a wife and child. They then intimidated the girls after receiving the pregnancy news so that the boys responsible for the pregnancies would not be identified.

“Me when I told him (partner) that I was pregnant... when I told him he just abused me together with his mother. For my case there was no mercy” FGD one participant

Acceptance of the pregnancy comes with responsibilities and girls take it as a privilege and relief because they are assured of some support from partners.

“Most of the men when they get you pregnant, when you try talking to them that you are pregnant the man just tells you for him, he cannot make anyone pregnant. I was lucky mine accepted but most of them just neglect you. Sometimes a man can end up beating you.”
FGD one participant

The boys know the repercussions of making someone who is under-age pregnant, especially girls still attending school (Buyondo, 2017; The guardian, 2018). The boys

would be imprisoned, made to refund parents school fees spent on the girl so far, and are sometimes forced to marry the girls or to take responsibility for mother and child.

“At school we are always tested so if they found that you are pregnant the nurse talks to the head teacher who later calls your parent and tells them, so that’s what happened. Mum was told, and they sent for me, later when I came mum told me that I was pregnant. With a lot of anger, she held my hand and took me home. She didn’t even allow me to pick my belongings from school. She was so angry with me and she started asking me lots of questions about the one who impregnated me, and I first refused to tell her. But she later found out by herself and went with the head teacher and they arrested the boy.” FGD four participant

Some youth went to live with their partners when they were either forced by parents or they had come to an on agreement with the partners. However, after a while, many situations resulted in quarrels and a lack of support for the girl. In most cases, partners did not support girls with money, clothing, and food. Therefore, with mistreatment, girls found no reason to remain with the partners. Thus, partners and their families seem to have used mistreatment, abuse and denial of basic needs to make the youths’ lives unbearable and eventually girls left the partners back to their parents’ homes.

“I stayed at the man’s place. I left when it (pregnancy) was at 3months, and I decided to come home. He was disturbing me, and I said let me go home.” IDI Participant five

“Also, me when I went back again, I saw that the man had started mistreating me, he would mistreat me in every way, I asked myself ‘where am I?’” IDI participant six

The partners tried as much as possible not to communicate with the girls, but the desperate need for support made youth to pursue different ways of communicating with them.

“I get the number from his friends and I call him and talk to him. He (partner) doesn’t call me but if I find the friend and he has airtime on the phone, I call him, and he says he will send the money but that’s where it stops.” IDI participant ten

When the partners were contacted for support, some kept promising to support them while others told them right out that they will not provide support.

“Because I have ever called him (partner) asking him for the baby’s sugar because at that time I felt overwhelmed. That time I didn’t have anywhere to get money. When I told him, he just told me ‘I am not part of that’ I also left him,” IDI participant six

Some youth had given up on partner support because when they asked, they were abused and never given the support, resulting in them no longer asking for any support. This youth had this to say:

“Like I told him (partner) that I might give birth the time is due, I told him to buy the necessary requirements. He just abused me ever since then I promised myself never to call him again.” IDI five participant

Some youths have developed positive attitude towards their future and that of their children’s by preparing to go back to school, complete vocational courses, engage in commercial agriculture, get employed or start up some income generating activities. This youth, like most of this study participants, plans to start working in order to take care of the child:

“When I was pregnant it’s my mum who looked after me. The father of the baby never even bothered to know about how I was. When I gave birth, he bought one dress for the baby and brought it. I am the one who takes care of myself and my child, and what I know at the moment is that am supposed to work for my child because this issue of just giving birth and think that a man can take care of you don’t work. So, I just have to work hard for this child that I so far have, the good thing I have one.” FGD four participant

Right now, I am planning to go back to school such that I plan for my child, when time comes for her to go to school; she should find me with some income such that she does not face difficulty in school fees or clothes to put on, that’s what I am planning right now.

The exception to this was when a pregnancy had been planned where partners supported youth with maternity needs as reported by youth and where the communication with partners was also good.

“I was working as a house girl. So, after getting pregnant, I boarded and came back to the village and he (partner) was taking care of me. When time for delivering came, he told me to board and go to stay with my aunt in Mbarara and deliver from there. He promised to continue sending me support and assistance. When I called him and told him am to be taken

to the theatre, he sent me mobile money (money transfer). After recovering, I came back and went to my partner's village to take the child for his family and then I came back to my parents' home." FGD eight participant

However, a high percentage of these girls are taking care of the pregnancy or children themselves or with the help of parents.

"Mine did not get me anything he has been drinking all the time he tells me he has no money." FGD two participant

6.3 Changes and needs after getting pregnant

This theme arose after reading and listening to the experiences of youth about their relationships and needs during this difficult period. It includes four sub-themes which centre on changes in their' health plus associated needs during this period, transition to adulthood and child care needs. The sub-themes are discussed below:

6.3.1 Health changes

Youth went through several health changes during pregnancy, at birth and after child birth. This included nausea and vomiting due to hormonal changes during pregnancy. This was a challenge since youth were in most cases hiding the pregnancy both at home and at school. The pregnancy is also associated with several infections and diseases like fever and the support for health care was limited.

"When I told mum, I was pregnant, during the second month, I started getting nausea, spitting all the time, then mum told me to start going for antenatal and I started going for antenatal. She started complaining, 'is that what you used to do at school', I just kept quiet." IDI participant three

Youth felt weak sometimes and this affected their day-to-day activities, such as walking, as IDI Participant Nine said "Now I take a shorter time because I move faster than when I was heavy (pregnant)." During this time, family support was paramount as they needed to travel long distances to access maternal health services. Parents, especially mothers, helped them with money to get motorcycles, the common means of transport used by the youth to access maternal health services.

“The time I got a boda (motorcycle), she (mother) is the one who gave me money, she said I wouldn’t be able to get there on foot.” IDI participant ten

Some partners also helped the youth with money for transport and those who had motorcycles also transported them.

“My partner would take me for instance whenever I would be going for antenatal care, leave me there and pick me up later. You know he was a boda-boda man, so he would find a way of balancing it.” IDI participant six

Other family members like sisters and brothers helped them with household chores of fetching water, cooking and digging. Community members also helped with some work, such as fetching water and washing clothes.

“I got a lot of help like my family helped me a lot in that I was not doing heavy work and they would give everything I needed; well-wishers also would give me clothes for the unborn baby (...) The locals would give food like millet flour and baby clothes.” IDI participant fourteen

6.3.2 Nutrition changes and needs

Youth experienced changes in their nutrition; they found some foods that they liked before the pregnancy distasteful and started craving other certain foods. As this IDI participant is quoted:

“I lost appetite at a certain level and I stopped eating matooke (green banana), I would want to eat posho (maize meal) only.” IDI Participant Eleven

Parents, particularly mothers, provided the youth with foods they craved, as this IDI participant noted “My mother would give me everything that I wanted. She would ask me, what I would feel like eating, and she would give it to me”. Meals while at the partners homes were insufficient for some youth during pregnancy as they did not get the foods they craved. Partners seemed to use denial of essential needs of youth in order to chase the youth away, and food was no exception.

“It was lacking, I was eating poorly, I was eating poorly...when I was 7 months, I left the man and went home but when I was about 4 or 5 months the feeding was very poor.” IDI Participant nine

Providing food for a breastfeeding mother increases the burden of feeding the family. After childbirth, youth needed foods that enhance breast milk. The period after childbirth is characterised by frequent eating because they need much breast milk for the baby, and this was sometimes a point of contention in a home as reflected in the words of this youth:

“And again, after giving birth you need to eat and drink a lot, so when the family members find you cooking, they start murmuring and complaining on how they are tired of those small pots being cooked by specific persons in the home.” FGD eight participant

There is a need for baby food during the postpartum period and youth had to work to provide for the children in instances when parents and partners were not supporting them with enough food appropriate for the needs of infants. Some were supported by partners and parents with baby food and drinks. This situation increased feeding costs since some families might not be able to produce appropriate baby foods like milk and soft foods in their homes. This meant that they had to buy these foods and parents mentioned that they would like more support with food appropriate for infants, as this mother stated:

“Like you know after delivery, the baby wants to drink, but we cannot provide, but most of the things, I did support her. Now it’s about the baby’s food and drinking, but for food it’s ok because we have, it’s what to drink which is the most important that I cannot afford.”
(Parent four mother to IDI participant four)

6.3.3 Dressing and hospital requirements

Youth found challenges with clothing due to changes in body size and shape or body image. As the pregnancy grew, they needed to change to maternity clothing. These were also challenging as they were often faced with having to hide the pregnancy due to the embarrassment of getting pregnant before marriage. They would therefore go for maternity care in hiding with tight clothing, including school uniforms, and this could also give rise to abuse from some health providers, as quoted:

“When you go to the health center in skirt and a blouse, the midwives tend to be rude to you because you are not wearing a maternity dress yet for you as a youth, you don’t want to wear a maternity dress because you are hiding the pregnancy. They abuse you and don’t work on you and you feel discouraged to go back.” FGD two participant.

At and after childbirth, there was a need to buy clothes for the child. Some youth did not have the money to buy enough clothes for themselves and the children, which affected the use of maternal and child care services, such as immunisation.

“You find that I don’t have soap, so I haven’t washed the child’s clothes, so I will fail to take the child for polio/ vaccination because of not having clean clothes. Or maybe my maternity dress is also dirty, so I cannot go with a dirty dress, or even I don’t have a book for antenatal care.” FGD two participant

Youth often found challenges with meeting hospital requirements in terms of gloves, birth mats, and sanitary ware. Lack of these items was a cause of reprimand from the health care providers and thus hindered them from accessing maternal health services. Having no hospital requirements was a burden to health care providers as they had to improvise in order to attend to young mothers as this health provider said:

“Sometimes we find the problem of lack of funds, most times, pregnant youth do not have anything, baby clothes, basin, what to eat, because they have been abandoned by their partners and family members, so they come to the hospital without anything (.....), you end up suffering with her.” Health Provider five (Female, Enrolled midwife)

A lack of hospital requirements was noted by all study participants as a major cause for the none use and avoidance of maternity care.

“Sometime failure to have the requirement needed at the hospital, what they should always go with for check-ups. They are always like ‘how can I go to the hospital without the requirement’? So, they refuse to go there.” (Parent five, mother to FGD five participant)

Parents, partners and community members tried to help them with clothes and hospital requirements.

“When I told him I was pregnant, he told me that is what he wanted. He continued giving some help up to when I told him I was due to deliver, and he told me to find him in Kabwohe and deliver from there although I had planned to deliver from Kyeizooba health centre. So, we went to ICOBI and they told us they could not help because their theatre was not functioning, yet the baby was in a dangerous presentation. I could not deliver normally. Then he went with me to the health centre, and then had caesarean in Mbarara. After that I went to stay with my elder sister who took care of me.” FGD eight participant

Hospital requirements are also obtained through the government program of providing ‘mama kits’⁷ which are provided free to pregnant women after they have had all the four ANC visits. They are thus an incentive for using maternity care:

“(....) we have mama kits every time they are pregnant; we give them mama kits. (....). We provide mama kits, mosquito nets to all but we prioritize youth when they come. For older women, they find mama kits when they come to give birth but for these young women, we give them mama kits to encourage them to come for delivery.” Health provider three (Female, Enrolled nurse)

6.3.4 Transition to adulthood

Another sub-theme that came up in this analysis is the transition to adulthood of these youths. Some got pregnant in order to either ‘trap’ their partners and get married or gain their freedom from parental control and mistreatment, and thus were ready for the transition. As this participant is quoted:

“I was tired of staying home, I was staying with my step mother and she would mistreat me. So, I also wanted to get pregnant and leave.” IDI participant two

However, to those whose pregnancy was unplanned, this whole experience was a fast transformation to adulthood. They were considered to be adults and trusted by parents to make decisions, such as where they wanted to access maternal services from, when they

⁷ This contains a plastic/delivery sheet for the patient to lie on, soap for the provider and the client, 3 pairs of gloves, cotton wool, cord ties, surgical/razor blade to cut the umbilical cord, cord ligature to tie off the umbilical cord, new child growth card & postnatal card

wanted to go, and they would go to health centres unaccompanied by anyone during ANC, as explained by this mother who did not accompany her daughter during ANC

“I treat her as an adult, so I imagine she will be able to explain herself.” Parents three, (mother to IDI participant eleven)

Youth started working to procure hospital requirements, provide for the needs of their children after childbirth, for example, in terms of clothes, food, drinks and shelter.

“I didn’t know how to dig, I got everything but now I have to work hard for everything. I was fat, but I lost weight and I am now the head of the family, I have to make sure the baby eats so my brain advanced. (...) before I wasn’t paying rent but when I got pregnant, I started contributing. She (mother) suggested it because she thinks the baby’s father sends me money, but I don’t tell her.” IDI participant ten

During this experience, they still received some guidance, advice and support from the parents who provided them with local medicines because youth admitted that they did not know anything about them. Sometimes parents reminded them of ANC appointments, accompanied them in order to access maternity care, especially during childbirth as no youth participant went to give birth unaccompanied and the support during child birth is credited. As IDI participant ten mentioned

“I went into labour at night and she (mother) escorted me and when the nurses called her, she would come so I felt I had the support of having her.” IDI participant ten

Parents still provided basic needs and never left youth alone during this experience, most especially their mothers. Parents helped with childcare, especially cleaning/ bathing the children, teaching them how to breast feed and feeding them. The parents also take care of the babies when the youth go to work.

“It’s my mother who supported me. By giving me, okay like whatever I wanted, taking good care of me and also encouraging me to go for maternal health services at the hospital. Even when I was going to give birth, she is the one who escorted me”. IDI participant six

However, this was all an extra burden for the parents who had to take care of both their children and grandchildren. The burden is increased when it is a single parent or widow and/or when youth leave the babies to go to work or for further education.

6.3.5 Child care

Since this was the first birth for most of the youth and given their early ages at birth, they needed a lot of help with childcare. Youth were helped with information on child care, for example, how to breast feed, bathe and dress the babies or give them medicine. This information was received from health providers, mothers, traditional birth attendants, grandmothers, older sisters and other community members who had ever given birth. These persons also did some of the child care activities for the young mothers, especially bathing, cleaning the umbilical cord and dressing the babies due to most youth not knowing how to carry out these tasks.

“To be honest I didn’t bathe the baby when it was young. There is a lady near us who bathed the baby and I started bathing him after the umbilical cord had fallen off. She would also dress him and then they would give him to me.” IDI participant seven

Youth started doing some of the learnt child care activities after some time. Youth who did not do some activities for their first children affirmed that they had since learnt how to do these and that they would do them boldly for the next birth because they had learnt from those who had supported them.

During this time, youth received gifts from different people, including clothes, food, drinks and a helping hand for household chores, for instance, when it came to fetching water, cooking, washing clothes and other heavy work.

“I got a lot of help like my family helped me a lot in that I was not doing heavy work and they would give everything I needed; well-wishers also would give me clothes for the unborn baby (...) The locals would give food like millet flour and baby clothes.” IDI participant fourteen

This participant states how community members helped with child care needs:

“And also, the community members would come and help me with some of the chores like fetching water for me, if they found a dirty cloth in the basin, they would wash it and hung it to dry.” IDI participant six

Help with household chores allowed youth to get enough rest and reduced time and energy on competing activities, subsequently allowing them to focus on care for the babies.

During the postpartum period, babies usually get health problems. During this time when babies were not well, parents and partners tended to take the children to hospital and provided the money needed for the child's care

“For me, I get some help from the father of my child. Whenever I call him, and I ask him for some money, he tries to send me something. For example, when the child is sick, I contact him, and he sends me some money for medication.” FGD eight participant

Limited child care support affects the use of health services for the next pregnancy as they do not have someone to leave the babies with. This limits the number of ANC visits they can have and child birth from the health centres. It was sometimes a source of reprimand from the health providers:

“But when I found her (health provider) this second time, she disturbed me because I had gone with my baby for I had no one to leave her with at home. So, when she asked is that your baby? I responded yes and again you are going to give birth? I responded yes, she did what—she started okay—she started abusing me that what made me get pregnant so quickly? That did I not know about family planning? I also told her that I did not know it that way. I did not know that that's how my blood is. Okay that is the one who mistreated me at the hospital.” IDI Participant Six

Pregnancy and childbirth also affected the prospects of these youth due to the girls dropping out of school or employment. The childcare needs also led to delayed resumption of school or employment until the child had reached a certain age and could be left under the care of another person. Having children and no child care support also affected the employment prospects as employers never wanted workers with children. This problem occurred more often in the field of manual jobs that did not require a higher level of education and this leads to poverty among a population that would otherwise be self-reliant.

“Sometimes they don't have the money to take the baby for immunizations, sometimes they don't have money for diapers and people are reluctant to hire you for work if you have a baby.” IDI participant ten

6.4 Community relations during the maternity period

This theme was subdivided into three sub-themes: to show i) community attitudes towards the pregnancy; ii) use of non-professional providers, and iii) customs and cultural practices during pregnancy and how they affect the use of maternal health services.

6.4.1 Stigma from community

Most community members' reactions were negative, and youth noted that the main problem with community members was rumour mongering about them. They usually talked about several negative things which increased the shameful feeling that confined the youth in their homes and limited their movements. This affected the use of maternal health services and was cited by all participants (youth, parents & health providers) as a reason for delay or non-use of ANC among unmarried youth. This was due to either feeling of shame or parents that had stopped them from moving out of the house to reduce the antagonistic community response.

“They usually come (for ANC) when they are around eight months and when you ask why, they say they were kept in the house and not allowed to come out, they said they should stay at home and not to go anywhere.” Health provider three (Female, Enrolled nurse)

Parents supported youth when faced with negative community reactions of rumour mongering and back biting, as one IDI participant mentioned:

“They (community members) gossiped about me but my mother encouraged me to stay strong.” IDI participant ten

Some community members also encouraged youth throughout the maternity period, helped them with herbal medicines, foods they craved for, drinks and clothes for themselves and the babies.

6.4.2 Customs and cultural practices

The communities where the youth lived had some cultural practices and beliefs in which most of the youth took part. These ranged from herbal infusions, herbal decoctions for bathing, sitting in, and applying/smearing on different body parts according to the particular cultural beliefs. However, some did not use them because they did not know they were pregnant until a later stage of the pregnancy or had no knowledge of the local herbs, while

others did not believe that they work. These beliefs, customs and local medicines were believed to improve the health of the mother and baby during pregnancy, as quoted below:

“It (‘ekyoganyanja’) helps to clean the baby in the womb that you give birth to a healthy baby.” IDI participant fourteen

And to quicken and to minimise pain during the childbirth process.

“That it (clay mixture⁸) helps in such a way that when time for delivering comes, you don’t experience a lot of pain.” FGD eight participant

Participants discussed the importance of these customs and beliefs, as reflected in the following:

“There is a belief that a person who made you pregnant takes you to his mother and the mother puts local medicine or herbs in your body after an incision. This is to avoid the umbilical cord from wrapping around the unborn baby’s neck.” FGD three participant

“They use local herbs which helps a woman when pregnant not to fall sick and feel weak all the time and for a smooth delivery.” FGD seven participant

Youth recognized that mothers, grandmothers, aunts and older women in the community were their sources of information about these customs, like the names and functions of local medicines. They also helped harvest the local medicines from the bush and gave them to the youth. Although, in some instances, they never disclosed the names and uses of the herbs they were given, and the youth never asked because they trust the people who supplied them with the herbs “they would just get for us and do not tell us the names.”

Local medicines affected the use of maternal services since youth trusted them to work. This meant that they could not go for maternity care or would start care late, as one FGD participant said:

“When a youth is pregnant, and she finds out that her mother or grandmother knows very well the local medicine, this may hinder her to go to the hospital bragging that the mother

⁸ This is locally called ‘emumbwa’ and is a mixture of clay and herbs believed to quicken childbirth

knows the local medicine that they will help her, thus not going to the hospital.” FGD five participant

“I think it all comes back to one’s beliefs. Like for me, I have always heard that local herbs cure stomach upsets (ekintu). I have never heard or seen any tablets or hospital medication for that problem. So, I chose to believe in the local herbs for that.” FGD eight participant

However, most customs and cultural practices do not affect the use of maternal health services. Youth noted that they can be practised along with maternal health care services although health providers discourage them from using them and there is available modern treatment for the medical reasons why the youth use herbs.

“Doctors always advise us not to take local herbs instead they give us tablets to swallow, saying that local herbs are not good for our health.” FGD two participant

“No, they don’t restrict us from using anything (local medicine). They advise that if you feel pain before taking herbal medicine, first go for check-up. There are herbs people take to increase blood but when you go to health centres with such issues, they give you iron tablets.” FGD three participant

6.4.3 Use of non-professional providers

Youth and their parents know the importance of accessing services from trained professionals, but they still choose to access maternity care from non-trained traditional birth attendants (TBAs). It was found that youth trust the TBAs and go to them for pregnancy checks and TBAs aid with childbirth. TBAs are trusted because they help them to get herbal medicine which is unacceptable in the mainstream health service system but is believed to give pregnant youth energy, assist the growth of a healthy baby and quicken childbirth. TBAs are not rude to young mothers and are cheap compared to accessing services in health facilities. Youth are also close to the TBAs in the communities. The long distance to the health facilities, as well as poor attitudes of providers were noted by all participants; parents, youth and providers as barriers to the use of maternity care, as was found in a report on why youth still opt for TBAs in Uganda (Global Press Journal, (2018). The significance of TBAs was quoted in the interviews as below:

“Okay for me what I know is that, when a woman is pregnant, the health providers—okay like the traditional birth attendants usually get for them the local medicine and they take. Whether to bath or doing what, but they use the local medicine.” FGD five participant

Another interesting finding as to why youth go to TBAs during pregnancy was to help them ‘hide’ the pregnancy so that it never bulges and never shows until childbirth. Since most of the youth are hiding the pregnancy from parents and school authorities, this option will be appealing to them. However, the pregnancy might not show due to some of the crude behaviour’s youth do while pregnant, for instance, tying the stomach and/or starving themselves which could be deliberate or due to reduced appetite for the available food. Since they are hiding their pregnancy, they will not get the required food from family. This was noted in one FGD as below:

“The traditional birth attendants make the pregnancy to mature but without protruding and then she (youth) studies without anyone noticing that she is pregnant. And when she is due (they do some rituals) that’s when it protrudes outside after she goes to the hospital and she gives birth and they say so and so’s daughter was studying how has she given birth?” FGD five participant

The negative effect of TBAs on the use of health facilities at childbirth was also due to TBAs discouraging women that if they use health centres for child birth, they will get problems like stillbirths or caesarean section, as quoted below:

“Now what I know, this happened to my aunt, she used to go to a traditional birth attendant for her check-ups, she (TBA) even told her ‘if you do not deliver from her place yet I have been giving you my local medicine you will have to get problems’. But the medicine didn’t work for her so she decided to go to the hospital to deliver and it was a caesarean, but this angered the traditional attendant and she started telling her, I told you that you should come and deliver from my place but you refused, that’s is why they had to operate you. These birth attendants sometimes scare these women to stop them from going to the hospital.” FGD four participant

6.5 Reproductive health information

The researcher identified three sub-themes about what aided the youth to gain information on the benefits of the use of the maternal health care services and to access the services and

information about prevention of future unplanned pregnancies. This includes sub-themes on sources of information ranging from where to access the maternity services, level of information on family planning and the level of the use of information, communication and technology for this sub-group.

6.5.1 Source of information on where to access maternity services from

The analysis found that the major source of information to access and use maternal health services for interviewed girls was the informal sources consisting of experiences or hearsay from others to guide the youth. Some of the information might have been outdated given the informers' ages at child birth, such as the mothers and older family members, like grandmothers, as well as community members who had given birth. The information came mostly from the person who the youth were close to during this time.

Village health teams (VHTs) and radios were also noted by youth and parents as sources of information that enabled youth to access maternal health services. The VHTs are relied on by the health system to mobilise pregnant women to go for maternity care.

“Village Health Teams, we (health providers) always inform them that when someone is pregnant inform her (woman) to come to the health facility for the service (...) our village health teams help us. They inform them to come to the health facility. Once there's someone pregnant they just write a small paper that you go to the health facility and they always come with those papers.” Health provider six (Female, Enrolled comprehensive nurse)

However, the main reason for ANC attendance was not the World Health Organisation (WHO) intended aim for the use of care for the mother and unborn baby. ANC use among most youths was mainly to obtain ANC cards in preparation for an emergency in case complications arise during the childbirth process outside of the health facility delivery, and to receive health commodities like *mama* kits and mosquito nets. The reasons for the none use of health facilities at childbirth have been shown in chapter five of this study and are documented in previous studies (Ndyomugyenye et al., 2006; Mrisho et al., 2009; Anastasi et al. 2015). In Uganda, health facilities usually do not attend to women at childbirth when they have not had any ANC, therefore, youth seek ANC to obtain ANC cards. This is

because health facilities need to have had some history about the woman regarding her pregnancy and health status, especially their HIV/AIDS test results.

“I didn’t even know that the pregnancy needs to be checked. I heard people ask me if I had gone for antenatal and I said no, I was in Kabwohe. They said that when it’s time to give birth they will ask me for the card (ANC card) and even beat me (if I don’t have). So, I got to know that I need one and that is when I got the courage to come (home) and go to the hospital so I can get the card.” IDI participant ten

Youth mentioned radios, VHTs and community meetings as their preferred sources of information about maternal health. They also noted that they should be informed early about the time and day of the discussions within community meetings and radio programs so that they do not miss them. Community meetings allow face to face interaction with providers (Nutbeam 2000; Nutbeam 2008), and the information would be tailored to group needs, especially those who do not access maternity care. The preferred sources of information are as quoted by this FGD participant:

“For me I think organizing workshops and through sensitization in villages by VHTs would do it better than radios because there are people without radios.” FGD two participant.

6.5.2 Information, communication and technology use

Youth were asked how ownership and the use of mobile phones and internet enabled them to access maternal health information. Most youth did not have mobile phones during pregnancy but owned phones at the time of the interview. One person who had a mobile phone during pregnancy did not own a phone since giving birth because her partner took it from her. Most youth have heard about the internet, but two IDI participants were not sure about it and almost all had never used the internet; however, they had seen others use it or have heard about its use. When asked about the use of phones and internet to access maternal health information, those who had no phones or had never accessed the internet did not know how it can be used, as expressed in statements like:

“I really don’t know since I have never used internet.”, IDI participant three

Yes, but since I have never had a phone or used internet, I can’t tell. IDI participant fourteen
Youth have used phones to call health providers and inquire about some

information whilst others knew that they can use the phones to call hotlines and make some health-related inquiries. Providers have also called youth to find how they were faring during the postpartum period. One IDI participant who was called by a provider during the postpartum period had this to say:

“When I still had a phone after giving birth to my second child, after like one and a half months, I felt so much joy when doctor called me, asking me about the baby—“are you the one who lost a baby?” I responded yes, that are you fine now? I said yes. He (health provider) comforted me in everything and he continued to advise me how I can be careful (not get pregnant) this time around.” IDI participant six

Youth noted that phones can be utilised by health providers to give them maternal health information since they do provide the telephone numbers when they go to health facilities. Phones might not be used to get maternal health information but are useful during the maternity period. They suggested ways how phones can be helpful during this period, for instance, to arrange for transport to the health facility and informing family members in case of an emergency, as youth shared:

“Phones can help in calling the boda boda (motorcycle) cyclist to pick you up, they can also be used to call the ambulance and calling the nurse in case you are not feeling fine.”
IDI participant three

“They help because you can be in Kibaale (Health facility), when they have taken you thinking that you have not yet given birth, in one minute they make a phone call that so and so has given birth, or she is not feeling well.” IDI participant one

6.5.3 Information on family planning

This analysis found that there was limited information and/or use of contraceptives among youth. This included limited knowledge about emergency contraception. For instance, one girl who was raped told her parents shortly afterwards, but parents took no action, and instead started mistreating her. In addition, no HIV prophylaxis was sought for this youth. Most youth reported that their pregnancies were unwanted and unwanted pregnancies have been found to limit the female youth’ choice and empowerment since they drop out of

school and cannot find gainful employment (Coombs & Freedman, 1970; Atuyambe et al., 2005; WHO, 2014).

“I went back home and told mum, that so and so’s son has raped me from the well. My father started saying that is me who took myself there, he knows and that he is aware that I love the boy. He also told me that if I wanted, I should follow the boy. But I told them, but you people I have already told you what has happened to me, if you can do anything to this boy, do it before it’s too late. And in case I get pregnant, I will stay here, if you do not want to follow-up on him. My father started saying, you now talk to me as if am your child, I told him, the fact is I have told you, we always do not tell you our problems, but now I have told you.” IDI participant three

No youth reported to have received information about family planning even during the postpartum period. Most of them did not have postnatal care except for immunisation of the children. This was a missed opportunity for counselling these youths about contraception and helping them make an informed decision. The limited knowledge about contraception was evidenced by the too close pregnancies among youth immediately after child birth as well as too many births as youth below twenty years already had more than one birth/pregnancy while unmarried. For example, one youth (IDI participant six) became pregnant in about two months after childbirth. Too close pregnancies were a source of abuse from health providers especially for youth who did not have child care for the older child, yet the youth acknowledged that they did not know about family planning.

“But when I found her this second time, she disturbed me because I had gone with my baby because I had no one to leave her with at home. So, when she asked is that your baby? I responded yes and again you are going to give birth? I responded yes, she did what—she started okay—she started abusing me that what made me get pregnant so quickly? That did I not know about family planning? I also told her that I did not know it is that way. I did not know that that’s how my blood is. Okay that is the one who mistreated me at the hospital.”

IDI six participant

The parents of these youths were also worried about their daughters becoming pregnant again due to fear of more embarrassment and increased burden for child care for births outside marriage. The parents also would like health providers to counsel youth about

family planning to prevent future unplanned pregnancies. This points to limited communication between the parents and their daughters about some of the sensitive issues like family planning. The poor communication between parents and their daughters could be the reason why the youth do not disclose the pregnancies to the parents.

“For my case, I would have wished them to get some guidance on the dangers of conceiving at that tender age, and encourage them not to fall victims (become pregnant) again.”

Parent two, father to IDI participant three

“Though people advised us to opt for abortion, I said since she decided to get pregnant, let her give birth; because even if she aborts, she can still get pregnant and give birth (.....) They (health providers) need to tell them how to protect themselves from pregnancies.”

Parent six, mother to IDI participant seven

6.6 Expected support during the maternity period

This theme is sub-divided into expectation of support from family members, especially fathers and mothers, and expected support from partners as this analysis found that those are the people from whom the youth were hoping to receive support from during this time.

6.6.1 Expectations from family

After identifying the different areas and ways in which family supported them, youth were asked for the support they had expected or expect from different family members, like fathers, mothers and other family members. The expectation from family depends on the support they had had before the pregnancy. Some parents had not supported the youth before the pregnancy and thus the youth did not expect much from them.

“No, I was not expecting anything, because all along before getting pregnant, he (father) never used to give me anything. When I was young, he never used to provide for me.” IDI participant four

The major support most youth required from their fathers was care and not being abused. Youth wanted fathers to continue supporting them as their children with finances so that they can buy what they needed during this period, for instance foods they craved during pregnancy, hospital requirements, baby clothes, baby soap and oil. They also wanted

financial support from the parents in order to start small businesses that can help them raise some money to look after themselves and their children.

“(…) our fathers shouldn’t beat us in case we make such mistakes, they should just talk to us as human beings.” FGD four participant

“I would want him (father) to support me and see me as his child ok, that even if my daughter didn’t get married, let me start for her something to do but he cannot. (…). A business like a retail shop or a small hotel something like that.” IDI participant thirteen

Youth expected fathers to help when partners had denied the pregnancy or were not supporting them with basic needs for the youth and child, including taking youth back to school after she gave birth:

“When it comes to say like my boyfriend despising me, I would like my father to stand with me advise my boyfriend and confront my boyfriend’s family in case of anything.” FGD two participant

Most youth were satisfied with their mothers’ support as they were the most supportive for all participants. This is reflected in statements like:

“Am so grateful to mother because she has really been there for me, any help I need she has been there to give it to me” IDI participant three

“Considering the support mother gave me, it was enough because she supported me in every way.” IDI participant Six

However, some youth still needed more advice on child care from mothers because they felt that they never received enough information from the different sources available and thus needed more in preparation for their new motherly roles. Most youth trusted their mothers for such advice. They wanted mothers to accompany them for ANC as most youth said they used to go alone for ANC. This would give them the needed support during this time, and it could have reduced on the mistreatment from the health providers.

“Like escorting me to the hospital, she (mother) should have supported me. She should also give me clothing and food.” IDI participant two

During the postpartum period, youth wanted mothers to massage them. In Uganda, postpartum massage is done by close family members, but not by a therapist as observed in developed countries. Therefore, youth needed massage from their mothers who have had postpartum massage themselves. Postpartum massage is believed to help with stress relief, relaxation, better sleep and improved breastfeeding (Field et al., 1999; Field et al., 2004).

Youth also wanted more mother support with child care, such as breastfeeding support, as well as providing baby needs, and care for the child when sick. This could be because they were experiencing this for the first time, so they needed support, guidance, hands-on training and advice from someone who had gone through this process, was close to them and whom they trusted.

“For mum, I was expecting her to give me whatever I asked her, buying the baby’s clothes, in case the bay is sick to take her to the hospital.” IDI participant five

6.6.2 Expectations from partner

Most youth were not happy with partners who did not support them during this period because they did not fulfil their promises, especially when it came to youth who said that the pregnancy had been planned. They had planned to have the pregnancy, but after getting pregnant, the men changed, communication became poor, and the support was not forthcoming. Some talked ill about these girls, which increased the embarrassment felt by the youth. They were expecting these men to marry them as they had promised, but most of the men abandoned them after finding out about the pregnancy, and several of them even denied the pregnancy.

“The man responsible for my pregnancy should also care, sometimes you call him, and he tells you off to never call him again because he is not responsible for the pregnancy. They tend to be rude forgetting all the promises they made, how they promised to take you to their home and marry you that you should not worry even if you get pregnant. But when you call him, he assures you how you are not his type and how you don’t belong anywhere in his family. This can destabilize me, and I feel like not living anymore. So, I need him to talk to me well and fulfil his promises or show that he will make it.” FGD two participant

This participant also had this to say about her expectation for the partner to marry her:

And another thing, it also needed, that if you get pregnant and you are at home, you go to your partner so that he takes care of you properly, but when you are home, he says, 'after all her parents are there they will take care of her.' He does not care completely; he does not even give you anything.” FGD five participant

They had expected these men to stand with them during this time, provide the basic needs for the mother and baby, accompany them to the hospital, and be supportive in many ways for both to the youth and the baby:

“It was his child, so I wanted to stay with him and not burden my parents, I wanted to give birth to the child, and he looks after it. Just like others went with their partners to the hospital, I also wanted to go with mine, so they can attend to me very first instead of sitting there and they attended to me last. Even when I fell sick, I wanted him to know because I would fall sick and be badly off and he wasn't there, and I would regret.” IDI participant ten

They also hoped that the partners would be able to provide school fees for the children when they start school; something which seems to be the most pressing need for young mothers.

6.7 Contradictory perspectives of youth and parents

This research found some contradicting views about some issues that were identified during this study. These came from the analysis of interviews among the youth and their parents. These included contrary views on parental support and partner support between parents and their respective daughters. With parental support, one parent reported to have fully supported the daughter's needs during this period, including nutritious food, money and accompanying her to the health centre. On interviewing the daughter, her testimonies contradicted that of the father stating that it was the daughter who was verbally abused most often, who was subjected to hard labour while pregnant and who received no support whatsoever in terms of requirements. Moreover, the mother who had tried to support the daughter was also abused for wasting more money on an already failed daughter. In this study, the parent is a male, parent number two, and the youth is IDI participant three. She went back to school and was being supported by the mother and the school's head teacher, but the father still verbally abused those who supported her. Ironically, during his

interview, the father said he would support a girl if she wished to go back to school after child birth.

Some of the father's statements include:

"You have to handle her in a delicate way; otherwise she can easily have a miscarriage or an abortion. So, you have to handle her with care until she can give birth"

About nutrition, the father said

"Yes, because the girl is still young, I have to feed the child very well, giving her balanced diet. In case you do not give her a balance diet, when the expected delivery time reaches, she may fail to push the baby. In most cases, you find that she is very selective with the foods she needs to eat, so you have to feed her very well. Sometimes, she does not like potatoes and cassava. She would want to eat meat, greens after preparing them very well"

This is what the daughter said that contradicts some of the father's responses:

"Then father started saying I should go dig and make blocks because he is not the one that sent me there, that it's me that led myself to getting pregnant, he used to abuse me, but I kept silent and would go behind the house and cry. So, I kept going to Kibaale, mother giving me money but father abusing her that she's taking care of a girl who doesn't care but wastes his money."

This kind of contradiction shows that the parent knows what is socially expected of him as a father to a pregnant unmarried youth, but he could have acted this way due to anger and disappointment. He also mentioned that two of his other daughters have had births before marriage, so his actions show a very disappointed parent. Actions of violence from this man towards the daughter were reported by the VHT and most people in the community knew about his particular case.

Another contradiction was with partner support information from the youth and their parents. Some of the youth said that the partners supported them with theirs and their children's needs, yet the parents said the partners did not support them. Youth also said that the parents knew of their partners, had met the partners and that they had promised to marry them, yet some parents did not know of the babies' fathers and were not sure about their marriage plans. This is the case of participant seven with her mother (Parent six). IDI Participant seven said:

“He (partner) gave me what I wanted and gave me money to go to the market. (...) I came back home but he gives me what I needed, and I was almost due we went to the market and bought stuff for the baby. (...). He wanted to take me, but I realized I was not yet 18 years, so I decided to stay home, and my father also refused so he decided to just look after his child.”

While her mother had the following to say about the partner of her daughter:

“No, (support from partner) because I don’t even know the man who impregnated her. If I tell you that I know him then I will have lied to you; I have never seen him. (...). No, she has never told me anything, she just tells me the man is there. He has never given any help for the baby. It is us who support the baby.” Parent six, mother to IDI participant seven

This youth also mentioned that she had gone to her father when labour pains began, therefore, youth understand the ideal relationship that should be there between them and the partners and the support they should provide. This differs to the real situation on the ground. Therefore, this analysis shows that participants responded from a point of view of what was socially accepted rather than their actual experiences.

6.8 Discussion of findings

This chapter explored the experiences of unmarried youth from the time they or their parents get to know that they are pregnant and throughout the maternity period both in their homes and in the communities. This includes the way in which family and community, including their partners, reacted to their pregnancies, how their health changed, and variations in the feeding, clothing and living arrangements. Community reactions to their pregnancies and the youth' perspectives with access to maternity information is presented. These are discussed in consideration of prior literature as below:

Prior studies have reported that youth who had premarital pregnancies were physically and verbally abused at home (Stewart & Cecutti, 1993; Parker et al., 1993; Ilika & Anthony, 2004; Atuyambe et al., 2005). In this study, the parental reactions to their pregnancies was mixed, with most fathers displaying negative reactions including physical and verbal abuse even up to the postpartum period. Domestic violence has been found to negatively influence the health of both the mother and the unborn child, through anxiety and abortion and her poor use of maternity care (Garcia-Moreno et al., 2006; Claudia et al., 2006). This is because when youth are not supported, they feel discouraged and do not put in any effort to attend maternity care, as was reported in this study. Studies have found that fear of abuse causes delay to disclose the pregnancy to parents, and this affects any timely use of maternal health services (Reibel et al., 2015; Hokororo et al., 2015). In this study, youth hid the pregnancies until later stages, sometimes up to when parents discovered it themselves. This led to late start or non-use of maternal health services among these youths.

Prior studies have also found that partner violence due to an unwanted pregnancy was associated with no support to the youth to access maternity care (Weimann et al., 1997; Atuyambe et al., 2005, 2009; Gross et al., 2012; Reibel et al., 2015; Anderson & Rahn, 2016). However, reduced stigma of adolescent pregnancies was related with higher ANC visits by adolescents in Peru (Ryan, 2009). In the current study, some youth had no contact or had poor relationships with the partners. Therefore, they lacked partner support with basic requirements to access maternal health services which reduced the chances for unmarried youth to use maternal health services, especially inappropriate dressing and lack of hospital requirements. However, some youth were supported to access maternal health services in terms of finances, transport support, clothes both for themselves, and the baby

and other hospital requirements. This study suggests that partner support influences the use of maternal health care services by unmarried youth.

A study has found a positive association between parental support and successful outcome for the adolescent and her child during the maternity period (Dallas, 2004). In this study, the parental support was unpredictable throughout the maternity period, and this affected their use of the maternity services. Some fathers provided no support throughout the maternity period, while mothers and some fathers later changed their behaviour and became supportive. This analysis found that mothers' support for youth was apparent throughout the maternity period, and mothers accompanied the youth to access maternal health services especially during childbirth. Parents supported youth in order to deter them from aborting. Parents have been found to be primary parents for the adolescent and carers for the grandchildren among low income African-American families (Dallas, 2004). Even in this study, parents of the youth were carers for both the youth and their children. They supported the youth with child care, teaching the youth child care activities such as bathing and dressing the baby, and breastfeeding. Other family members helped the youth with child care, information on local medicines, and providing the local medicines themselves, as was found in another study conducted by Panzarine, (1986).

Apart from economic support, social support from family has been found to improve the psychological well-being of adolescents (Barth et al., 1983). Parents, especially fathers, and partners need to understand the impact that their mistreatment and denial of the pregnancy has on the wellbeing of the youth and her pregnancy outcome. A socialisation program gave rise to positive pregnancy outcomes in North Mexico where family members were helped to adapt and change to support the pregnant mother (Domian, 2001). This can be applied in Uganda to help families accept and support unmarried youth. Youth and their parents should also be supported with income generating activities, and revolving funds to be able to support and meet the needs of the youth and their children during this time.

Incentives in terms of *Mama* kits that contain essentials to use during childbirth encourage women to use maternal health services, especially health facility births, since it makes the process affordable for the youth (Austin-Evelyn., et al, 2017; Massovon., et al, 2017). There is a government policy of providing *mama* kits (delivery kit) in Uganda to increase women's preparedness for childbirth. However, these kits are usually out of stock and are

expensive for youth to buy in Uganda (Waiswa., et al, 2008). This study also found that *mama* kits were sometimes out of stock and the youth had to buy the hospital requirements. Given their economic conditions and limited support from parents and partners, buying the hospital requirements is sometimes not possible for them, and this limits their use of health facilities at childbirth. Therefore, government should ensure that supplies like *mama* kits are always available to increase youth' use of maternal health services. Moreover, most youth are sometimes not ready for child birth since they do not know they are pregnant, thus, having readily available hospital supplies is very important for unmarried youth.

Studies have found that women's cultural beliefs play a part during pregnancy and child birth, including the use of local medicines (Burk et al, 1995; Maimbolwa, 2003). Some of the cultural beliefs are harmful and discouraged the use of maternal health services, for example, the belief that child birth is the test of the woman's strength (Kyomuhendo, 2003). Some studies found that some cultural beliefs stopped women from accessing maternity care because of fear that their beliefs will not be respected (Burk et al, 1995; Kwagala, 2013). In the current study, youth were found to have used local medicines that they believed would give them energy, increase blood levels, widen the birth canal during pregnancy, and quicken labour. In this analysis, youth did not report hospital procedures that violated their cultural beliefs, only that health providers did not approve of the use of local medicines, and were discouraged from using them, especially the herbs taken during the pre-birth pains' period to quicken the child delivery process.

Pregnancy is related with a change in nutritional needs as pregnant females crave certain foods and avoid others, in order to enable foetal growth (Miller, 2011). Youths in this study reported to have found foods they liked before pregnancy distasteful and craved other foods. This is because pregnancy and breastfeeding increase the nutritional needs of the mothers to meet the energy, proteins, vitamins, and minerals needs during the pregnancy, as well as during lactation (Picciano, 2003; Butte & King, 2005). However, the economic conditions encountered by both youth and their families and/or partners created a situation where their nutritional needs could not be met. Some youth were supported by mothers who provided the required foods, while those who stayed with the partners reported inadequate feeding. Poor nutrition has been found to affect the mother's health, the pregnancy outcome and overall child development (Pitkin, 1977; Martorell, 1997; Lone et al., 2004; McMahon

et al., 2014). Youth should undergo some medical tests to check nutritional deficiencies in pregnancy during ANC and they should be counselled on appropriate nutrition and nutrient supplementation available, especially for those in need of iron, as advised by Carroli et al., (2001).

Several studies have found that youth and women in general access maternal health services from traditional birth attendants (TBAs), because they are friendly and supportive (Chaibva et al., 2009; Kabayambi, 2013); not economically demanding (Kowalewski et al., 2002; Van Ejik., 2006; Mwangi & Warren, 2008; Atuyambe et al., 2008); and are easily available (Atuyambe et al., 2008; Wilunda et al., 2014). Studies in Kenya found that TBAs offer flexible payment as they can accept to work on credit or allow women to pay in kind, in terms of agricultural items or labour on farms (Jansen, 2006; Van Ejik., 2006; Mwangi & Warren, 2008; Ijaiya et al., 2010; Tebeu et al., 2012). Analysis of data from African countries showed that 180 million births were projected to be unsupervised by trained birth attendants by 2015 (Crowe et al., 2012). Indeed, in this study, youth revealed that they saw traditional birth attendants during ANC, while others gave birth with assistance from TBAs. This was because TBAs are trusted, not expensive, provide culturally accepted care especially by providing local herbal medicine and are located within the communities. This affected the use of maternal health care services. The identified poor economic conditions, long distances, and poor attitudes of providers that concurs with Teagle & Brindis (1998), Atuyambe et al., (2005), Van Eijk et al., (2006), Arthur et al., (2007), Chaibva et al., (2009), Chaibva et al., (2010), Wilunda et al., 2014; Hokororo et al., (2015) and Reibel et al., (2015) are barriers to the use of maternal health services among unmarried youth in Uganda. Therefore, efforts to have maternal health care services accessible from a physical and economic standpoint for the youth in Uganda are needed.

Since these traditional birth attendants are trusted for being supportive, the formal health sector could tap into their services by consolidating them with trainings on better maternal health care and identifying signs of pregnancy complications to reduce on the death of women and infants in the hands of TBAs (Hodnett, 2012). They could also be supported with delivery kits to improve on the hygiene and reduce on postpartum infections for both the mother and the baby. Moreover, they could be the only available option for poor youth residing in rural areas that are far from health centres (Essendi et al., 2011). TBAs should

be involved in the referral process, to enable timely access to the services rather than discourage them, since providing a service to these mothers is their source of income. They should thus be compensated for each woman they refer to the health centres, as studies found that being compensated increased the TBAs referrals and the number of women accessing skilled maternity care (Essendi et al., 2011; Tomedi et al., 2012; Miller & Smith, 2017).

Also, Uganda should review guidelines from countries that have integrated TBAs into their health system. Foreexample, in Kenya, TBAs including retired midwives, are trained and observed while carrying out the procedures in the maternity units. They are then certified and supported with supplies from the Ministry of Health to start providing maternity care in the communities or refer women to a hospital to be attended to by a self-employed, skilled midwife (TBA) living in the community during child birth. This helps with support for the mothers from the “non-rude” TBAs, and in case of an obstetric emergency, the trained professionals assist with the birth (Mwangi & Warren, 2008; Byrne & Morgan, 2011). However, this requires the health professionals to respect and support TBAs when they refer or come to attend to women from the health centres (Hodnett, 2012).

There is increased advocacy for mHealth⁹ especially in under-served rural communities, due to the increased mobile phone usage, and because the mobile phone is not a complex piece of technology (Mechael, 2009; Akter & Ray, 2010; Catalani et al., 2013). Existing literature has found a positive correlation between mHealth and improved maternal and child outcomes (Tamrat & Kachnowski, 2012), follow-up appointment compliance (Kunutsor et al., 2010; Betjeman et al, 2013; Hall et al., 2014), treatment adherence, especially among HIV patients (Pop-Eleches et al., 2011; Rodrigues et al., 2012; Hall et al., 2014), and data gathering (Tomlison et al., 2009; Hall et al., 2014). However, according to this analysis, some participants did not own mobile phones, and most of them have never used the internet. Most youth in this study had registered the mobile numbers of the people with whom they were staying with at the health centres. However, some changed

⁹ The Global Observatory for eHealth (GOe) defined mHealth or mobile health as ‘medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs) and other wireless devices’ (WHO, 2016: p6).

residences during the maternity period and lost touch with some people, especially partners and their employers. In addition, using someone else's mobile phone might compromise the youth' privacy and confidentiality (Chang et al., 2013). There is also a problem of poor mobile telephone network coverage and poor access to electricity in rural areas, which render mobile phone maintenance and use virtually impossible (Chang et al., 2011; Betjeman et al, 2013). The best would be to provide the mobile devices and train them how to use them in order to access passcode protected health messages when short messages are sent (Siedner et al., 2015). However, youth in this study also prefer to get maternity care information from health centres, radio and community meetings as reported in a study among school-going adolescents in Uganda who preferred religious organisations and schools to relay health information, rather than using phones (Mitchell et al., 2011). Access to information from multiple sources was found to increase the use of ANC among adolescents in India (Singh et al., 2014). Access to information from different sources help to overcome the weaknesses of each method (Gross et al., 2012). Thus, maternal health information to youth should be shared through their preferred modes other than mobile phones.

6.9 Summary and conclusion

This chapter explored the experiences that unmarried youth go through during the maternity period, and the support they receive from family and community. The Thematic Interpretative Phenomenological Analysis used established that youth had positive and negative experiences at home and in the community. After knowing about their daughters' pregnancies, parents were disappointed and quarrelled with youth, but later some accepted this situation and helped girls not to abort, and to access health services. Parents were primary sources of information, encouragement, advice, financial support, and other requirements, like food, clothes, and shelter for the youth and their children. Some parents remained abusive throughout the maternity period and wanted girls to go to their partners and leave their homes. Some did not want youth to continue with school after childbirth and did not support youth who went back to school.

Some partners and their families also accepted the pregnancies and supported the youth and the children during this time. However, some denied fatherhood, abused the girls, moved to far off places, and did not help youth during this time. In the communities, youth faced

negative reactions like rumour mongering, while other community members helped them with information on maternity care and cultural beliefs during pregnancy. This analysis has also presented some of the support youth expect from their families and partners, along with some contradictory views between parents and youth in terms of parent, and partner relations and support. The medicinal claims of the herbal medicines need to be validated to increase the level of confidence in their use and this could also generate incomes for local populations (Tabuti et al., 2003).

This study shows that the experiences of unmarried youth varied through the maternity period in their homes and in communities. A few are well cared for in terms of accessing maternal health services by parents, relatives, and partners through the information shared, subsistence, and financial support provided to access the services, plus buying hospital requirements. On the other hand, the majority were not well cared for and experienced abuses at home, especially by fathers. There is a need for sensitisation of parents to treat youth well, especially fathers, throughout the maternity period as emotional and physical abuse leads to poor use of maternal health services. Partners and their families should also be sensitised so that they treat youth well and provide the basic needs to both the young mother and her child.

Alternative sources of information, like radios and community meetings can also be used to share maternity information for youth, and they should be reminded of when such programs will be available, so that they do not miss them. Economic empowerment of youth is also paramount so that they are able to get proper nutrition, appropriate clothing, other hospital requirements, and transport to the health centres. There should be more information on the negative effect of the use of local medicines and TBAs, and the positive impact of using maternal health care on the health, and mortality of the mother and baby, especially through VHTs and community meetings. Community-level discussions need to focus on the reduction of stigma against unmarried youth who get pregnant.

Given that youth still access maternal services from TBAs, efforts should be made to make the TBA services safe through equipping them with better maternity care skills, to be able to identify pregnancy complications, and provide them with delivery kit supplies to reduce on postpartum infections. The integration of TBA services in the formal health sector is

also paramount. The contradictory perspectives from parents and youth show that both know what is socially expected, which might be different from what has been experienced, therefore, researchers in this research area need to interpret the results with caution.

7 CHAPTER SEVEN: HEALTH PROVIDERS PERSPECTIVES AND YOUTH EXPERIENCES DURING THE MATERNITY PERIOD

7.1 Introduction

The aim of this chapter is to understand unmarried youth experiences at the health centres. A phenomenology research approach was employed to obtain an in-depth understanding of lived experiences of unmarried youth, during the maternity period from persons who experienced it, that is, youth and other individuals who had a glimpse of youth' experiences. These other individuals include parents and health providers. The research was approved by the University of Hull, School of Education and Social Sciences ethics review committee, Mildmay Uganda Research Ethics Committee and Uganda National Council of Science and Technology. The study was carried out in Bushenyi and Kibale districts in Western Uganda due to observed poor levels of the use of maternal health services among unmarried youth especially antenatal care. The youth mentioned here consisted of unmarried females who were pregnant or had had a live birth within three years before the fieldwork began and were aged 15-19 years. Fourteen in-depth interviews (IDIs), and eight focus group discussions (FGDs) were carried out among the youth. Seven IDIs with parents of these youth and seven key informant interviews with health providers were completed. Interviews and FGDs were conducted by research assistants from Uganda with experience in qualitative data collection and who were fluent in Runyoro and Runyankole languages, the native languages in Kibaale and Bushenyi respectively.

The interviews were audio recorded and transcribed verbatim into written word form. Adolescent participants were aged 16-19 years and two had become pregnant before they were aged 15 years. Most had incomplete secondary education; none had tertiary education. Three of the 14 IDI adolescent participants wanted to get pregnant. Data analysis using Thematic Interpretative Phenomenological Analysis was conducted. The researcher read through the transcripts, identified codes and applied these codes to the proceeding interviews. New codes that came up were added to the list of codes already established. The researcher then grouped the codes into themes and added her interpretation and subtexts behind what participants had said, in order to model health providers' perspectives and young women's experiences at the health facilities during the maternity period, thus giving

rise to the Interpretative Phenomenological Analysis here (Braun & Clarke, 2013; Creswell, 2012). (Detailed methodology in chapter three and chapter six, section 6.1).

The main Research question was ‘What are the health providers’ perceptions and the experiences of unmarried youth at the health facilities during the maternity period?’ The only theme presented in this chapter is about the care and treatment that the youth received at the health centres from health providers. This care was both positive and negative, and revealed both good and poor experiences for the youth. This included the attitudes of health providers, waiting times at the health facilities and the quality of the services received which are detailed in the next section. In addition, since the sequential study design was employed, qualitative data was used to explain unique quantitative results. Therefore, the integration of quantitative and qualitative results is presented in this chapter.

7.2 Care and treatment at health centres

All youth expressed their relationship with providers while in health centre. This is not surprising since this study was about their experiences in the use of maternal health services, and the interviews included detailed questions on these experiences. It is evident that youth had mixed treatment from providers during the maternity period. Youth look at providers’ care as a break from the negative attitudes from family, thus providers need to understand the role they play in the lives and pregnancy outcomes of the youth. This was noted in the words of an IDI participant:

“Yes it (care from health providers) was necessary because for the parents you disappointed them, and they are angry, when the doctors treat you badly you can end up aborting, eventually you die.” IDI participant eleven

Three sub-themes emerged from this analysis relating to; i) attitudes of providers towards the youth when they came to access the services, ii) the quality of services received, and iii) the waiting time to receive the services.

7.2.1 Attitudes of the providers

Prior studies have showed that providers’ attitudes influence the use of health services (Teagle & Brindis, 1998; Chaibva et al., 2009; Chaibva et al., 2010). This study analysed the participants rating of the attitudes of health providers, and this sub-theme is further

divided into; i) mistreatment by providers and ii) professionalism during maternity care of the unmarried youth, as it was found that youth had both negative and positive experiences.

7.2.1.1 Mistreatment by providers

This analysis found that youth were verbally and physically abused by the providers. The words abuse, mistreatment, rude, and poor treatment by providers were common expressions about health providers' behaviour towards the youth during the maternity period. This was reflected in the following statements:

“Abusing us became a song at the health center” FGD five participant.

“They (health providers) will abuse you; you can even think they are drunk just to abuse you.” IDI Participant five

“Some midwives are very rude and abusive, so they (youth) fear to go to the hospital.” IDI three participant

“Some nurses are treating the mothers poorly, but others take good care.” IDI Participant seven

The major causes of these abuses were sometimes beyond the control of the youth. It was sometimes due to factors such as the young ages of these youth at pregnancy and when giving birth as most of their pregnancies are unwanted; something which points to poor access to youth-friendly reproductive services including contraception. They were also sometimes ill-treated for their late start of ANC. Indeed, some youth did not know they were pregnant until well into their pregnancy, or even in the latter stages of the pregnancy. Other causes of mistreatment were due to lack of hospital requirements like gloves, birth mats, not wearing a maternity dress and/or too close pregnancies. Therefore, health providers need to understand the youth they deal with and the reasons behind some of their actions. These youths need counselling in order to know the negative effect of these choices, such as the hiding of pregnancy from immediate family members like parents or guardians and how it can impact the provision of other hospital requirements:

“The health workers treat us harshly. Sometimes you go to the health center dressed in a skirt and a blouse, because you don't have a maternity dress, so the midwife insults you for that. Maybe you don't have a cloth to lay on the bed and a birth mat, so they can't treat you. The midwife tells you that if you are poor why did you get pregnant? Or she does not attend to you and tells you to first get the requirements.” FGD two participant

The imbalance in power relations between providers and youth had a detrimental effect on the care and support during childbirth, resulting in the youth not being attended to sufficiently. Therefore, youth did not express themselves and their health conditions. They were often left alone during labour and realised that being ‘too demanding’ of the providers would cause mistreatment. Many decided to keep quiet and attempted to attract care and attention by appearing modest and uncomplaining in the eyes of the providers as stated below:

“That is how I took it because not everyone was treated the same way. If you try to order them around, they treat you differently but if you are humble, they handle you well.” IDI participant thirteen

Youth expressed that they would want to be cared for during the maternity period with sympathy, respect as human beings and not to be abused in order to go through the maternity period safely.

“Like for me I would prefer to be handled well and with care without abusing and being harsh to me and I get back home well. Knowing at least I gave birth well, got medication and wasn’t harshly treated. Yes, we get pregnant when still young and mistakes happen, but we don’t deserve to be treated so badly as if we committed the worst mistake.” FGD four participant

Youth often felt helpless and found themselves unable to do anything about health provider behaviour, yet they had to use maternity services. Youth sometimes go to health centres that are far from their homes in order not to interface with abusive health providers as noted in the following quote;

“Sometimes when you go to the hospitals there are times when you get nurses who treat you very well and when you go back you find other doctors who don’t treat you well and they end up saying instead of me going and find there the same nurse I would rather go to another hospital.” FGD eight participant

The frequency with which abuse by providers came up in interviews suggests a problem for youth as was found in a study among adolescents in Uganda (Atuyambe, 2005) and elsewhere (Hokororo et al., 2015; Reibel et al., 2015). The poor attitudes of health

providers were noted by all study participants as the cause for the non-use of maternal health services by unmarried youth because either they had heard about these poor attitudes or had already experienced these themselves. Changes in the attitudes of health providers therefore is an important factor to encourage the use of these services.

“Even if you are the one when someone blasted you last time, do you think you would come back or at least you go somewhere else or you remain at home.” Health provider seven (Male, Enrolled comprehensive nurse)

7.2.1.2 Professionalism in care during maternity

Some youth were happy with the care they received and the good relationships they had with health providers. Good care experiences increased the likelihood that these youths would seek access to care in the future because positive experiences during ANC, birth and the postnatal period attract youth, as shown in their quotes below:

“I was pleased because the doctor treated me very well and it has even given me morale to go back all the time for check-ups. Even when am going for my check-ups I feel eager to go and meet him (health provider).” IDI Participant eleven

“There are times when the midwives treat you well and you feel like going back to deliver due to the good treatment you were given at the health centre.” FGD two participant

Youth received advice on proper nutrition and good eating habits from providers, such as eating fruits, vegetables and engaging in physical exercise. They were also provided with medicine, such as folic acid tablets, drugs for the intermittent treatment of malaria, vaccines like tetanus toxoid and blood tests for HIV and syphilis. All these were aimed at improving the health of the mother, as well as ensuring the health and wellbeing of the babies. In short, the youth trusted the information given to them by health providers.

“(....) its at kabwohe (health facility) where they told us that we need to eat well, have good health so that the baby is healthy and to keep going for HIV/AIDS checkup. To take good care of the baby and have some exercise.” IDI participant nine

“At hospital I was given medication such as tablets so that I can have a healthy baby and they advised me very well. The doctors helped me so much during childbirth” IDI participant fourteen

Privacy was also ensured as part of the provision of care to unmarried youth. Although youth reported limited privacy since they would meet with older women in the same waiting area and this somehow affected the use of maternal health services. Health providers tried their best to ensure privacy for the youth during provision of the services. Youth would go for pregnancy check-ups, palpation, counselling and received test results in a private room. This is different from what had been found in a study in Tanzania where adolescents would be checked in hallways and only those with HIV positive results would be given test results privately (Hokororo et al., 2015).

“The nurses came, and we would go in one by one, you lay your cloth on the bed and get checked and then they would give you tablets if necessary and then after they tell you when you would be due. They would also check for syphilis and AIDS. When the date reach, you go back.” IDI participant nine

More privacy was ensured by allowing only one mother at a time into the examination room. Not even their parents were allowed to enter the examination rooms with them, according to two parents who accompanied their daughters.

“I cannot lie to you, I never used to enter with her in the examination room”. Parent four (Mother of IDI participant four)

Providers understood the worries of these youth and could attend to them in private when the regular clinics had closed. Other providers even went the extra mile to attend to them in their homes, although this limited the amount of services unmarried youth received.

“Yes, but for them they have that stigma in case someone is pregnant they come while hiding so they come late in the afternoon when the mature women have gone so that they don't meet them but we try to give them the service and do comprehensive counselling... if they are the young ones you need to give them more time but sometimes when they are in a rush to go back so that people don't see them so you feel you would have offered much but she's in a rush, she wants to go.” Health provider three (Female, Enrolled nurse)

“For example, like last week I was at my place then a young mother came, and she was a school girl to my home and wanted me to check her from my home. I told her to go I palpate her from the health centre, and she requested me to do it from my home. I realized

she was fearing, I did it from my chair. So, I realized that we needed a waiting area for the youth.” Health provider three (Female, Enrolled nurse)

Since all participants recognised the impact of stigma on the use of maternal health services among this group, there is a need for youth friendly services. All the visited health centres in this study had no youth centres. They had one waiting area for all maternity clients regardless of age, were attended to by the same providers, and used the same labour and delivery suites and PNC area. Participants acknowledged that youth should not mix with older and married women.

“Obviously we need privacy for them, and we need specific trained people who can handle those youths and we also have to be trained on how to handle those youths.” Health provider four (Female, Enrolled midwife)

More privacy for unmarried youth can be achieved by having youth centres which are independent of the general maternity wards, as well as staff who have enough training on how to handle youth and their needs. For health centres where the infrastructure does not allow a separate section for youth, there was a suggestion to have youth days where they can be attended to exclusively.

“This can be done by creating a conducive environment for them, how, by putting up special days for them and attending to them at least in time, giving them attention so I think that one may help for example when they say on Wednesday it is the day for youth, on that day we attend to them first even when there are other clients.” Health provider seven (Male, Enrolled comprehensive nurse)

Some youth expressed their satisfaction with the health providers at the health centre. Interestingly, male providers were said to treat them well compared to female ones, as reflected in the following statement:

“For example, here at the hospital there are two midwives there’s one who is good but there is a female midwife she is very arrogant when you find her, she may even chase you without giving you any medication, but the man is good.” FGD seven participant

This is further emphasized in the following quote:

“Mm-huh, there are times they abuse me, when I find a lady, she abuses me, she can tell me “I can press it hard and it dies” that is what she tells me. Apart from when I find a man, who talks to me well. Sometimes he tells me to always eat nutritious foods, like milk and he gives me the medicine and instructs me to take it on time.... but when I find a lady she does not—she does not tell me anything” IDI participant five

This relates to what was found in a report from Northern Uganda (The community Agenda, 2017) where male providers had positive reports from the women and colleagues.

Good treatment was understood by the youth as being greeted in a nice and welcoming way, long opening hours and taking time to talk to them in a friendly manner, being kind, not being abusive, and providing the expected services that result in a positive pregnancy outcome.

“You see people are different. Some are rude but my doctor who works on me is very good and friendly and he gives you time.” IDI participant eleven

“At antenatal I give them 5 out of 5 because they used to check me very well, and tell me how I am, they would explain everything without you having to hustle.” IDI Participant Six

7.2.2 Quality of care

Quality of services was measured in terms of the level of information given, the prescribed medicines and support given to the youth during the maternity period. This is thus subdivided into two sub-themes of i) quality of information and ii) quality of services offered as discussed below.

7.2.2.1 Quality of information

The information given to the youth helped them go through the maternity period successfully. They trusted the providers and thus followed the instructions and information given. However, there were cases where the information was not clear, or no information was given. Some health providers treated these youth as if they were older mothers who had gone through the maternity period previously, and subsequently did not give them the necessary attention. This was shown by youth having no prenatal classes in some health

centres, yet these are an important source of information on proper feeding, birth preparedness, danger signs of pregnancy and pre-labour pains for first-time mothers.

“We were not taught (ANC classes), they would ask you when you conceived, check for HIV and that’s all”. IDI participant seven

Another youth said:

“We would be checked and leave but not taught anything.” IDI participant eight

Sometimes, they did not explain the need for the medical tests they carried out and there were no pre and post-test counselling sessions.

“No, they would not explain why they are drawing blood from you, they would just say they want to check your status and tell you if you are not infected.” IDI participant seven

Youth were sometimes not given instructions in either written or verbal form. This was on the assumption that they had already received the same medicines as before. However, for some, it was their first pregnancy and was therefore their first time to attend ANC or, indeed, the first that they had received that or any other kind of medicine/supplementation in the form of a tablet. This can lead to inappropriate use of medicines which can have an adverse impact on the mother and/or the unborn baby, as narrated by this youth:

“There are times when they give me medicine after writing on it but sometimes, the lady just tells you that she has no time if it is like the iron tablets, and she says she has no time ‘if you have come to the hospital don’t you know what you take’? Now for you, you go and ask around and they tell you to take one by one.” IDI participant five

These youths had a good knowledge of the use of antenatal care and giving birth within health facilities. This information was obtained from different sources, like radio, parent, VHTs and other community members. This translated to better use of these two maternal health services. However, the information about postnatal care was lacking, as pointed out by parents and youth, and a large proportion did not use postnatal care except for immunisation of the children.

“Someone like me I was not told to go back, the nurses did not tell me to go back, and in most cases, you are not aware of going back for postnatal. I have never heard of going

back for postnatal, I have just heard it today. I know after delivering you are done with everything; you just go back home. You only come back for immunization.” FGD four participant

Those who went for postnatal care did so because they were not feeling well, or their children were sick, as quoted:

“I would go there when I am sick or when the child is sick.”

The non-access of youth to postnatal care (PNC) is a missed opportunity for family planning use because it is during PNC that this topic is discussed, and youth are given information that helps them to choose the appropriate contraceptive method. The limited information on family planning led to too early pregnancies for instance one of the girls got pregnant when her baby was still young at approximately two months, and most youth had several unanswered questions about family planning. Most parents were worried about youth getting pregnant again, which points to limited communication between these youths and their mothers. Therefore, health providers neglected a very crucial aspect for these girls.

Youth were given information on childcare for survival and better health of the baby, and there was a hands-on demonstration for some activities like breastfeeding.

“Yes, when they come around when they have given birth, breastfeeding is a challenge to all mothers. You have to educate them on breast attachment, how to do it. You talk to them about it and you do it with hands on, you put the baby on the breast as she sees you, you tell her to demonstrate and you are able to tell the one who is coping up before discharging and you are sure she knows how to do it. Because with the first hour you have to make sure the baby goes to breast. And before discharge you have to make sure the baby is breastfed.” Health provider two (Female, Enrolled midwife)

However, the need for information on mother and child feeding and care for a premature birth at home for some youth mothers had not been met. These were overlooked by providers as they could have assumed that the youth were knowledgeable about them.

“Some information was missing, like feeding well and how to breast feed the baby, the foods to start the baby with, they didn’t teach us all that. I got to know them recently when time had already passed.” IDI participant nine

“Because, this baby, they knew was a premature but instead of putting it in the machine like how they always do, they did not tell me that. There’s no any advice they gave me, and they did not do anything. They did not do anything on everything they just decided to discharge me. When we were still at the hospital, it was breastfeeding, not covered just wrapped in the normal liners. And they discharged us” IDI participant six

7.2.2.2 Quality of services received

This sub-theme on quality of services focused on how the health system and health providers enabled the provision of quality care. Health providers sometimes did not care for these youth during child birth, in which providers left them alone, even to the point of not showing up when called upon to help. This was because of the negative attitudes to the youth due to their young ages at pregnancy. These young women felt isolated and demeaned, as was the experience for girls in a UK study by Hunter, (2008).

“You become so worried, which makes you to even deliver an unhealthy baby. They attend to you while giving birth when you are all so worried and sometimes you tell them but they just look at you and ignore you and yet you are in pain, all in the name of not sending you there”. FGD five participant

The unfortunate aspect is that most youth were experiencing child birth and pre-birth pains for the first time. They did not know what to expect and were left to face the unknown alone. The lack of support might force youth to give birth under the supervision of TBAs who were found to be more supportive than trained health providers who sometimes leave youth alone during child labour both in this study and in a prior study in Zimbabwe (Chaibva et al., 2009).

Availability of hospital commodities also influences quality of care which can in turn influence the use of maternity care. Youth are discouraged to come to the health centres due to health commodities being regularly out of stock. Given that they travel long distances and spend much time, effort and money on transport in order to reach these health centres, failure to get the expected supplies discourages them. When health commodities are not

available at public health centres, youth must buy them. Sometimes, these youths do not have the money to buy the medicines and therefore do not take the correct dosage; something which can have negative impacts on their health and the pregnancy outcome.

“For me I was of a view that the government should help us and give us enough medicine. You know there are times when you go to the hospital like for antenatal care, or you go to the hospital when you are pregnant, and you find when the medicine is not enough and so they write for you medicine for you to buy and yet you do not have money so you end up missing the dose when you have not taken.” FGD five participant

The lack of medical supplies in public health facilities influence youth in choosing to use private health facilities. While this may lead to an increase in expenditure due to the health centre fees, it may also lead to a decrease in other costs, as private clinics are sometimes located in the communities (MOH, 2014).

“You left home, you’re in pain you are tired, you have put in your own transport only to reach the health centre and you are told there’s no medicine, at times you have no money with you. You came running to hospital for help, you’re in pain but that’s what you get. Now what someone decides is not to go there completely but rather go to the clinic and buy her tablets.” FGD four participant

7.2.3 Long waiting times at the health centres

This sub-theme is further divided into two sub-themes on the causes of delays at health centres. The first focusses on the hours of operation and staffing levels, whereas the second focusses on implementation of a policy aimed at increasing the levels of male involvement in reproductive health.

7.2.3.1 Hours of operation and availability of staff

This determines the amount of time youth will spend waiting to be attended to at the health facility. Since most youth accessed maternity care from public health facilities, these characteristics are synonymous with public facilities in general. Youth found that health centres sometimes start operating late, yet the youth might have arrived at the health centres relatively early. Sometimes, the providers are not available, or those who are around are not available to attend to clients. Sometimes, health providers are waiting for all clients to

arrive, after which they give the information and education at once to a relatively large group. As narrated in the following quotes:

“Let me tell you madam nurse what happened to me. On uhmmm (trying to remember the day) Wednesday, I went to Kibaale hospital and there was no attendant at the facility, even if you walk all the way to Kibaale hospital you will find when there’s no one. Even if you found there someone, they just get your book and write in it the prescription you need, and they tell you to go to a clinic and buy the medicine. That is what happens. The health workers should at least be available in the hospitals; we do not know if these healthy workers are not enough or they are always absent at work.” FGD four participant

The providers also do not follow the scheduled opening and closing times:

“Of recent they brought a male mid wife who is better, but when you find the lady! She comes late like at 11am and starts working on patients like 12 pm and leaves early. She finds you at the hospital and she will start pretending to be very busy” FGD seven participant

The long waiting time is uncomfortable with a lack of privacy for these youth due to the associated stigma of being seen in the maternity wards. In addition, they suffer from hunger due to poverty as they cannot afford to buy food at these health centres. Due to the long distances travelled, youth spend a long time travelling to the health facilities. Therefore, keeping them for long periods at health centres might often discourage them to come for the health services on offer.

“I would go without anything to eat, if I couldn’t afford transport how could I get what to eat? Sometimes we didn’t have what to eat, we would eat supper and there is no breakfast and besides I would be running late. I would go hungry and then they wait for others who come at 11 and then you go and line-up.” IDI participant ten

The youth suggested that if they can be provided with something to eat, it would make their waiting time more comfortable.

In addition, youth were not attended to immediately during childbirth periods, especially at night. Health centres that provide maternity care should be always open, especially those that provide child delivery services. This is because pre-labour pains can start at any time

and youth are not able to access these services at night, which has a knock-on effect on their use of the services. This also points to low staffing levels and can lead to midwives becoming exhausted, otherwise health centres would be having health providers available for night duty. The lack of midwives is noted in staffing reports in Uganda with a ratio of one midwife to 7000 births compared to the WHO recommendation of one midwife to 175 births (GHO, 2016, MOH, 2017)

“The time of labour pains also matter. When you go to the health centre at night and they wake the midwife up, she does not come to help quickly.” FGD two participant

7.2.3.2 Implementation of a government policy on male involvement in reproductive health during antenatal care

In 2014, Uganda launched a national policy of increasing male involvement in reproductive health and one of the strategies for its implementation was the prioritisation of couples during service provision (UNICEF, 2016b). Although the policy reduces the waiting time for couples, it unintentionally punishes unmarried youth. These unmarried youths come mostly for ANC without partners because most partners have denied any involvement in the pregnancies or are not willing to accompany them. Therefore, unmarried youth received ANC last on the day of their visits regardless of whether they came first or not.

“Because when you as a pregnant youth without a husband goes to the health centre, you are not given first priority as the pregnant woman who is married and has come with her husband. As you an unmarried pregnant youth, it makes you feel bad and even the other women seated next to you in the queue get to know your situation and this makes you feel embarrassed.” FGD two participant

“The services are not good because they don’t treat you well because you don’t have a husband, yet you are pregnant. Those who come with their husbands are given first priority and for you who even came early, you end up leaving the facility late.” FGD two participant

The youths are sometimes sent away or booked for the next day as a punishment for coming without partners.

“Yes, it happened to me, the nurse asked me to go back and come with my husband and told me the day I will come with my husband that’s when I will be worked upon” FGD seven participant

Given the long distances travelled by youth, coupled with the poor economic situation among them, any extra transport cost impacts heavily on their coming back to access the services in the future. In short, youth were abused and simply not attended to.

“These issues of ‘the person who impregnated me is not around’, nurses don’t want to hear that. So, for a single mother you don’t waste time going to the hospital because you don’t have a husband.” FGD four participant

When asked about this policy of coming with partners, health providers were also not clear, and none made a precise statement about it. One health provider made the following contradictory statements where in some instances she supported it being in force and working on couples before women that came alone. Then she later said that youth were being attended to first, when probed further, she confirmed how it discouraged women from coming back for ANC services.

In support of the policy, she said

“Of course, they are given first priority; they have their own package when they come with their partners.”

However, she contradicts herself by stating:

“These youths in case they come and line up with the adults, of course we consider the youth first, we give them services and they leave before we attend to others.”

“Yes, at first, we used to do that, those who came with their partners were given first priority but those who didn’t have their partners would feel bad and they would say next time they will not come back for antenatal.”

All in all, this policy is still in effect in health facilities and was identified as a discouragement in the use of maternal health services among unmarried youth.

“The married adolescents may find it easy to go to the hospital may be and yet when she is not married—when she is at the mother’s house, she does what—the man okay refuses to escort her and

he says I will not go there and the other one (youth) also becomes reluctant, but if they are staying together he has to tell his wife let's go to the hospital and you find him escorting her and yet if she is not at the man's place he refuses to escort her.” FGD five participant

7.3 Integration of results from both strands

The importance of combining quantitative and qualitative methods was to find explanations for some of the observed quantitative results, regarding the use of maternal health services. Although the qualitative data was obtained from a different sample from the quantitative sample, and at different times, it has helped explain the reasons behind the numbers and relationships between independent factors on the use of maternal health services. The qualitative results also offer another perspective that will help improve the use of maternal health services, especially among unmarried youth in Uganda.

7.3.1 Levels in the use of maternal health services

The quantitative findings showed clear differences in the use of maternal health services among unmarried and married youth in Uganda. Unmarried youths were less likely to start ANC early and had fewer ANC visits compared to married youth. The responses from the qualitative participants show the barriers and policies that need to be addressed to improve the use of the services among unmarried youth. It has been shown from the qualitative responses that unmarried youth need support with basic needs, accompaniment to access the services, and transport costs. The negative attitudes of health providers towards the unmarried youth also influenced the low use of ANC. More importantly, the implementation of a policy on increasing male involvement in the use of maternal health services discriminates against unmarried youth, as they are attended to last or denied the services. For example, this participant said:

“These issues of ‘the person who impregnated me is not around’, nurses don't want to hear that. So, for a single mother you don't waste time going to the hospital because you don't have a husband. Sometimes, you can approach the person who impregnated you, but he refuses to accompany you, so you end up not going for antenatal.” FGD eight participant

In addition, the quantitative study found that youth as well as women in Uganda generally seek ANC late. The national rate of seeking ANC in the first trimester stood at 21 percent in 2011 and 29 percent in 2016. The explanatory study found that women delay initiating

ANC to reduce the number of appointments they will have. This is because a missed ANC appointment will attract rebuke from the health providers. The costs involved in having an ANC visit makes women to delay the start.

“Other women say that if you start early okay let me say if you have just gotten pregnant and the pregnancy is like at two months, they will keep on telling you to come back month after month until you give birth. And by so doing, they get tired of walking that’s why they say at least when it is at six months before I realize the number of times I will have checked, I will have given birth.” FGD five participant

Given the barriers to accessing the services, youth start ANC late to reduce the number of times they will have to attend antenatal care. This trend suggests that antenatal care in Uganda, although available at no financial cost in public health facilities, is not easily accessible due to reasons of distance, transport, and time.

7.3.2 Understanding the observed relationships in the quantitative data

The quantitative component of this study found that unmarried youth having higher education levels were less likely to seek ANC in the first trimester, compared to unmarried youth with no or with primary level education. The qualitative analysis found that the reason for the delay in seeking ANC was because most unmarried youth who get pregnant in this age group are at school, therefore, they hide the pregnancy because of fear of negative treatment from parents. In addition, the fear of potential social impact of the pregnancy for a girl who is attending school, makes them hide the pregnancy and start ANC late as they are always blamed for wasting the parents’ school fees. This is illustrated in the following quotes:

“Because of fear to be laughed at, as everyone will be feeling pity for your parents who sent you to school. So, you at times find out that you are pregnant but keep quiet if at school they don’t get to know, you stay, and study and you avoid going to hospital up to around six months.” FGD four participant

“Some of the educated (girls) are shy because they fear to be blamed for wasting their parent’s school fees, so they tend to avoid being seen pregnant until those late stages.” FGD one participant.

The multi-level models have also shown the negative impact of parity on the use of maternal health services. Youth of higher parity were less likely to use maternal health services. The qualitative interviews and analysis show that low maternity care use among the youth who have had children, was due to reduced excitement and improved confidence about their own abilities during pregnancy and childbirth, specifically if the previous pregnancies had no complications as quoted below:

“You find that this youth who already gave birth before is more confident and thinks she knows more regarding child birth, so she feels it is easy since she already did it before. But for the youth pregnant for the first time, she has a lot of fears and doesn’t know what exactly is going to happen so that’s why they hurry to seek maternal health services.” FGD four participant

“For mothers who have ever given birth, they are used since they have had the experiences now she knows what happened to her during the first pregnancy and may be the second, so if she didn’t go to hospital but gave birth very well and she’s very fine then that means she will never go there for as long as she still gets pregnant, don’t get complications and gives birth normally” FGD five participant

Being employed in the agriculture sector was associated with reduced odds of the use of health facilities at child birth. The interviews found that this was because agriculture was labour intensive, and more time spent in health centres at child birth would lead to losses and wastage of agricultural produce as quoted below:

“The mother fear to leave her harvest unattended to as the rain might destroy it, so she ends up not going for maternal services.” FGD eight participant

To conclude, although the findings seem to be consistent with existing literature, especially among the married youth, the Ugandan socio-cultural context seems to be shaping some of the observed results. The observed differences in the use of the maternal health care services among unmarried and married youth, might be explained by levels of acceptance of pregnancy before marriage, or cultural beliefs about pregnancy and childbirth in Uganda¹⁰. The findings of this study show marital differences in the use of maternal health

¹⁰ Chapter six, section 6.4

services, and these differences are explained by individual predisposing, enabling, need, environmental, and health provider factors. Thus, the current study highlights the importance of these factors in the use of maternal health care services among youth in Uganda.

7.4 Discussion of findings

The major aim of this chapter was to explore health providers' perspectives on the use of maternal health services among unmarried youth aged 15-19 years in Uganda. The key findings for this chapter include the attitudes of the providers to the youth, preferred sex of the providers, quality of information and services received, expected support and preferred service location, and these are discussed in line with existing literature.

The current study found that medical staff behaviours towards the youth during this maternity period were both negative and positive. Most youth were not treated well by providers; they were abused and neglected when they needed the support of the health providers especially during childbirth which was characterised with minimal communication. They also faced stigma and discrimination, and poor rapport between the youth and health providers. Studies have found that abuse by the health providers directed at women during maternity care is not exclusive to youth only, but also older women are neglected, verbally and physically abused (d'Oliveira et al., 2002; Freedman & Kruk, 2014; McMahon et al., 2014), as well as sexually abused (Bohren et al., 2015) The intense abuses among unmarried youth in this study might be because health providers find discomfort in providing reproductive services to unmarried young people (Senderowitz, 1998). Poor health providers' attitudes discourage the use of maternal health services, especially antenatal care and child birth (Kyomuhendo, 2003; Mathole et al., 2003; Kruk et al., 2009; Chaibva et al., 2009; Chaibva et al., 2010). The poor attitudes of staff were reported by all participants of this study including health providers as a barrier to the use of maternal health care services among unmarried youth.

Youth want to be treated with respect, empathy, not to be teased because of their age at becoming pregnant or giving birth, as well as providers not being harsh with them, as has been found in prior studies in Uganda and elsewhere (Atuyambe et al., 2005; Atuyambe et al., 2008; Hokororo et al., 2015; Reibel et al., 2015). Health providers thus need to treat the

unmarried youth well, in order to encourage them to access the maternal health services in future (Chaibva et al., 2009). Given that clients judge the quality of services by the aspects of the interpersonal care they receive, rather than the technical aspects of their treatment, good interpersonal care is essential in the provision of maternal health services to youth (Mngadi et al., 2002).

In this study, some youth reported that they were satisfied with the care received from male providers compared to female providers during antenatal care. Previous studies have found that women especially Muslims preferred to be cared for by female providers because of privacy issues during intimate examination or intimate counselling, religious beliefs and cultural traditions (Rizk et al., 2005; Singh et al., 2014). Fear of not finding a female provider was reported as a barrier for maternal health care use among Muslims (Gage, 2007). Other studies reported that patients preferred providers of the same sex especially for genital and rectal examinations (Fennema et al., 1990), and females preferred female providers for basic gynaecological care (Schmittiel et al, 1999). However, some studies have reported no effect of sex of provider on patient satisfaction or quality of care (Johnson et al., 2005; Zuckerman et al., 2002) and gender of provider was not a criterion for choosing a provider (Zuckerman et al., 2002; Hudson & Watts, 1996; Howell et al., 2002).

Prior studies have found that female providers were preferred because they were seen to be more 'humane' and cared for patients well (Fennema et al., 1990: p441). This contradicts the findings of this study where youth reported that they were abused and mishandled by female health providers than the male health providers. In the current study, male providers were found to be gentle, calm, sympathetic and more understanding than some female providers. This could be because midwifery was a predominantly woman's profession and males who join it go in with passion to support women. Also, since it was a female profession, males must act to meet the standards, as they 'are in the eye of the media' (Jones, 2017). However, both sexes should be available, and youth should be given the choice whether to be attended to by a male or female provider, as studies show some women prefer female midwives because of privacy (Fennema et al., 1990; Rizk et al., 2005; Tegulle, 2013; Singh et al., 2014).

Studies have also found dissatisfaction with information received by youth during the maternity period due to fear of asking, being ignored when they asked, and thus felt

abandoned (Wray & Davies, 2007; Hunter, 2008). In the current study, most youth were happy with information shared during ANC; however, some were not satisfied as some youth in some health centres received no antenatal counselling at all. Most dissatisfaction centred on the information given about child birth and child care, as well as the limited support given by providers during birth. On the other hand, some parents supported them and provided the information needed during the maternity period. During the postnatal care, mothers of the youth provided the necessary information and supported them with child care especially cleaning the umbilical cord, bathing and dressing the baby, and providing local medicines. Literature in Uganda shows that postnatal care is not supported by the health care, and respondents did not know the need for it, except for immunisation (Waiswa et al., 2008). This concurs with what was found in this study as most youth were not informed about postnatal care of the mother. Additionally, none of the youth talked about having received any information on danger signs of the pregnancy during ANC. The researcher believes that knowledge of danger signs of the pregnancy is an important aspect if maternal and child morbidity and mortality are to be reduced.

Long waiting times to receive the services reported by the youth in this study are consistent with other studies, where it was found that youth were discouraged to seek maternity care because they spent longer times at health centres. (Teagle & Brindis, 1998; Duggan & Adejumo, 2012; Hokororo et al., 2015; Reibel et al., 2015). This affected other household tasks among adolescents (Hokororo et al., 2015) and they could thus travel to far hospitals where they would be attended to faster than nearby hospitals where they waited for long to receive the services (Reibel et al., 2015). This was because the longer waiting times at the health centres compromised their privacy as members of the community could find them (Reibel et al., 2015). Youth in this study noted that they spent long hours at the health centres, because providers arrived late and or did not strictly adhere to the opening times, especially in government health centres, where almost all the study participants reported to have accessed the maternal health services.

The waiting time was worsened by the implementation of some unrealistic government policies which prioritise women who come with partners (couples) to be attended to first in Uganda (UNICEF, 2016b; WHO, 2016b). This meant that youth who, in most cases, have no partners going with them to access the maternity care services would be made to wait

longer, and this severely discouraged them from coming back to the health centres, especially during ANC. Studies among married women have also revealed that they found trouble convincing their husbands to go with them to health centres, because of fear of HIV testing (Rujumba et al., 2013) and long waiting hours (Kabagenyi et al., 2014). Lower levels of males attending ANC with their partners were reported in Eastern Uganda, although invitation letters addressed to males to come with their partners for ANC were issued (Byamugisha et al., 2011). A UNICEF study in Uganda found that women come for ANC with 'hired' men other than their partners, so that they are attended to first (UICEF, 2016b). However, unmarried youth cannot afford to hire partners since they are not economically well-off as noted in the analysis; and this would also make the policy inefficient.

Previous studies among youth have found that health needs of youth cannot be met with the same health measures that have been implemented for women in general because their needs, especially for their first pregnancy are greater (Aday, 2002; Atuyambe et al., 2005; WHO, 2012; Waisel, 2013). The emotional, psychological and social needs of pregnant unmarried youth are greater than those of other women (WHO, 2012). All the respondents, including health providers, acknowledged the unique needs of unmarried youth and the need for youth specific services which are lacking in all the health centres included in the current study. There is therefore a need for youth friendly services which will best meet the specific and specialised needs of youth, as suggested by other studies in Uganda (Kaye, 2008; Atuyambe et al., 2005, 2008, 2009). Therefore, unmarried youth need a targeted approach to guarantee privacy, better treatment with respect and confidentiality (WHO, 2012). Mere provision of services will not improve the use among youth. To this end, there is an evident need for provision of equitable and respectful care (Tylee et al., 2007; Miller et al., 2016). This will improve the use of maternal health care services, as availability of adolescent friendly health services has been found to be associated with improved use of reproductive services in Uganda (Mbonye 2003), and thus lower the maternal deaths among this population group.

7.5 Summary and Conclusions

Analysis showed varied experiences; most youth were abused by the health providers due to their young age of pregnancy, lack of essential items during this period (maternity dresses, children clothes, delivery kit). Another cause for abuse stemmed from unmarried youth coming for antenatal care with no partners yet, the implementation of a policy on increasing male involvement in reproductive health in Uganda, requires them to attend antenatal care with their partners. Cases of health provider neglect while attending to youth were also identified. Despite the above challenges, the study also identified the care some youth received during the maternity visits in which they were treated well and were satisfied, and motivated to come back for maternity services, especially by male providers.

Efforts to provide youth with adequate information in terms of birth and child care preparedness, and provision of basic needs, are essential. Health providers need trainings on client care, specifically change of attitudes towards unmarried youth, so that youth can find it comfortable to access maternity services. The health providers should treat unmarried youth with empathy since their aggressive and abusive behaviours can stop the youth from utilising the maternity services available. Males should be encouraged to take trainings in midwifery skills since youth were satisfied with their services, and some youth even preferred them to female providers.

In addition, the policy on improving male involvement in RH issues need to be considerate of unmarried youth, who, in most cases, do not have partners to accompany them in order to access maternity care. There is therefore a need for a review of the implementation of this policy, because it has a potential impact on the use of maternal services by unmarried youth.

8 Chapter eight: Overall discussion of results

8.1 Introduction

The purpose of this chapter is to discuss the key findings of the study while taking into consideration the existing literature on access to and experiences in the use of maternal health services during the maternity period. The unique contribution and limitations of the study are also discussed.

The main purpose of this study is to gain an understanding of the factors associated with the use of maternal health care services among unmarried youth aged 15-24 years between 1995 and 2011 in Uganda; and the experiences of unmarried youth aged 15-19 years during the maternity period. The conceptual framework adapted for this thesis was the modified Andersen (1968) behavioural model of access to medical care, which proposes that predisposing, enabling, need, environmental, and health provider factors influence the use of health care services. More specifically, this study examines:(i) the predisposing and enabling factors associated with the timing and the number of antenatal care visits among unmarried youth aged 15-24 years; (ii) the variation in predisposing and enabling factors for the use of health facilities at childbirth among unmarried youth aged 15-24 years, (iii) the experiences and support for unmarried youth aged 15-19 years, at home and in the community during the maternity period; and (iv) the health providers perspectives in the use of the maternal health services for unmarried youth aged 15-19 years in Uganda.

The study employed an explanatory sequential mixed methods design. This first part of the study, focusing on the first two objectives above, was achieved through quantitative analysis of the pooled data from the 1995, 2000/01, 2006 and 2011 Uganda Demographic and Health Surveys (UDHS). The analysis was carried among 581 unmarried youth who had had a live birth within five years before each survey. Multilevel models were chosen for this analysis because they enabled the analysis of individual and community level predictors of the use of maternal health care services. The second part of the study provided qualitative data and focussed on the experiences of unmarried youth aged 15-19 years during the maternity period in Bushenyi and Kibale districts in western Uganda (objective iii & iv above). Qualitative data also provided explanations for some distinctive findings in the quantitative data. This was accomplished using data obtained through semi-structured in-depth interviews with fourteen unmarried youth who were pregnant or had had a birth

within three years before fieldwork, and seven of their parents. In addition, eight focus group discussions with unmarried youth were conducted. Finally, seven key informant interviews were conducted with healthcare personnel providing maternity care in the two districts. Thematic Interpretative Phenomenological Analysis was chosen as it allows detailed exploration of the youth experiences during the maternity period from their own experiences. The results of this analysis show the predictors of the use or non-use of maternal health services among unmarried youth, and the experiences and support to unmarried youth during the maternity period in Uganda, both of which are discussed in relation to existing literature.

8.2 Discussion of key quantitative data findings

The Andersen's behavioural model of access to medical care provided a framework for this study. This framework suggests that the use of medical care is a function of predisposing, enabling, need, environmental and health provider factors. Based on available data in the UDHS, only predisposing and enabling factors were included in the quantitative analysis. However, during the qualitative data analysis, some need, environmental, and health provider factors were identified as either barriers to or enablers for the use of maternal health care services and are discussed in the qualitative component section. Predisposing factors considered in the analysis include age, pregnancy desire, parity, education and religion, while enabling factors included wealth index, occupation, region and place of residence, as well as access to mass media through the radio, television and newspapers. District level variables of education, wealth and mass media exposure levels were constructed from population level variables which were ranked and aggregated. The influence of these factors on the use of maternal health care services is discussed with reference to the related literature.

8.2.1 Predisposing factors associated with maternal health care services use among unmarried youth in Uganda

There are so many uncontrollable predisposing variables that can influence the use of maternal health services among youth. However, based on the Andersen (1968) behavioural model of access to medical care and available data in the UDHS, five predisposing factors were included in the analysis. They include age, pregnancy desire, parity, education level,

and religion as well as the age and level of education of the husband. The impact of these variables on the use of maternal health services among unmarried youth is discussed in this section in relation to existing literature.

Higher education has been documented to be associated with higher odds of early ANC start, frequent ANC use, and the use of health facilities at childbirth (Hueston et al., 2008; Kamal, 2009; Ochako, 2011; Sein, 2012; Kumar et al., 2013). Other studies have suggested that this could be due to improved knowledge and awareness regarding the benefit of the use of maternal health care services among highly educated women (Matsumura & Gubhaju, 2001; Jat et al; 2011; Barasa et al., 2015); and a woman's greater ability and empowerment in terms of decision making within a household, including decisions about her health care (Matsumura & Gubhaju, 2001; UNICEF & WHO., 2003; Tembon & Fort, 2008; Malik & Courtney, 2011). This study found that higher education level was associated with higher chances of the use of health facilities at childbirth among unmarried youth.

In contrast to other studies that suggest that higher education level is associated with early start of antenatal care among youth (Hueston et al., 2008; Kumar et al., 2013), unmarried youth of higher education level sought antenatal care late compared to unmarried youth who had no education or primary education. The element of 'fear' cited by participants in this study, which coincides with findings of other studies (Reibel et al., 2015; Hokororo et al., 2015) suggest that hiding the pregnancy from family, school and other community members due to fear of their reactions leads to delay in seeking antenatal care among unmarried youth.

Furthermore, previous research conducted among youth by Hueston et al., (2008), Birungi et al., (2011), Ochako, (2011), Singh et al., (2014), and Rai et al., (2014), found that higher parity was associated with reduced chances of the use of maternal health services. In a USA study, Hueston et al., (2008) found that pregnant adolescents of higher parity were more likely to start ANC late than those who were pregnant for the first time. The results of this study show that higher parity was associated with non-use of health facilities at childbirth among unmarried youth. Previous research has shown that women who have had no history of pregnancy complications (Mathole et al., 2003; Kyomuhendo, 2003; Hatherall et al., 2016), or developed confidence to have a positive pregnancy outcome without using

maternal health services (Mekonnen & Mekonnen, 2003), and/ or have received poor treatment at health facilities during the previous pregnancies (Simkhada et al., 2008; Downe et al., 2009; Arthur, 2012; Shiferaw et al., 2013) were less likely to use maternal health services for subsequent pregnancies. High parity might also be associated with limited household resources and lack of child care services for the older children, as was suggested by Simkhada et al., (2008). Providing outreach programmes for maternal health services can help remove the bottlenecks women with higher parity face when attempting to access maternal health care services, especially antenatal and postnatal care including immunisation of the children.

Compared to Catholics, while predisposing factors were controlled for, unmarried youth who were members of other religions were less likely to have frequent ANC visits compared to Catholics. The results however show that religion did not have an impact on the use of ANC when enabling factors are controlled for. Thus, the impact of religion on the use of maternal health services could be explained by enabling factors, such as wealth quintile and access to mass media. Previous research has given rise to conflicting findings on the influence of religion with regards to the use of maternity care. Muslims have been found to be associated with a reduced likelihood of seeking ANC, and the use of health facilities at childbirth. This has been shown to be due to the fear of finding health centres staffed only by male health providers as their religion prohibits them to expose their bodies to males (Singh et al., 2012b; Singh et al., 2014). However, in Nigeria, Muslims adolescents were more likely to have more ANC visits than Christian adolescents (Rai et al., 2012). In contrast to the wider literature, this study found little evidence that being a follower of Islam influences the use of maternal health care services once the enabling factors are considered.

Also, previous studies among youth have found that older youth were more likely to use maternal health care services than their younger counterparts (Ryan et al., 2009; Haque et al., 2012; Anderson & Rahn, 2016). Contrary to what the studies above had found, adolescents (15-18 years) were observed to have increased chances in using skilled birth attendants at delivery compared to older women (19-24 years) in Bolivia (Reynolds et al., 2006). However, this study found no association between age group and the use of maternal health services among unmarried youth. This study's findings replicate what had been

reported in prior studies conducted by Birungi et al., (2011), Singh et al., (2012a), and Singh et al., (2012b) that found no statistical difference in the use of maternal health services by age of the youth. Simkhada et al., (2008) suggested that this could be due to the confounding impact of parity, as older women might be of higher parity than young ones. Thus, policies aimed at improving maternal health services use among unmarried youth in Uganda should target all age groups, since no difference in the use of these services was observed in this analysis.

Current research shows no significant association between pregnancy desire and the use of maternal health services. This echoes what has been found in prior studies among youth conducted by Rahman et al., (2011a), Rai et al., (2012), and Singh et al., (2013). However, this differs from what was found in Malawi where poor antenatal care use was observed among youth who did not want the pregnancy compared to those who wanted to become pregnant at the time (Rai et al., 2013). A study in Kenya found women who were dissatisfied with the timing of the pregnancy were less likely to deliver in a health facility (Gage, 1998). Moreover, unwanted pregnancy among unmarried youth has been found to be associated with fear of its disclosure, in turn leading to late start or infrequent use of antenatal care (Teagle & Brindis 1998; Chaibva et al., 2010; Rai et al., 2013). From this finding, policies aimed at improving the use of maternal health services among youth in Uganda should focus on all youth, regardless of their pregnancy desire.

8.2.2 Enabling factors associated with the use of maternal health care services among unmarried youth in Uganda

Several enabling factors impact on the use of maternal health care services. However, based on the Andersen (1968) behavioural model of access to medical care, and available data in the UDHS, wealth quintile, occupation, region, place of residence, access to newspapers, radio and television, and husband occupation were considered for this analysis. District wealth level and mass media exposure were developed from population level. The association between these factors and the use of maternal health services is presented in this section and discussed in light of prior literature.

Previous research has found that being in the middle wealth quintile or higher, was associated with higher chances of the use of maternal health services among youth (Kamal,

2009; Ochako et al., 2011; Rahman et al., 2011a; Rai et al., 2012; Singh et al., 2012a; Singh et al., 2012b; Kumar et al., 2013; Singh et al., 2013; Singh et al., 2014). Research shows that this could be because youth with an income are able to meet the direct and indirect costs in accessing maternal health services (Gebremeskel et al., 2015). Wealth quintile was explored in this study and compared to unmarried youth in the poorest wealth quintile, unmarried youth in the middle wealth quintile were more likely to have frequent ANC visits. The differences in the use of free maternal health services in Uganda indicate that there are direct and indirect costs, that affect their use which can be met by those that are able to pay, as has been found in other studies conducted by Basinga et al., (2011), Arthur, (2012), Leone et al., (2013), Kisuule et al., (2013), and Gebremeskel et al., (2015). A study in India has found that households spent a lot on out-of-pocket costs to access maternal health care, despite the fact that these services are provided free of charge at points of delivery (Leone et al., 2013). In contrast to previous studies, no association in timing of antenatal care and the use of health facilities at childbirth, and wealth index was observed among unmarried youth. Therefore, unmarried youth of all wealth quintiles should be targeted by policies aimed at improving the use of maternal health services in Uganda.

The Andersen behavioural model of access to maternal health services identified the positive relationship between being employed and the use of health care services (Andersen, 1968). Previous research has found that unemployed adolescents were more likely to start ANC late (Wiemann et al., 1997). Another study found that adolescents working away from home were less likely to have safe delivery in Niger (Rai et al., 2014). A study in Bangladesh found that women's work status was not related to skilled birth attendance (Kamal, 2009). The current study found that being employed in the agriculture sector was associated with lower chances of giving birth from a health facility. The negative influence of agriculture is due to the fact that agriculture is labour intensive, and youth have no time to attend to maternal health services due to competition from having to carry out agriculture activities. The qualitative analysis of this study found that youth may be hesitant to go for childbirth because the more days she is away for childbirth, the greater the loss of her agriculture produce as no one might take care of her produce for instance during harvesting and drying time, which leads her loss of income. The negative association between agriculture and the use of maternal health care services was found in

an earlier study in Tanzania that found that youths employed in the agriculture sector had few ANC visits, because household activities including agriculture competed for time needed to attend ANC visits (Hokororo et al., 2015). Although competition from other activities has been found to influence the use of maternal health care (Downe et al., 2009; Hatherall et al., 2016), the competing activities for these women are not related to livelihood, unlike the youth in Uganda. For example, Hatherall et al., (2016) in the UK, found that the competing activities were household chores rather than paid work or subsistence activities as found in Uganda. However, the non-working youth can afford to devote time to access maternity care in Uganda. In addition, most of the agriculture activities the youth carry out are related to subsistence, thus there is less or even no income to meet the requirements, such as gloves, birth mats, baby clothes as well as transport costs that are necessary to enable them to use health facilities at childbirth. However, no difference in ANC timing and frequency of ANC was observed among unmarried youth compared to their non-working counterparts.

Previous research among youth has identified the association between region of residence and the use of maternal health services (Kamal, 2009; Birungi et al., (2011); Singh et al., 2012a; Singh et al., 2012b; Rai et al., 2012; Singh et al., 2014). Adolescents in Nairobi, the capital of Kenya, were found to be more likely to use skilled attendants at childbirth than adolescents in Nyanza province (Birungi et al., 2011). The Birungi et al., 2011 study identified differences in socio-economic status and regional differences in the provision of health services as the reasons for the differences (Birungi et al., 2011). In this study, it has been observed that unmarried youth in western region were less likely to have frequent ANC visits. but no regional influence in timing and the use of health facilities for childbirth was observed among unmarried youth. The regional differences in ANC numbers could be due to the fact that unmarried youth conceal the pregnancy until late ages and thus have few or no ANC visits.

It is important to note that the northern region which experienced a civil war for over two decades since 1986 is not significantly different from the central region in terms of the frequency of ANC. This could be due to increased government and non-government organisational efforts to rebuild the social and health structures in the region (Kruk et al., 2010; Bbale, 2011; Namasivayamet al., 2017). This includes health infrastructure

development, incentives to attract staff to the region, medical supplies, and incentives like transport vouchers to the women to access maternal health services, which subsequently increase the use of maternal health services among the youth in Northern region.

Previous studies have found that adolescents in urban areas were more likely to start ANC early and to seek ANC frequently (Hueston et al., 2008; Ryan et al., 2009; Haque et al., 2012; Rai et al., 2012; Kumar et al., 2013; Shahabuddin et al., 2015). Other studies have also found that youth in urban areas were more likely to use health institutions for childbirth than those in rural areas (Kamal, 2009; Haque et al., 2012; Sein, 2012). In contrast, no significant difference in the timing and frequency of ANC was observed in this study. Rural-urban differences might not be pronounced in terms of timing and frequency of antenatal care among youth because accessing ANC is not as abrupt as pre-birth pains, enabling youth in both rural and urban areas ample time to plan and attend antenatal care. However, urban and rural dwellers having similar trends does not mean equality of opportunity in accessing health care. It could mean that certain categories of youth in urban areas need particular attention, for instance slum dwellers who have been found to use maternal health services less than the rural residents in Kenya (Fosto et al., 2008). It could also mean that the level of knowledge and awareness of the importance of the use of antenatal care is low among youth in Uganda, regardless of place of residence. Different channels to avail more specific messages to the youth should be engaged. VHTs including males should be engaged to talk to fathers and partners to get involved in supporting youth, as health workers visits have been associated with better maternal health services elsewhere (Gross et al., 2012; Singh et al., 2014).

With the use of health facilities, this study observed that rural residence was associated with lower chances of the use of health facilities at childbirth among unmarried youth. It has been found that in urban areas, the distances to health centres are short, due to a more even distribution of both private and public health facilities in urban areas over rural areas in Uganda (MOH, 2013; MOH, 2014). It has also been observed that health facilities are located in urban areas or along major roads in Uganda (HAI & WHO, 2002). In addition, previous research showed that health centres in urban areas are better staffed compared to those in rural areas (Anyangwe & Mtonga, 2007; MOH, 2016b). Therefore, youth living in rural areas must travel relatively long distances to access the health services for childbirth

that are mostly located in urban areas. This is worsened when labour pains start at night and youth in rural areas cannot either easily obtain means of transport to reach the health centres, or the nearest lower-level health centres themselves do not provide maternity care services at night. Coupled with poor road network and poverty, youth in rural areas experience more barriers to using health facilities at childbirth than those in urban areas.

Exposure to health information through access to radio, television and print media has been found to have a positive impact on the use of maternal health services. Prior studies have found that youth who had access to media had increased chances of using maternal healthcare (Rogers et al., 1996; Singh et al., 2012a; Singh et al., 2012b; Singh et al., 2013; Singh et al., 2014). Access to both mass media and health visitors was also associated with higher odds of accessing antenatal care among youth in India (Singh et al., 2014). This study shows some evidence that exposure to health information through access to radio, television and print media has an impact on the use of maternal health services. Media, especially daily access to the radio, is positively related with better maternal health outcomes among unmarried youth in Uganda. This is a good source of maternal health information for Uganda, given that more than half (55.2%) of the households have access to the radio, compared to 7.2 percent and 2.1 percent who have access to television and print media respectively (UBOS, 2016a). In addition, given the low literacy rates among females in Uganda (UBOS, 2016a), coupled with low education levels among youth who get pregnant during this age range (Field & Ambrus, 2008), access to print media is less effective in influencing the use of maternity care among this group. Thus, this study identifies the radio as the most appropriate channel for communicating health information for the youth given their literacy levels, and availability of the radio in Uganda.

8.3 Discussion of key findings from the qualitative component

One objective of the mixed research method was to answer some research objectives that could not be answered from the available secondary data. In addition, the major research gap identified from the systematic literature review was the absence of environmental and health provider variables, in most studies that analysed secondary data, as had been observed by Phillips et al (2012). The qualitative component of this study identified need, environmental, and health provider factors that were missing in the UDHS data and are discussed in this section. Need variables include psychological distress due to parent and

partner violence that impacted on the support the youth received, and the need for hospital requirements. Environmental factors include distance to the health facilities, cultural factors and availability of alternative health providers in the community, while health provider factors include attitudes of the providers, sex of the provider, quality of services and waiting time at the health facilities.

8.3.1 Need variables

This section discusses two need variables that were identified from this analysis. They include: i) psychological distress stemming from both abuse and non-familial support with requirements during the maternity period, and ii) the support with hospital supplies both from the family and health facilities.

The most important finding of this study is the association of parent and partner abuse, and limited support for the use of maternal health services. Studies have reported that premarital pregnancies were associated with physical and verbal abuse at home (Stewart & Cecutti, 1993; Parker et al., 1993; Ilika & Anthony, 2004). This was no exception in this study as most youth reported abuse, especially from their fathers and partners, even during the postpartum period. Domestic violence negatively impacts on the pregnancy outcomes through anxiety, abortion, and the individual's poor use of the available maternity service. (Garcia-Moreno et al., 2006; Claudia et al., 2006). In this study, due to fear, youth hid the pregnancies until later stages sometimes up to when parents discovered it themselves. This led to delayed start or non-use of maternal health services.

However, violence during the maternity period increased the need for psychosocial support for the youth. This encouraged them to go for antenatal care so that they could have access to someone with whom they shared their experiences. That is the reason why unmarried youth need the confidence to share their experiences with health providers in private. Unmarried youth need trusted and caring health providers who will give them enough time and guide them on how to deal with what is hindering them from accessing maternal health services.

Negative attitudes from the parents and partners were also associated with limited support in terms of requirements and finances needed to facilitate access to maternal health services as was observed in previous studies (Weimann et al., 1997; Reibel et al., 2015; Anderson &

Rahn, 2016). On one hand, the lack of hospital requirements discouraged the youth from accessing maternal health services because they would not be attended to, unless they had items such as gloves and birth mats. On the other hand, the availability of incentives, like the government policy of providing *mama* kits, encouraged youth to use maternal health services, especially frequent antenatal care and health facility delivery. This is because most health centres supply *mama* kits to women who have completed four ANC visits as observed in this study. *Mama* kits influence the use of a health facility at childbirth, since it makes the process affordable (Austin-Evelyn., et al, 2017; Massovon., et al, 2017). However, these kits are sometimes out of stock and the youth must buy them, as was found in an earlier study in Uganda (Waiswa., et al, 2008). This becomes costly for the youth who are not working and have limited financial support from parents and partners. Therefore, government should ensure that supplies like *mama* kits are available in order to increase youth chances of the use of maternal health services. They could also be distributed to certain populations, especially unmarried youth, to ensure they are always available to them. Youth and their parents need to be supported to start income generating activities or should have access to revolving funds to enable them to acquire the necessary requirements during this time.

A study has observed a positive relationship between parental support and successful outcomes for the adolescent and her child during the maternity period (Dallas, 2004). Some youth were supported and encouraged by mothers even when fathers and the community were negative towards them. Youth needed support with transport, clothes and other hospital requirements to access maternal health services, which were provided by parents and some partners. Parents also accompanied the youth when they accessed maternal health services, especially at childbirth. The social and economic support from parents improved the psychological well-being of youth which in turn encouraged the youth not to abort and to access maternal health services, as was observed in the Barth et al., (1983) study. Therefore, this study established that there is a relationship between parent and partner abuse and support, and the use of maternal health services. Youth families and their partners and families should be counselled to accept and support youth so that they can access maternal health services and thus, improved pregnancy outcomes. For example, a socialisation programme helped families change attitudes and they supported mothers

during the maternity period (Domian, 2001). This helps improve the support given to the mothers during the maternity period.

8.3.2 Environment factors

This section discusses the environmental factors identified from the qualitative data analysis that influenced the use of maternal health services among unmarried youth and how they relate to existing literature. As proposed by the Andersen (1968) framework, environmental factors influence the use of maternal health services. This study identified factors such as long distance to the health facilities, cultural beliefs, and availability of alternative health providers as some of the environmental factors that were barriers and/or enablers to access maternal health services by unmarried youth.

Studies have found that long distances to the health centres reduce the chances of the use of maternal health services (Teagle & Brindis 1998; Atuyambe et al., 2005; Van Eijk et al., 2006; Arthur et al., 2007; Chaibva et al., 2009; Chaibva et al., 2010; Singh et al., 2013; Wilunda et al., 2014; Hokororo et al., 2015; Reibel et al., 2015). All research participants of this study noted that long distances coupled with poor roads, especially during the rainy season, contributed to discouragement of the youth from using maternal health services, especially seeking frequent antenatal care, and the use of health facility births. The most common means of transport were motorcycles since public transport and ambulances are limited, but some youth could not afford the costs of hiring motorcycles and had to walk. The transport problem was worsened when labour pains started at night, and the youth could not obtain adequate means of transport to take them to the health centres. Therefore, youth had home births even when they had planned to give birth at the health centres.

Youth in the study districts need support with transport during the maternity period. For instance, the use of transport vouchers and contracted motorcycle ambulances which have been associated with increased use of ANC and delivery care services in different regions in Uganda (Kajubu, 2009; Pariyo et al., 2011; Ekirapa-Kiracho et al., 2011; Save the Children, 2017; Roads & Kingdoms, 2018). These need to be scaled up to other regions and districts of Uganda. Provision of ambulances and other means of transport should always be available to youth in all areas, especially for use during the child delivery period. In addition, health centres need to be evenly distributed and well staffed and stocked with

medicines, especially in rural areas where most of the population in Uganda resides. This will reduce the distances to the health centres for populations in rural areas, as well as the use of traditional birth attendants, as youth in this study and prior studies reported accessing health services from TBAs, because they are located close to them in their communities (Chaibva et al., 2009; Wilunda et al., 2014). The road and public transport network also need improvement in Uganda.

Studies have found that women's cultural beliefs play a part during pregnancy and child birth, including the use of local medicines (Burk et al, 1995; Maimbolwa, 2003). Some cultural beliefs are harmful and discourage the use of maternal health services, for example, the belief that child birth is the test of the woman's strength (Kyomuhendo, 2003). Some studies found that some cultural beliefs stopped women from accessing maternity care, because of fear that their cultural beliefs will not be respected (Burk et al, 1995; Atuyambe et al., 2008; Kwagala, 2013). In the current study, youth were found to have used local medicines that they believed would give them energy, increase blood levels, widen the birth canal during pregnancy, and bring on the onset and to quicken labour. This was found to discourage the use of antenatal care services among youth. In this analysis, youth did not report hospital procedures that violated their cultural beliefs, only that health providers did not approve of the use of local medicines and were discouraged from using them, especially the herbs taken during the pre-birth pains' period, to quicken the delivery process.

One environmental factor worth noting is the availability of alternative 'health providers' in the communities. These are available to the youth and are trusted to check on the pregnancies and to assist with childbirth. This is due to TBAs not being expensive, provide culturally accepted care especially local herbal medicine, and are located within the communities. This affected the use of maternal health services among unmarried youth and h. This has been found in other studies, that women prefer to access maternal health services from TBAs because they are cheap, friendly, supportive and easily available (Kowalewski et al., 2002; Van Ejik., 2006; Atuyambe et al., 2005, 2009; Mwangi & Warren, 2008; Chaibva et al., 2009; Kabayambi, 2013; Wilunda et al., 2014). However, TBAs can be better trained on how to identify complications (Hodnett, 2012) or supported and encouraged to refer the youth to the health centres (Essendi et al., 2011; Tomedi et al., 2012; Miller & Smith, 2017). Provision of delivery kits to TBAs can also reduce the

postpartum infection incidences for both the mother and infant (Essendi et al., 2011). They can also be allowed to assist the youth from the health centre in which they will have access to modern equipment, as well as any support needed from health providers in case of an emergency (Mwangi & Warren, 2008; Byrne & Morgan, 2011). However, this requires the health professionals to respect and support TBAs when they refer or come to attend to women from the health centres (Hodnett, 2012). Therefore, if TBAs are included in the supply of maternal health services, improvements in access to maternal health services will follow, giving rise to a reduction in maternal deaths due to infections or assistance from untrained attendants, along with greater access to emergency obstetric services.

8.3.3 Health provider factors

This section discusses the health provider factors that were found to influence the use of maternal health services among the youth. Attitudes of the providers, sex of the provider, long waiting hours and quality of information received were some of the health provider factors observed to encourage or discourage youth from accessing maternal health services in the current study and are discussed below.

Senderowitz, (1998) found that health providers find discomfort in providing reproductive services to unmarried young people. This was the case for the youth in this study. Unmarried youth were discriminated against in the way they were treated by health providers. They were abused, teased, and not cared for because of their age. The phrase '*I did not send you there (to men)*' was used by providers to stop youth from questioning their behaviour and non-support. Poor attitudes of health providers can have an impact on the future use of the services by these youths. Previous studies have found that the reason for reduced chances of the use of maternal health services by higher parity was due to poor health provider attitudes (Simkhada et al., 2008; Downe et al., 2009; Arthur, 2012; Shiferaw et al., 2013); something reported in this study. It was noted by all participants as being among the major hindrances to the use of maternal health services. Prevalence of poor health provider attitudes to youth have been found in other studies (Atuyambe et al., 2005, 2008; Hokororo et al., 2015; Reibel et al., 2015) and greatly influence the use of maternal health services among youth and women in general (Teagle & Brindis, 1998; Kyomuhendo, 2003; Mathole et al., 2003; Kruk et al., 2009; Chaibva et al., 2009 & Chaibva et al., 2010). A lot more needs to be done to improve the attitudes of providers to

support unmarried youth in Uganda, most of whom reported that they want to be treated with respect, confidentiality, empathy and not to be teased because of their age. The improved health provider attitudes will also reduce the use of TBAs for maternal care, as studies show that women access maternal services from TBAs, because they are not rude and are supportive (Chaibva et al., 2009; Kabayambi, 2013).

The results revealed that youth were satisfied with the support received from the male health providers and preferred to be cared for by male providers. This has been found in previous studies, including in Uganda itself, as women described male health providers to be gentle, calm, sympathetic, and more understanding than some female midwives (Tegulle, 2013). This contradicts what has been found in other studies where women preferred female providers for gynaecological examinations and child birth (Schmittiel et al, 1999; Rizk et al., 2005; Gage, 2007; Singh et al., 2014), religious reasons especially Muslims. (Rizk et al., 2005; Singh et al., 2014) and believing that they take good care of patients (Fennema et al., 1990; Schmittiel et al, 1999). However, this was not the case in this study. The female providers abused and teased the youth in this study (chapter 7). Therefore, males should be encouraged to take midwifery courses, but more importantly, training on youth-friendly care that is provided with respect, should be provided to all health providers (WHO, 2012). Health providers of both sexes should be available, and youth should be given the choice whether to be attended to by a male or female provider.

Youth also needed information on the use of maternal health services, and this was obtained from parents, community members, Village Health Teams (VHTs) and health providers. The information obtained compelled them to use maternal health services. Some youth were given information on the use of local herbal medicines which were found to discourage them from using antenatal care services. The VHTs encouraged them to access maternal health care. However, some youth were dissatisfied with the information received from health providers during antenatal care, childbirth, and during the postpartum period. In prior studies, young women have been found to receive less information, especially during the postpartum, regarding child care and infant feeding (Wray & Davies, 2007; Hunter, 2008). The information on the importance of some procedures and tests were not shared with the youth in this study. The majority of them were not informed about postnatal care for themselves, except for immunisation of the infant. The limited information about

postnatal care seems to be lacking in Uganda, as has been identified in an earlier study that observed that respondents did not know about the need for postnatal care, except for immunisation (Waiswa et al., 2008). Health providers need to follow guidelines on focused ANC, delivery and postnatal care so that uniform information is shared with the youth.

The results of this study show that unmarried youth waited longer hours to receive the services, especially during antenatal care. This was due to several factors including high patient to staff ratios and irregular opening hours. Previous studies among the youth have found a relationship between long hours of waiting and reduced chances of the use of health facilities at childbirth (Teagle & Brindis, 1998; Duggan & Adejumo, 2012; Hokororo et al., 2015; Reibel et al., 2015). This was because more time spent at hospital was competing with the time needed for other chores, like agriculture (Hokororo et al., 2015). Studies found that waiting areas were uncomfortable for youth because they did not have enough seats (Duggan & Adejumo, 2012; Hokororo et al., 2015), or they were not private for youth who did not want to be recognised by other community members (Reibel et al., 2015). This study found that waiting areas were uncomfortable for youth because they were not private. In addition, the longer the time they spent there, the longer they went without food, since most of them did not have money to buy food at the health centres.

The waiting time is worsened by the implementation of some unrealistic government policies, which prioritise women who come with partners (couples) to be attended to first in Uganda (UNICEF, 2016b; WHO, 2016b). This meant that youth who, in most cases, have no partners coming with them to access the maternity care services would be made to wait longer; something which substantially discouraged them from coming back to access ANC. Studies among the married women in Uganda have shown that male involvement is still low, because of fear of HIV testing (Rujumba et al., 2013), lack of time (Byamugisha et al., 2011), and lack of men-friendly services and long waiting hours (Kabagenyi et al., 2014). In addition, women hire partners, especially motorcycle riders, to act as partners so that they can receive services sooner (UNICEF, 2016b). However, unmarried youth cannot afford to hire partners since they are not economically well-off, as noted in this analysis. In addition, hiring partners makes this policy of giving priority to couples inefficient, and it does not meet its intended objectives. The population should be educated about the importance of male involvement in reproductive health issues. This can be done through

several channels, including community meetings and involving male VHTs to talk to males to encourage them to use the services when their wives are pregnant. Special consideration for groups of people who might not have partners to accompany them to access the services should also be planned for.

8.4 The contribution of the study

Firstly, the use of quantitative and qualitative methods helped to reveal a deeper understanding, and insight of the factors for the use and the experiences in the use of maternal health care services. This includes factors that are supported by previous literature, including factors related to family and community reactions and support, need, environment, and the health provider factors which are usually missing in the national surveys that most studies have utilised. The qualitative data that followed also helped to obtain explanations for the observed quantitative results. The explanatory sequential mixed method design employed in this study greatly improved the internal validity of the results.

From the quantitative analysis, I found that unmarried youth use antenatal care poorly compared to the married youth that is unmarried youth start the use of antenatal care late and have few antenatal care visits. However, unmarried youth use health facilities at childbirth better than married youth. The poor use of antenatal care among unmarried youth could be due to fear of poor family and community reactions which compels them to hide the pregnancies until they are discovered or are recognised which affects the time of initiation and frequency of antenatal care. The higher chances of use of health facilities at childbirth among unmarried youth could be due to non-use or poor use of antenatal care, the parents after recognising the pregnancies support the unmarried youth to use health facilities at childbirth in order to avert the would-be negative impact of non-use of antenatal care.

The most surprising thing I found out in this analysis was the negative relationship between education level and the timing of antenatal care among unmarried youth. Unlike other studies among youth that have found that higher education level is associated with early start of antenatal care use, this thesis found that unmarried youth with secondary or higher education level were associated with late start of antenatal care. The qualitative study went on to find out the reasons for this observation and it was found that due to poor family and

community reaction for a girl who gets pregnant while at school or educated makes them to hide the pregnancies for long because they will be blamed for wasting parents' school fees. This in turn affects their initiation of the use of antenatal care.

Also, the qualitative analysis found the negative impact of the implementation of a policy of improving male involvement on the use of reproductive health services and the use of maternal health services by unmarried youth. This policy indirectly punishes unmarried youth by waiting longer times to receive the service, being denied a service or being made to come back on another day for the service. Coming without partners was also a cause of abuse from health providers. This is because this policy gives priority to couples to receive the services. Given the poor economic condition of these youth and the long distances travelled to come to the health centre, giving them an extra appointment costs them a lot. This greatly discouraged them from coming for maternal health services especially antenatal care.

It was also found that youth preferred to be attended to by male midwives because they were more professional, gave them quality information on nutrition, prescription for the medicines and supplements. Male providers also had ample time with the youth during the counselling sessions and they were reported to be sympathetic towards the unmarried youth. This could be due to the fact that midwifery was predominantly a female profession and males who join it go in with the passion to help women. Also, since males are few in this profession they might be in the eyes of the media/ followed thus they have to be careful.

Finally, one important contribution of this study is that it has strengthened the applicability of the behavioural model of access to medical care. It extends the previous literature and theoretical understanding of the Andersen behavioural model of access to medical care, to explore the impact of psychological distress and social support to the unmarried youth on the use of maternal health services among them. Since most unmarried youth stay with their parents, this study extends the current literature and theoretical conceptualisation of access to maternal health services by exploring the impact of parents' attitudes, the available support to unmarried youth, and how they influence the use of maternal health services. This study suggests that psychological distress and social support may be either barriers to or enablers for the use of maternal health care services among unmarried youth.

Psychological distress from physical and verbal abuse by parents acts as a barrier to the use of maternal health services due to negative support from fathers as a result of the disappointment from the youth pregnancies. Due to negative attitude and limited support with hospital requirements like delivery kit, clothes, the youth are reluctant to seek care. On the other hand, due to stress from the parental abuse, there is need for pscho-social support from health providers and thus youth go to health centres to seek for such support from individuals they hope to be supportive.

8.5 Limitations of the study

This section presents the limitations of the study to guide the interpretation and generalisation of its findings to a wider population. Although care was taken to ensure strong methodological rigour, there were still some limitations. Before listing and explaining the limitations, it is important that I mention one unique strength of this thesis: the explanatory sequential mixed methods research design. As opposed to most research studies among the youth that have used one research method, or mixed designs that have had quantitative and qualitative data collection done at the same time (Mgandi et al., 2009), this study used mixed explanatory sequential design. The combined use of quantitative and qualitative methods enabled me to present a fuller picture of the factors for the use, and the experiences of unmarried youth in the use of maternal health care. The sequential nature of the study was utilised to follow up the quantitative results with qualitative data, to capture conceptual explanations for the observed patterns in the quantitative analysis. This greatly improved the internal validity of the study results and allows the reader to draw meaningful conclusions regarding the use, and experiences in the use of maternal health services among youth in Uganda. However, like all studies, there were some limitations that still occurred and are discussed below.

8.5.1 Quantitative data limitations

Uganda Demographic and Health surveys (UDHS) collect data from women for births in the last five years before the date of the study, and mothers rely on remembering in order to answer the questions; something which may lead to inaccuracies due to memory lapse. Also, youth might be aware of the social desirability in the use of maternal health services and this might affect the way in which questions were answered. Furthermore, the

inattention given to some important variables that influence the use of maternal health services is a limitation common in secondary data analysis. Need, environment, and health provider factors were not explored in the quantitative analysis, although they surely play an important part in the use of maternal health services among all women. This is because UDHS data was collected for different objectives from the objectives of this thesis. The impact of some of these factors was captured through the qualitative data but was not included in the quantitative analysis, and their statistical significance for unmarried youth is unknown. Future surveys should include such variables to get a full picture of the predictors of maternal health services in Uganda.

Secondly, the cross-sectional nature of data from UDHS is that, we are not able to establish the time sequencing of events of interest. For instance, information on antenatal/delivery care relates to pregnancies within the last 5 years, while circumstances such as marital status, education level, wealth index are based on time of survey. These conditions could have changed since the index pregnancy.

Thirdly, this thesis is based on the 1995, 2000/01, 2006, and 2011 Uganda Demographic Health survey data. This thesis acknowledges that this data is relatively old and might not reflect the current situation in the use of maternal health services among youth. The 2016 UDHS would have provided the most recent data, to show the recent progress following the increased advocacy and policies aimed at increasing the use of maternal health services. However, the 2016 UDHS data was not yet available at the time of analysis for this thesis.

In addition, the small sample of unmarried youth in each cluster impacted on the second level of analysis under consideration in this study. The Uganda Demographic and Health Surveys sampling is random by cluster, and household levels. These would be the perfect levels for the multilevel analysis but given the few cases (less than five) of observations at household and cluster level, district level was used as a second level of analysis. Youth in clusters (community) might have similar characteristics compared to a bigger geographical area where youth might be independent of each other. For example, one part of the district might be more urbanised, more developed with better road network, and/or closer to higher level district health facilities which are usually located in urban centres compared to youth in the more rural parts of the district.

Lastly, the explanations of the patterns detected in the quantitative data by the qualitative data should be interpreted with caution. The qualitative data was collected in 2017 to explain the observed patterns in the quantitative data of 1995-2011. This was taken from different populations and was collected at distinct time periods. The reasons for the observed patterns in quantitative data might have changed and/or been influenced by changes in different population aspects over time, for instance, transport means, road networks, and Information, Communication and Technology (ICT), as well as changes in general societal attitudes towards non-marital childbearing and health policies.

8.5.2 Qualitative data limitations

This section looks at the challenges encountered during the qualitative data collection and analysis as presented below:

The participants were purposively sampled through Village Health Team members (VHTs) or snowballing. These youth experiences during the maternity period may have been different from unmarried youth whose pregnancies are not well known in the community. In addition, the sample was drawn from two western Uganda districts, and the youth experiences likely reflect that region.

Another limitation was the method used to recruit proposed participants, such as partners. This study had planned to include males who made the girls pregnant, in order to understand their experiences, the support they may require, as well as the support they offered to the youth during the maternity period. It had proposed to recruit them through the youth, since they are assumed to be in a better position to approach the men responsible for the pregnancy. However, this yielded an insufficient sample (one partner), as youth were hesitant to link the research team to their partners. It would have been better to have had multiple sources of participants, but this would create an unknown extent to which these methods would have biased the sample. Future researchers need to think of creative ways of obtaining youth partners so as to explore their experiences, and guide policy making.

The qualitative research was a learning experience for the researcher as this was her first attempt to carry out a qualitative research project. This is evident in the challenges faced during the recruitment of focus group discussion (FGD) participants, as well as the research tools that were lacking in background information. However, this improved as fieldwork

progressed, the next FGDs were well attended. The participants were active and provided research related information. The guides were also updated to include identified themes that were important to achieve the objectives of the study.

Focus group discussions are criticised as being divergent from interpretative phenomenological analysis (IPA) aims, since they do not capture detailed personal experiences (Braun & Clarke, 2013). However, this study aimed at gaining an understanding of the experiences of unmarried youth, but not case studies. FGDs are good at broader socio-cultural and community beliefs that impact on youth experiences and their use of the maternal health care. FGDs encourage interaction, recall, and discussion as they agree or disagree on different topics which helps capture community perspectives. This helped to gain greater insight into diverse opinions, beliefs, practices, and experiences during the maternity period. FGDs were homogeneous in order to encourage greater interaction. FGDs were empowering to these youth as they reported that they had learned something about maternal health care, especially postnatal care. In this study, FGDs were used together with interviews to achieve the objectives of the study.

8.6 Chapter summary

This chapter draws together the findings from both quantitative and qualitative data sets, discussing them in reference to the literature. In some parts of this analysis, the current study agreed with existing findings; however, it also revealed certain context-specific features that distinguished its findings from those in the literature. The major contribution of the exploratory sequential mixed methods study is provided. Finally, the limitations of the study are highlighted in this chapter.

9 Chapter nine: Conclusion and Recommendations

9.1 Thesis summary

This research set out to find the predictors of the use of maternal health care services among unmarried youth aged 15-24 years; and the experience and support in the use of maternal health care services among unmarried youth aged 15-19 years in Uganda. Guided by the behavioural model of access to medical care, it was hypothesized that predisposing and enabling factors influence the use of maternal health care services among the youth.

Reviewing the facts and figures about the use of maternal health services among unmarried youth in Uganda, as well as the policy responses highlighted the need to investigate this issue further. The study was also driven by the clear gap identified in the systematic literature review. The review identified factors that influence the use of maternal health services among youth, and differences were identified across regions. For example, among developed countries, quality of the services was a major barrier while for developing countries, availability of services, demographic, and socio-economic factors seem more important. The review also shows that socio-economic contexts, attitudes towards non-marital pregnancies, and policy creates variations in factors influencing the use of maternal health services within and across nations.

The current study employed an explanatory mixed methods research design to find factors for the use of maternal health care services among unmarried youth aged 15-24 years, and the experiences of unmarried youth aged 15-19 years in the use of the maternal health services in Uganda. The first phase was the secondary analysis of pooled data from the 1995, 2000/01, 2006, and 2011 Uganda Demographic and Health surveys (UDHS) to find factors for the use of maternal health services. The major factors that were identified in the literature review, and which were available in the secondary data were predisposing and enabling factors. Three district level variables were developed from the population level variables. Multilevel models were used to find individual and community/district level predictors of the use of maternal health services among youth. The qualitative component that followed the quantitative data analysis and synthesis, involved semi-structured in-depth interviews with unmarried youth and their parents. Focus group discussions with unmarried youth, and key informant interviews with health providers of maternal health care in Kibale

and Bushenyi districts were also conducted. The qualitative component of this research was to collect data on the experiences of unmarried youth during the maternity period, and to understand the meaning of the findings from the quantitative data analysis. This enabled the problem to be explored from different perspectives of the youth, their parents and service providers.

The findings of the current study reveal that the use of maternal health care services is still low among unmarried youth; below the WHO recommended levels. This study also observed that the use of maternal health services is influenced by predisposing and enabling factors. Important variations in the factors that influence the use of maternal health services among unmarried and other populations were observed. For instance, while higher educational attainment has been found in previous literature to be associated with early start of ANC the association was reversed for unmarried youth in this study.

The qualitative results reveal that the experiences of the unmarried youth in Kibaale and Bushenyi districts were both negative and positive through the maternity period. Most youth experienced negative reactions from parents, partners and community. This caused psychological distress to these youth as most partners denied responsibility for the pregnancies, and parents physically and verbally abused them. Most of them had limited support, especially from partners and fathers. However, some obtained support with information, hospital requirements, and basic needs from parents, especially mothers. Few received support from their fathers, partners, and community members. Mothers were supportive of the youth mostly to discourage them from engaging in risky abortion.

At the health facilities, sharing of information was not tailored to unmarried youth who were pregnant for the first time. Most young women in this study were mistreated by health providers. They waited for long hours to receive the services, in a non-private waiting area or were denied services because they did not go with partners, as the implementation of a policy aimed at increasing male involvement in reproductive health gave priority to couples. A few were satisfied with the competence of the health providers, reported better treatment from the male providers, good maternal and child care information, and

appreciated supplies like *mama* kits¹¹. All these experiences influenced the unmarried youth use of maternal health services.

As clearly demonstrated from the integration of the two datasets, a multi-sectoral approach should be adopted to improve individual level factors and overcome barriers to the use of maternal health services, in order to reduce maternal deaths among unmarried youth. Not only does this study contribute to the understanding, and accrual of information regarding the knowledge gap relating to the influential factors that shape unmarried youth utilisation of maternal health services and their experiences during the maternity period in Uganda, it also offers valuable information for policy researchers. If findings are processed and policies are developed and applied, they will be beneficial for the youth in future.

9.2 Recommendations for policy and future research

9.2.1 Policy implications of the study findings

Firstly, this analysis found that youth were delayed at the health centres for lack of partners accompanying them during antenatal care (ANC), due to the prioritisation of couples in being offered the ANC services. Although the policy has well-intentioned benefits of male involvement in reproductive health, it indirectly impacts negatively on the unmarried youth, whose partners might have denied the pregnancy and/ or are not willing to accompany them to access the services. Therefore, the implementation of this policy requires revision in order to cater for the unique situation of unmarried youth.

Secondly, in Uganda, maternal health services are provided at no cost in all public health facilities. However, the level of use among youth is still low. The youth identified other barriers, such as long distances, transport cost, and the long time spent travelling to and/or waiting to receive the services at the health centres. Incentives need to be put in place to meet extra costs women encounter that hinder them from using the maternal health services, for example transport vouchers/refunds, and recruiting more staff at public health centres to reduce waiting times at the health centres. Community outreach services can also enable more accessible services to the youth.

¹¹ Details in chapter 6&7

Additionally, this research also shows that the needs of unmarried youth are different and unique compared to older and married women. Health providers and policy makers need to develop guidelines that meet their specific needs. For example, their counselling guidelines should include areas identified in this research, such as; disclosing pregnancy to family, violence during pregnancy, expectations during labour and child care. More time with health providers is needed for them to share their experiences during this relatively tough period in their lives. Having youth centres or specific days and times for the provision of maternal health care services to them, would also help offer extra privacy.

Health providers should have refresher courses on how to attend to unmarried youth with respect, privacy and confidentiality, in order to attract them to access the maternal health care services. Unmarried youth noted that they need to be treated with sympathy, but most providers are unsympathetic, and are hostile to them. On the other hand, the male providers were found to be sympathetic, furnished the youth with better information, and provided them with enough counselling time on a greater number of occasions than the female providers. Therefore, males should be encouraged to take on midwifery courses. This also requires change in community perspectives, that midwifery is a not a female only profession so as to reduce or eliminate the stigmatisation that occurs of males taking up these positions.

Further from this analysis, high levels of abuse from family, partners and health providers were reported. However, youth were not screened for violence and depression during the pregnancy or the postpartum period. Violence assessment guidelines should be adopted, and providers trained on how to assess and address abuse and its consequences, such as post-traumatic stress disorder (PTSD) among unmarried youth during this time. Routine assessment of violence and depression among unmarried youth is recommended. Support centres should also be set up to provide psychosocial support to the youth during this time. Training of providers in new policies is vital as midwives in Zimbabwe who had training in goal-oriented ANC approach were then able to apply it (Chaibva, 2010). More research to guide the introduction of this policy in relation to guidelines needs to be carried out if these policies and guidelines are to be adopted, leading to needed assessment and support by the health providers.

Next, this analysis showed that unmarried youth access maternity care services from traditional birth attendants (TBAs). Policies should be developed to make the use of TBAs during this time safe for the youth and women at large. This could be achieved by training TBAs in better maternal health care services, providing birth kits to improve hygiene and reduce infections among women and infants, and integrating TBAs in the service delivery chain. This can be achieved through having TBAs as sources of referral and motivating them economically so that they are encouraged to refer women to health centres, rather than seeing the referral of a woman to the health centre as a loss of income. TBAs should be trained and allowed to use health facilities to provide the maternity services to young women. When complications that require medical attention arise, they will be promptly attended to by the trained medical staff in the health facilities. This is better than when youth are at the homes of TBAs, which are quite often far from health centres. Due to the poor transport means and road network in Uganda, it would be a problem to have them arrive at the health centres on time to receive the needed medical attention.

Parents, especially fathers, should be encouraged to support their young daughters who get pregnant or give birth before marriage, as lack of social support was found to be associated with low use of maternal health services among youth. Efforts have been made to increase male involvement in reproductive health care. For the unmarried youth, efforts should be geared towards their fathers' support. This could be through male Village Health Teams as male community health workers were effective in informing and involving males to support their wives for early antenatal care in Kenya. Communities should be sensitised to encourage and support unmarried pregnant youth. This can be done through radio programmes, community meetings, and through religious gatherings where the community can be informed about the importance of the change in their attitudes towards these youths and the need for their support to the unmarried youth during this time.

This analysis shows that most unmarried youth do not have a regular source of income, to enable them to get the basic needs. Programs can be initiated to help these youths engage in gainful employment which will reduce the burdens they encounter during this time. In relation to this, mothers of the youth were a major source of support, but also lacked money to support their daughters and grandchildren. Mothers of the youth should also be

supported to start businesses or engage in commercial agriculture which will help them to support their children.

Youth and the whole population need to be educated about the benefit of the use of maternal health services. This analysis found that youth who had access to mass media and those who had knowledge about the benefits of the use of ANC and health facilities for childbirth, were more likely to use maternal health care. Therefore, more information should be shared through different channels, especially the radio, which is easily accessed in Uganda. Group-Centering and community health workers have all been found to have positive impact on use of maternal health services. Therefore, different communication modes can be utilised to minimise the weaknesses of each method.

9.2.2 Recommendations for further research

This study leaves a number of research questions for future research: the first one is a recommendation for a quantitative research study that collects data on health facility factors and how they impact on the use of maternal health factors. The national statistical offices should also incorporate these questions into the national surveys, to allow comprehensive analysis of this data to help inform policy. There should also be harmonisation of political demarcations that allow comparison and merging of the available secondary data. This study had considered merging the DHS with Service Provision Assessment (SPA) which has data on supply related factors, but this was hindered by lack of data on variables that could allow multilevel modelling at localised levels, for example cluster or district level. It was possible only at regional level, but this could not allow multilevel statistical analysis, since the number of regions were less than the minimum (10) required for meaningful statistical analysis. Future studies should examine statistically the contribution of environmental and provider related variables to the understanding of maternal health care utilization behaviour.

Since this study found that youth experienced abuse and mistreatment from their parents, the question that arises is: Could it be that their parents were already abusive even before the pregnancy? Is there a relationship between parents' mistreatment which could increase stress on the youth, and thus pregnancy among unmarried youth? These questions need to be explored further to find the relationship between stress and youth pregnancy.

Along similar lines, no violence, trauma or stress assessment was provided to the youth. Therefore, no support is provided to the youth who experience violence. More research to guide the introduction of stress assessment policy in relation to the adoption of guidelines relating to implementation of assessment and support is needed.

This study looked at the experiences and support provided by parents to the unmarried youth during this time. It also covered the parents' experiences after their daughters got pregnant and after childbirth. Most of the unmarried youth have siblings, therefore it would be interesting to pursue the siblings' experiences when their sister got pregnant. A comparative study of male and female siblings should be researched. A study that includes other family members, like sisters, brothers and grandparents is recommended since the youth mentioned that they had received support from them. However, this was beyond the scope of this study. Village health teams (VHTs) are another important population that should be studied to find out their roles in the access to maternal health services for these youth, and the challenges encountered in working with unmarried youth. Village health teams' support to unmarried youth during this period also needs to be researched.

This study had planned to interview youth partners to obtain a deeper understanding of their experiences and the support available to youth during this time. We had hoped to link with them through the youth; however, some youths had lost contact with their partners, while others feared revealing them to us. For these reasons, the interviews were limited. Multiple methods of recruitment of youth partners need to be employed in future studies.

It was commonly believed by the youth interviewed in this study that traditional birth attendants (TBAs) help to hide pregnancies so that they are not recognised until childbirth. A further study into how true this is, how it is done, and the impact on the pregnancy outcome would be intriguing. More information could be obtained through TBAs and the women who have used them for that purpose. A study on infants whose pregnancies were 'hidden' could help to find out if this action has any impact on the congenital development of the children.

The section on contradictory perspectives between parents and the unmarried youth, has important implications for future researchers who are considering interviewing one group of participants. The interpretation of their findings should be done with great care. Since

participants know the socially desirable situation for instance, parents know they must support their daughters and youth know that their partners must become known, and they must be supportive. Therefore, some report the ideal situation and not their experiences as observed in this study.

9.3 Concluding thoughts

This study sought to explore the predictors of and experiences in the use of maternal health care services among unmarried youth in Uganda. An assumption was made based on the behavioural model of access to medical care, that predisposing, enabling, environment, need and health provider factors influence the use of maternal health services among youth in Uganda. Data used comprised pooled 1995, 2000/01, 2006, and 2011 Uganda Demographic and Health Survey, and qualitative semi-structured interviews were carried out among unmarried youth aged 15-19 years, their parents, and health providers involved in the provision of maternal health services in Kibaale and Bushenyi districts. The findings show that use of maternal health services was associated with the hypothesized predisposing and enabling factors among youth. The qualitative study shows how need, environmental, and health provider factors act as barriers or enablers to the use of maternal health services among unmarried youth.

Youth had different experiences during this time but most of them had negative experiences. The study describes how an unmarried youth who becomes pregnant is stigmatised, and not cared for at home, in the community and by health providers. This pregnancy situation presents unique needs for the unmarried youth. While there were variations in the youth experiences, several themes show that there is some universality in the challenges unmarried youth experience that sometimes create barriers to their accessing of maternal health care services. Strategies are suggested to improve the care and support for the unmarried pregnant and young mothers, who are not yet recognised in policy documents, such as national health policy, reproductive health sharpened plans, national development plans and vision 2040 as a vulnerable population in Uganda.

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Appendix I: Study quality criteria

A. Systematic review

Study quality criteria

B. Systematic review

- i). Did the review address a clearly focused question?
- ii). Did the authors look for the right type of papers?
- iii). Do you think all the important, relevant studies were included?
- iv). Did the review's authors do enough to assess quality of the included studies?
- v). If the results of the review have been combined, was it reasonable to do so?
- vi). What are the overall results of the review?
- vii). How precise are the results?
- viii). Can the results be applied to the local population?
- ix). Were all important outcomes considered?

C. Qualitative data

- i) Was there a clear statement of the aims of the research?
- ii) Is a qualitative methodology appropriate?
- iii) Was the research design appropriate to address the aims of the research?
- iv) Was the recruitment strategy appropriate to the aims of the research?
- v) Was the data collected in a way that addressed the research issue?
- vi) Has the relationship between researcher and participants been adequately considered?
- vii) Have ethical issues been taken into consideration?
- viii) Was the data analysis sufficiently rigorous?
- ix) Is there a clear statement of findings?
- x) How valuable is the research?

D. Quantitative studies

- i) Does the study address a clearly focused objective?
- ii) Are the characteristics of study population clearly described?
- iii) Are the eligibility criteria for selection of participants clear?
- iv) Are the participants representative of target population?
- v) Does it indicate how many of those asked to participate did so in each group?
- vi) Are the outcomes clearly defined?
- vii) Is the justification for independent variables and definitions provided?
- viii) Is the data source and/ or data collection procedure clearly presented?
- ix) Are data collection tools defined?
- x) Does it indicate the number of participants for whom data was analysed in each group?
- xi) Is the data analysis method clearly articulated?
- xii) Is there a clear statement of all study results?
- xiii) How valuable is the research?

Appendix II: Articles included in the systematic review

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
1	Anderson & Rahn, 2016	Public, county hospital-USA,	<p>-To explore socio-demographic factors (marital status, parity, age, ethnicity) associated with the number of PNC visits sought by adolescents</p> <p>- To examine the role of socio-demographic factors (violence and depression) and number of PNC visits on infant complications, PBT, and birth appraisal among ethnically diverse adolescents</p>	Primary; Cross-sectional, descriptive Quantitative	Ethnically diverse adolescents aged 13-19 years	260	It varied by age of woman (lower among those aged below 17), gestational age & partner violence
2	Arthur et al., 2007	Bristol, UK	<p>- To explore teenage mothers' experiences of maternity services in the county, focusing on the accessibility and acceptability of services</p> <p>-To identify whether maternity services in the county meet the standards set by the Children's and Maternity National Service Framework (DH, 2004c).</p>	Qualitative/Phenomenological approach	Teenage mothers who gave birth within one year	Eight (8)	-Attended ANC before 12 weeks, faced problems of transport, inconvenient timing of ANC classes, far health centres, poor relationships in homes, schools, unfriendly staff which could have been influenced by age, poorly prepared for labour, not checked on time after labour, not given right medicine e.g iron, some had support from partners
3	Atuyambe et al., 2008	Wakiso district, Uganda	- To compare the health seeking practices of first time adolescents and adult mothers during pregnancy	Primary; Cross sectional survey,	Adolescents 13-19 years compared to	762 women (442)	<p>-Adolescents more likely to attend few ANC visits.</p> <p>-Sicknesses like malaria, fever, swollen</p>

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
			and early motherhood	Quantitative	adults 20-29	adolescents (13-19) and 320 adults (20-29)	<p>legs, anaemia & morning sickness.</p> <p>-More adolescents lacked enough food, more likely to be rejected by partners, violence from parents and being sent away from home or school; inappropriately dressed, be stigmatised by community, lacked disposable income, feared they might die while giving birth and were not certain whether their infants would survive.</p> <p>-Adolescents were advised by relatives where to give birth from, travelled when labour began and lack of money was the main obstacle to accessing medical health.</p>
4	Atuyambe et al., 2008	Wakiso district, Uganda	To explore the problems faced by pregnant adolescents	Primary; Cross sectional survey, Qualitative	ANC or PNC clients adolescents	6 FGDs & 6 KI interviews	Lack basic needs like shelter & food, face problems with family, partners & community
5	Birungi et al., 2011	Kenya	- To examine the use of maternal health care (prenatal care, PMTCT services, skilled attendance and postnatal care) services among HIV positive adolescents	Cross sectional survey, Primary; Quantitative	15-19 years old	506	<p>-ANC use varied by region, lower when person responsible for the pregnancy was not husband & higher parity (1-4), HIV positive attended less ANC visits than those who were HIV negative and less than 4 visits when parity was between 1-4.</p> <p>-Skilled delivery was higher in Nairobi & adolescents who received at least 4 ANC visits and reduced with higher</p>

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
							parity order --PNC odds were higher among those who had at least 4 ANC visits and were lower among those from the Coast & Rift valley region
6	Chaibva et al., 2010	Bulawayo, Zimbabwe	<ul style="list-style-type: none"> - To identify the midwives' perceptions about adolescents' late or non-utilisation of prenatal services - To obtain the midwives' recommendations for enhancing adolescents' utilisation of public prenatal services in Bulawayo 	Descriptive and exploratory design, self-administered interviews, Quantitative	Midwives, rendering prenatal services in 20 public health centres	52	Non-utilisation is due to poor family & support systems, poverty, high prenatal fees, unfriendly health workers' attitudes, fear of HIV tests & HIV positive results, low status of women in society, inadequate knowledge about benefits of prenatal care, peer influences, parents' influences & TBAs influence -IEC for adolescents, partners, parents & teachers, user-friendly prenatal clinics & services, sufficient human resource
7	Chaibva et al., 2009	Bulawayo, Zimbabwe	<ul style="list-style-type: none"> - To identify factors contributing to the non-utilisation of ANC services as perceived by adolescent mothers - To develop strategies to enhance adolescents' effective utilisation of ANC services 	Descriptive research design, quantitative	Adolescent mothers in postnatal wards who had no ANC	80	Non-use due to -Fears of disclosing pregnancy to parents or school, were feeling well, baby was kicking, lacked money to pay for ANC, no knowledge for ANC benefits, use of TBAs, no documents i.e ID to book for ANC

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
8	Cosey et al., 2010	USA	<ul style="list-style-type: none"> - To determine if a relation exists between family social support and the receipt of adequate prenatal care (APC) in African American teenage primiparas - To find out if family social support was different than nonfamily support 	Primary; Qualitative	Adolescents 15-18 years (convenience sample)	25	Family support beneficial than non-family support but the relationship was not statistically significant with ANC initiation and old adolescents 17-18 received more family support than young adolescents
9	Duggan & Adejumo 2012	KwaZulu-Natal, South Africa	<ul style="list-style-type: none"> - What were the perceptions of AMCs regarding maternity services in Kwa-Zulu Natal? - What were AMCs' expectations of the maternity services in Kwa-Zulu Natal? - What did AMCs consider to be an adolescent-friendly maternity service 	Primary; Qualitative	Adolescents (15-19)	18 (15 Blacks, 2 coloured & 1 Indian)	<ul style="list-style-type: none"> -Be treated like older clients -support from health professionals -- Breach of confidentiality- don't talk about them while hearing (privacy of what they have shared) -reduced waiting times - Comfort during waiting times like having enough chairs - Provided with relevant information e.g relevant departments they should visit so that they do not waste time queuing at wrong places - Provided with the right information of what to expect during pregnancy, at birth & child care - peer support
10	Haques et al.,	Bangladesh	- To understand the relationship between young mothers' autonomy	Cross sectional survey,	Currently married	1,810	-Sufficient ANC was related with high older age, at least primary education,

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
	2012		and reproductive health service (sufficient ANC visit, qualified ANC provider & delivery Assistance) utilization in Bangladesh	Quantitative; 2007 Bangladesh Demographic & Health Survey (BDHS)	women aged 15-24 years with a child aged 0-35 months		and urban residence, regular exposure to mass media, high overall maternal autonomy index, higher index for health and family planning and medium index for freedom of movement. ANC was insufficient among adolescents with high parity - Skilled provider for ANC was due to at least primary education & high employment & economic power decision making - Delivery by skilled provider was influenced by high age, urban residence, middle wealth index, and male child but reduced among Muslims
11	Hokororo et al., 2015	Rural Mwanza, Tanzania	- To explore barriers to reproductive health care - To seek simple ways that care, and treatment can be improved in this vulnerable population	Primary; Qualitative	Pregnant adolescents aged 15-20 years	9 Focus group discussions	-Lack of privacy as they were counselled in groups, examined in hallways -The health workers were unkind, long waiting hours, long distances, other household activities (agriculture) competing with time to go for ANC, shame & stigma from family & community
12	Hueston et al., 2008	USA	- To assess whether certain populations of adolescent girls were more likely to initiate early prenatal care - To examine what demographic	Quantitative; Birth certificate data	Females less than 20 years- Pre-teens (10-14), young	2,836,698	Increase in early initiation of prenatal care over the years -young teens more likely to delay initiation or have no prenatal care, - Those with less education & prior

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
			and social factors might be related to delaying prenatal care.		adolescents (15-16) & older adolescents (17-19)		births more likely to start late
13	Hunter 2008	Bristol, UK	- To discover teenagers' views about the level of information and support that they were being offered – To examine how the current care affected adolescents' breastfeeding decisions	Primary; self-administered questionnaire	Teenagers	29	Teenagers said hospital staff were friendly, supportive & gave information but they needed more information on breastfeeding and practical child care
14	Kamal 2009	Bangladesh	- To explore the prevalence of and factors associated with the utilization of skilled maternity care services among married adolescents in Bangladesh; - To investigate the extent to which the factors are affecting safe motherhood (seeking assistance from Skilled Birth Attendants (SBAs) and the use of medically-facilitated places for child-delivery) practices among them.	Cross sectional survey , Quantitative; 2004 BDHS	Married women who gave births during their teen years in the last 5 years preceding the survey	1,728	-Skilled ANC- urban residence, higher education levels for woman & husband, non-agriculture husbands, region and high-income levels & lower for second birth order - SBA higher for urban, secondary education for adolescent and husband, non-Muslims and at least middle income and lower among adolescents with higher parity
15	Kumar et al., 2013	India	- To examine the socio-economic disparities in the use of full antenatal care (3 ANC visits + 2 tetanus toxoid injections+ Iron tablets for 90 days) and	Cross sectional survey , Quantitative; 3 rounds of India	Ever married aged 15-19 years	Not given	-Full ANC was influenced by higher wealth index, higher women's & husband's education & urban residence and lower by SC & ST social groups

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
			professional attendance at delivery among adolescents	National Family Health Survey (INFHS)			-Professional attendance at delivery was influenced by higher wealth index, higher levels of woman & husband's education, social group and urban residence
16	Magadi et al., 2007	21 SSA countries	<ul style="list-style-type: none"> - To explore how the use of maternal health services by teenagers in sub-Saharan Africa compares with that of older women; - determine the extent to which observed differences in the use of maternal health services between teenagers and older mothers vary across countries of sub-Saharan Africa; and - examine the contextual country effect on the use of maternal health services among teenagers in the region. 	Cross sectional survey , Quantitative; DHS for 21 countries	N/A	N/A	Teenagers more likely to start ANC late in pregnancy in Malawi, TZ, Zambia, Uganda & Kenya, Early initiation was not related to adequate ANC. The old and teenagers more likely to have inadequate ANC-few times, non facility delivery and unskilled attendance high among 35-49 compared to the young. Between countries, teenagers were more likely to initiate ANC late, have few ANC visits, deliver out of the health facility compared to women of the same socio-economic status -Non- premarital births, urban residence, higher educational levels and first order births were associated with greater utilisation of maternal health services
17	Mngadi et al., 2002	Mbabane, Swaziland	- To explore maternity care services and support for adolescent mothers during normal childbirth.	Primary; Interviews, review of medical records and observations	Adolescents	33	Minimal verbal communication with midwives, some important medical tests not done, adolescents not encouraged to come with someone, some developed complications, caesarean section

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
18	Ochako et al., 2011	Kenya	<ul style="list-style-type: none"> - To determine the linkage between timing of the first ANC visit and delivery assistance - To establish the determinants of timing of first ANC visit and delivery assistance 	Cross sectional survey, Quantitative; 2003 Kenya DHS	Women aged 15-24 years at the time of birth	1,675	<p>ANC timing</p> <ul style="list-style-type: none"> -Higher odds of early initiation of ANC by secondary and above education, and currently married and lower for youths with 3 or more births. <p>Skilled delivery</p> <ul style="list-style-type: none"> -Odds of skilled delivery increased by medium wealth index and any use of ANC but reduced among adolescents with no education and those in rural areas
19	Rahman et al., 2011	Bangladesh	-Identification of individual factors which may facilitate or impede the effective use of healthcare (PNC provider & PNC timing) services for treating the maternal morbidity among the younger mothers	Cross sectional survey, Quantitative; 2007 Bangladesh DHS	Young women aged 15-24 years	2,376	<p>Type of provider-medically trained provider</p> <ul style="list-style-type: none"> -Age (old more than young), higher education, at least 3 or more ANC visits, delivering in HF, wealth, type of job, occupation of the husband, distance to health facility, husband or family concern over pregnancy complications <p>-Differential patterns in the timing of first postnatal check-up</p> <ul style="list-style-type: none"> -Associated with higher age at first marriage, urban residence, higher education levels, 4+ ANC visits, institutional delivery, husband's occupation & frequent exposure to mass media

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
							<p>seeking postnatal care from a medically trained person significantly improved by being 20 or over, mother's age at marriage of 15 or over, living in an urban area, education above primary level, and ANC and delivery away from home, middle wealth quintile and above, husbands working in professional occupations and regular exposure to mass media.</p> <p>-Timing of PNC within 2 days was due to similar variables as seeking care from the medically trained person except age at first marriage above 15</p>
20	Rai et al., 2014	Niger	- To explore factors associated with the utilization of MCH care (full antenatal care, safe delivery & full immunisation) services by adolescent mothers	Cross-sectional Survey, Quantitative; 2007 Niger DHS	Ever-married women who gave birth in their teen years (15-19)	934	<p>-ANC use high among Hausa and lower with birth order 2-3 and interval above 24 months</p> <p>-Probability for safe delivery higher among urban, educated women & educated husbands, Richer and richest, those who attended 4 ANC visits and among adolescents with decision making autonomy but lower among those who work away from home and those with higher parity and birth interval</p>
21	Rai et al., 2012	Nigeria	- To assess the factors associated with maternal health indicators (at least four antenatal care visits, safe	Cross sectional survey, Quantitative;	Ever-married adolescents	2,434	-Chances of 4 ANC visits increased among adolescents aged 18-19 years, urban, with secondary education,

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
			delivery care & postnatal care within 42 days of delivery) with reference to adolescent mothers	2008 Nigeria DHS	who gave birth in the last 5 years before the survey		<p>Muslims, with mass media exposure, higher wealth index and reduced by social group, higher birth order and interval and by region</p> <p>-Safe delivery was influenced by secondary education, mass media exposure, middle and richer wealth index, 4 ANC visits and less likely among Hausa, those with higher parity and birth interval</p> <p>-PNC use was higher among adolescents with primary education, south South region, 4 ANC visits & safe delivery and less among adolescents with higher parity and longer birth interval</p>
22	Rai et al., 2013	Malawi	- To demonstrate the factors associated with the utilization of maternal health care (at least four antenatal care visits & postnatal care within 42 days of delivery) services among married adolescents (aged 15–19) in Malawi	Cross-sectional Survey, Quantitative ; 2010 Malawi DHS	Married adolescent who experienced child birth five years before the survey during their teen (15-19)	2,160	<p>-4 ANC visits significantly varied by woman's age 18-19, at least middle wealth quintile & pregnancy wanted</p> <p>-PNC within 42 days was significantly higher for adolescents with some education, at least 4 ANC visits, Muslims & church of Central Africa Presbyterian, and lower birth order</p>

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
23	Reibel et al., 2015	Australia	<ul style="list-style-type: none"> - What do young women know - Who are young women learning from - Who do young women tell and why? 	Primary' Cross-sectional, qualitative	Young women, senior women and service providers	28 young women (16-21), 36 senior women and 20 service providers	<ul style="list-style-type: none"> -Mixed feelings about the pregnancy (Some wanted to get pregnant), some had family support others none which influenced their access to maternity care -Got information from older women who were trusted -Wanted trust from providers, they could travel to far off hospitals where their privacy was assured
24	Reynolds et al., 2006	15 Developing countries (5-sub-Saharan Africa, 5-Latin America & 5-South Asia)	- To examine adolescent mothers' use of maternal and child (antenatal care, delivery care and infant immunization) health services relative to older women in developing countries.	Cross sectional survey , Quantitative; DHS	women age 15-23(15-16, 17, 18, 19-23)	N/A	<ul style="list-style-type: none"> -Reduced chances for ANC use among adolescents below 18 years compared to those aged 19-23 years in Nicaragua, Bangladesh, India and Indonesia and reduced skilled delivery care in Brazil, Bangladesh, India and Indonesia. -However, the young women 15-18 were more likely to use skilled delivery care in Bolivia.
25	Rogers et al., 1996	South Carolina, USA	- To evaluate the effectiveness of a largescale social support intervention, the Resource Mothers for Pregnant Teens Project (RMP), in increasing prenatal care use and in improving pregnancy outcomes (i.e., LBW and PTB) among teenagers ages 18 years and under	Primary; Quantitative	- Pregnant Teens in RMP group (Compared to; Pregnant adolescents in other counties & pregnant	1,901 RMP group (Comp ared to; 4,163-Adolescents in other	<ul style="list-style-type: none"> RMP had higher odds of early initiation & adequate ANC -No effect on LBW Adolescents in RMG less likely to have a pre-term birth compared to all comparison groups

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
					adolescents in same counties)	counties & 712- Adolescents in same counties)	
26	Ryan et al., 2009	Peru, Amazon	<ul style="list-style-type: none"> - To document prenatal care coverage among adolescent and adult pregnant women in Iquitos, and; - To compare prenatal care coverage between adolescent and adult age groups 	Hospital birth entries between 2006-2007 in Apoyo hospital, Peru	Teenagers compared to older women	4384 (1,193 aged 10-19 & 3,191 aged above 20)	<ul style="list-style-type: none"> -Odds of attending ANC were lower among adolescents 10-14 than adults >_20 and for adolescents 15-19, the odds were higher than for adults 20 and above -Among primiparous women, young adolescents also had lower chances of attending ANC -Number of visits, 10-14 attended few times compared to those above 20 even among primiparous women -Number of times significantly varied by attendance from many HFs & peri-urban location of women -Min number of ANC attended was more than 4 for all adolescents- this could be due to accepted/ reduced stigma to adolescent pregnancy in Peru
27	Sein 2012	Kyimyindain g Township, Myanmar	- To identify maternal care utilization (antenatal, place of delivery, skilled attendants at birth & postnatal Services) patterns at the last pregnancy by elucidating the	Primary; Cross sectional survey , Quantitative	Evermarried youth aged 15-24 years	260 (110-urban, 150-rural)	<ul style="list-style-type: none"> Institutional delivery was influenced by urban residence, at least middle education & 4 ANC visits -PNC numbers was determined by

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
			socioeconomic factors for maternal care utilization			ever-married youth aged 15-24 years	urban residence and 4 ANC visits
28	Shahabuddin et al., 2015	Bangladesh	To understand the health-seeking behaviour of adolescent women in Bangladesh with respect to the use of maternal health services during pregnancy, delivery and post-partum	Systematic review	12 studies	N/A	<p>-ANC use was associated with higher education levels, urban residence, higher wealth index, no previous experience with child birth.</p> <p>-Number of ANC visits were higher among adolescents who married late, older adolescents and higher overall autonomy</p> <p>-Place of delivery was affected by higher education levels and urban residence, Hindu & Muslims and older age</p> <p>- Assistance at delivery was more likely among those with at least primary education, urban residence, use of adequate ANC & higher age at first marriage, higher incomes & having informed family members or partners about the pregnancy. It reduced with higher parity</p> <p>-PNC was associated with higher education levels, higher age, use of</p>

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
							sufficient ANC & delivery from hospital
29	Singh et al., 2013	Mali	- To assess the factors associated with the selected indicators of maternal healthcare (at least four antenatal care visits, safe delivery care & postnatal care) service utilisation among married adolescent women in Mali.	Cross Sectional Survey , Quantitative ; 2006 Mali DHS	Ever-married adolescents aged 15-19 years	1,646	-ANC significantly varied by husband's education, ethnic group, personal barrier index, mass media exposure, wealth index -Safe delivery was significantly influenced by women's education, husband's education, personal barrier index, birth order and interval, place of residence, at least 4 ANC visits, ethnic group and region -PNC significantly varied by work status, place of residence, utilisation of safe delivery, personal barrier, residence and region
30	Singh et al., 2012a	India	- To assess the determinants of maternal and child health indicators (full antenatal care, safe delivery & full immunisation) with reference to adolescent mothers	Cross-Sectional Survey , Quantitative ; 2005/06 India NFHS	Married adolescent women who had a birth in the adolescence (15-19) during the 5 years before the survey	5,253	-Full ANC was related to older age, urban residence, higher levels of woman & husband's education including incomplete primary, at least middle-income levels, region & visit by health provider. However, the lower odds were due to lower castes and parity of 2 or more and longer birth interval above 23 months. -Safe delivery was influenced by age 18-19, urban residence, educated adolescents and husbands, exposure to mass media, higher household income

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
							<p>& region. It was low among Muslims & Hindus, and those from lower social groups</p> <p>-PNC higher odds among 18-19, educated, richer adolescents and lower among urban, lower social caste and those whose pregnancy was unwanted</p>
31	Singh et al., 2012b	Rural India	- To assess the factors associated with selected maternal healthcare indicators (full antenatal care, safe delivery and postnatal care within 42 days of delivery) with reference to adolescent mothers in the age group 15–19 years living in rural India	Cross sectional survey, Quantitative; 2005/06 India National Family Health Survey	Married adolescent women residing in rural areas who had a birth in the adolescence (15-19) during the 5 years before the survey	3,599	<p>-Full ANC was determined by women's education, husband's education, economic status, birth order & interval, health provider's visit & region of residence</p> <p>-Delivery significantly varied by women's education, religion, social group, women's autonomy, exposure to mass media, economic status, birth order & interval and region.</p> <p>-PNC was significantly affected by women's education, social group, mass media exposure, wealth quintile, birth order & interval, health providers visit and region</p>
32	Singh et al., 2014	Urban India	- To examine the factors associated with selected indicators of utilization of maternal healthcare services with reference to adolescent mothers (13–19 years)	Cross sectional survey, Quantitative; 2007/08 India District Level Household Survey	Married adolescents 13-19 who had given birth to a live or stillbirth in the last 3	3,351	<p>-ANC: Mothers with primary, middle & higher education, husbands with high school or above, mothers from richer & richest wealth households, mother with parity two, region, mass media exposure, interpersonal communication with health provider, lower among Muslims than Hindus</p>

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
			living in urban India.		years preceding the survey		- Safe delivery: Higher and highest wealth quintile, ten years of schooling, husband's education, full ANC, region & lower for women with parity two & above and lower among Muslims compared to Hindus, - Postnatal care: Richest wealth quintile, primary education and above, Muslims than Hindus, full ANC and safe delivery, region
33	Teagle & Brandis 1998	Arkansas, USA	- Compare perceived motivators and barriers to public prenatal care among pregnant adolescents coming for their first prenatal care appointment and those coming for a follow-up visit - Compare the motivators and barriers identified by these two groups of adolescents to those identified by their prenatal care providers.	Primary; Exit interviews	First time and follow-up pre-natal adolescents (15-19) who were at least 12 weeks pregnant & providers	250 adolescents & 16 providers	Differences in adolescents & providers' perceptions of the barriers- Adolescents identified system factors (lack of finance & transport, waiting times for appointments) while providers perceived personal factors (feeling depressed, fear of procedures, no time & need for time to deal with family & other problems)
34	Upadhyay et al., 2014	Kathmandu, Nepal	- To determine the perceived influential person on a woman's decision to utilize antenatal and delivery care services among teen, young adult and adult pregnant women from the perspective of themselves, their husband and their	Primary; Cross sectional-quantitative	Women aged 34 or less who were accompanied by husband and mother in-law from	315 (205 compared to 110)	-Husbands influence decisions among adolescents on use of ANC & place of delivery than for adult women -Older age influences women decision

No	Author, Year	Country	Study objectives	Study design & type	Population	Sample size	Results
			<p>mother-in-law</p> <p>- To identify the factors associated with the woman being the most influential person in the decision to utilize care and assess the level of agreement between the woman's and husband's response to the woman being the most influential person.</p>		two health facilities;		
35	Wieman et al., 1997	University of Texas Medical Branch, US-Adolescent obstetric clinic	- To examine risk factors (including race or ethnicity and the use of tobacco, alcohol and illicit drugs such as marijuana) for late entry into prenatal care among a large sample of pregnant adolescent	Hospital records, Quantitative	adolescents younger than 18	533	<p>ANC timing</p> <p>-Late initiation for those who had no contact with the baby's father, no abortion history, no alcohol use, unemployed, Mexican Americans and Blacks, one sexual partner in last 12 months, lower educational attainment.</p>

Appendix III: Multicollinearity test

Variable	Unmarried Youth		Married Youth	
	Tolerance	VIF	Tolerance	VIF
ANC numbers				
Age	0.780	1.231	0.780	1.282
Parity	0.763	1.170	0.763	1.310
Pregnancy wanted	0.957	1.096	0.966	1.045
Religion	0.966	1.098	0.690	1.035
Woman's Education level	0.690	1.443	0.796	1.450
Place of residence	0.700	1.430	0.692	1.445
Region	0.795	1.258	0.789	1.267
Wealth index	0.777	1.288	0.700	1.256
Woman's Occupation	0.838	1.194	0.828	1.207
Frequency of reading newspapers	0.722	1.386	0.745	1.342
Frequency of listening to radio	0.848	1.179	0.892	1.122
Frequency of watching TV	0.680	1.470	0.701	1.427
Partner's age			0.882	1.133
Partner's Occupation			0.905	1.105
Partners Education level			0.830	1.205
ANC timing				
Age	0.803	1.246	0.778	1.286
Parity	0.846	1.182	0.761	1.313
Pregnancy wanted	0.897	1.115	0.956	1.046
Religion	0.903	1.107	0.968	1.033
Woman's Education level	0.688	1.454	0.693	1.443

Variable	Unmarried Youth		Married Youth	
	Tolerance	VIF	Tolerance	VIF
Place of residence	0.690	1.449	0.696	1.437
Region	0.795	1.258	0.792	1.262
Wealth index	0.756	1.323	0.792	1.263
Woman's Occupation	0.834	1.199	0.830	1.205
Frequency of reading newspapers	0.723	1.383	0.744	1.344
Frequency of listening to radio	0.849	1.178	0.897	1.115
Frequency of watching TV	0.678	1.475	0.702	1.425
Partner's age			0.879	1.138
Partner's Occupation			0.909	1.100
Partners Education level			0.829	1.206
Place of delivery				
Age	0.812	1.231	0.780	1.282
Parity	0.855	1.170	0.763	1.310
Pregnancy wanted	0.912	1.096	0.957	1.045
Religion	0.911	1.098	0.966	1.035
Woman's Education level	0.693	1.443	0.690	1.450
Place of residence	0.700	1.430	0.692	1.445
Region	0.795	1.258	0.789	1.267
Wealth index	0.777	1.288	0.796	1.256
Woman's Occupation	0.838	1.194	0.828	1.207
Frequency of reading newspapers	0.722	1.386	0.745	1.342
Frequency of listening to radio	0.848	1.179	0.892	1.122

	Unmarried Youth		Married Youth	
Variable	Tolerance	VIF	Tolerance	VIF
Frequency of watching TV	0.680	1.470	0.701	1.427
Partner's age			0.882	1.133
Partner's Occupation			0.905	1.105
Partners Education level			0.830	1.205

Appendix IV: Characteristics of the quantitative study respondents

Variable	Unmarried Youth		Married Youth	
	Frequency (581)	Percentage (100)	Frequency (5387)	Percentage (100)
Demographic characteristics				
Age				
15-19	249	42.9	1276	23.5
20-24	332	57.1	4162	76.5
Pregnancy wanted				
Then	149	25.6	3480	64.0
Later or not anymore	432	74.4	1957	36.0
Birth order/Parity				
One	473	81.3	1980	36.4
Two or more	108	18.7	3457	63.6
Spatial factors				
Type of Residence				
Urban	154	26.4	780	14.3
Rural	428	73.6	4657	85.7
Region				
Central	238	41.0	1512	27.8
Eastern	119	20.5	1617	29.7
Northern	76	13.0	1061	19.5
Western	148	25.5	1247	22.9
Socio-economic factors				
Woman's Education level				
No education or Primary education	342	58.9	4,544	83.6

	Unmarried Youth		Married Youth	
Variable	Frequency (581)	Percentage (100)	Frequency (5387)	Percentage (100)
Secondary+	239	41.1	893	16.4
Religion				
Catholic	227	39.0	2261	41.6
Protestant	231	39.8	1850	34.0
Others	123	21.2	1327	24.4
Wealth index				
Poorest	66	14.3	857	21.9
Poorer	67	14.5	822	21.0
Middle	79	17.0	690	17.7
Richer	89	19.1	642	16.4
Richest	163	35.1	896	22.9
Woman's Occupation				
Not working	177	30.5	1435	26.4
Agriculture	249	42.9	3202	58.9
Labourers	30	5.1	176	3.2
Professionals	125	21.5	1725	11.5
Frequency of reading newspapers				
Not at all	287	61.7	3292	84.3
Less frequent	153	32.9	553	14.1
More frequent	25	5.5	63	1.6
Frequency of listening to radio				
Not at all	155	26.7	1920	35.3
Less frequent	146	25.1	1038	19.1
More frequent	280	48.1	2479	45.6

Variable	Unmarried Youth		Married Youth	
	Frequency (581)	Percentage (100)	Frequency (5387)	Percentage (100)
Frequency of watching TV				
Not at all	433	74.5	4802	88.3
Less frequent	81	14.0	364	6.7
More frequent	67	11.5	271	5.0
Partner characteristics				
Partners Education level				
No education			535	9.8
Primary Education			3229	59.4
Secondary			1673	30.8
Partner's Occupation				
Not working			1368	25.2
Agriculture			932	17.1
Labourers			2311	42.5
Professionals			827	15.2
Partner's age				
15-24			1079	27.6
25-29			1671	42.8
30+			1158	29.6
TOTAL	N=581	100	N=5387	100

Appendix V: Determinants of ANC timing among youth aged 15-24 years in Uganda, 1995-2011

Variable				
Year of survey (1995)	Model 0	Model 1	Model 2	Model 3
2000/01	1.23(1.00-1.50)*	1.23(1.00-1.50)*	1.23(1.01-1.51)*	0.73(0.59-0.91)
2006	1.47(1.20-1.80)*	1.49(1.21-1.82)*	1.48(1.20-1.81)*	0.81(0.66-0.98)
2011	1.96(1.61-2.39)*	1.98(1.62-2.42)*	1.92(1.57-2.35)*	1.00(1.00-1.00)
Marital status (<i>Never married</i>)				
Currently married		1.26(1.00-1.58)*	1.34(1.05-1.71)*	1.32(1.01-1.74)*
Age group (15-19)				
20-24			1.09(0.92-1.30)	1.09(0.89-1.33)
Parity (<i>One</i>)				
Two+			0.80(0.69-0.94)*	0.77(0.65-0.92)*
Pregnancy wanted (<i>Wanted then</i>)				
Wanted later or no more			0.89(0.76-1.03)	0.90(0.76-1.07)
Place of residence (<i>Urban</i>)				
Rural				1.02(0.80-1.31)
Region (<i>Central</i>)				
East				0.60(0.41-0.88)*
North				1.37(0.93-2.02)
West				0.99(0.69-1.43)
Religion (<i>Catholics</i>)				
Protestant			0.81(0.69-0.96)*	0.82(0.68-1.00)*
Others			0.91(0.77-1.09)	0.99(0.82-1.21)
Education (<i>No or No education</i>)				
Secondary+			1.22(1.03-1.45)*	1.26(1.02-1.55)*
Wealth Index (<i>Poorest</i>)				

Poorer				0.90(0.69-1.16)
Middle				0.88(0.67-1.17)
Richer				1.00(0.75-1.34)
Richest				0.77(0.57-1.05)
Woman's Occupation (Not working)				
Professionals				0.96(0.75-1.23)
Agriculture				1.04(0.83-1.29)
Labourers				0.96(0.63-1.46)
Frequency of reading newspapers (Not at all)				
Less frequent access				1.01(0.80-1.26)
More frequent access				1.18(0.73-1.93)
Radio (No access)				
Less frequent access				1.08(0.85-1.37)
More frequent access				1.39(1.11-1.73)*
Television (No access)				
More frequent access				1.16(0.90-1.50)
Less frequent access				1.38(1.01-1.90)*
Random variance(SE)	0.238(0.065)*	0.240(0.066)*	0.220(0.061)*	0.106(0.040)*
IDC	0.068	0.068	0.063	0.031
VPC=ICC*100	6.8	6.8	6.3	3.1
VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Statistical significance at 5% level $p<0.05$. Model 0- No covariates controlled for Model 1- Controlling for marital status Model 2- Controlling for predisposing factors Model 3- Controlling for predisposing and enabling factors				

Appendix VI: Generalised linear regression of the mean number of ANC visits among youth including marital status

Variable	Model 0	Model 1	Model 2	Model 3
Constant	3.775(0.091)	3.653(0.129)	3.483(0.143)	3.298(0.229)
Year of survey (1995)				
2000/01	0.081(0.0840)	0.082(0.084)	0.069(0.083)	0.656(0.090)*
2006	-0.154(0.086)	-0.149(0.086)	-0.190(0.086)*	0.344(0.085)*
2011	-0.333(0.088)*	-0.326(0.088)	-0.435(0.088)*	0.000(0.000)
Marital status (Never married)				
Currently		0.132(0.099)	0.302(0.106)	0.258(0.115)*
Age (15-19)				
20-24			0.161(0.076)*	0.097(0.085)
Parity (One)				
Two+			-0.237(0.070)*	0.293(0.078)*
Pregnancy wanted (Wanted then)				
Wanted Later or no more			-0.083(0.064)	-0.117(0.070)
Education (No education or Primary education)				
Secondary+			0.710(0.079)*	0.365(0.093)*
Religion (Catholics)				
Protestant			-0.084(0.071)	-0.113(0.080)
Others			0.030(0.079)	0.015(0.085)
Place of residence (Urban)				
Rural				-0.196(0.107)
Region (Central)				
East				-0.344(0.146)*
North				0.030(0.159)
West				-0.555(0.149)*

Religion (Catholics)				
Protestant			-0.084(0.071)	-0.113(0.080)
Others			0.030(0.079)	0.015(0.085)
Education (No education or Primary education)				
Secondary+			0.710(0.079)*	0.365(0.093)*
Wealth Index (Poorest)				
Poorer				0.134(0.111)
Middle				0.082(0.117)
Richer				-0.051(0.125)
Richest				-0.235(0.125)
Woman's Occupation				
Not working				0.273(0.108)*
Agriculture				-0.092(0.093)
Labourers				0.372(0.176)*
Newspapers (No access)				
Less frequent access				0.268(0.100)*
More frequent access				0.629(0.228)*
Radio (No access)				
Less frequent access				0.205(0.097)*
More frequent access				0.412(0.090)*
Television (No access)				
Less frequent access				0.037(0.114)
More frequent access				0.419(0.145)*
Random variance(SE)	0.212(0.055)*	0.214(0.056)*	0.171(0.047)*	0.058(0.024)*
IDC	0.039	0.04	0.33	0.0123
VPC	3.9	4	3.3	1.3
VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Statistical significance at 5% level $p<0.05$.				

Model 0- No covariates controlled for
Model 1- Controlling for marital status
Model 2- Controlling for predisposing factors
Model 3- Controlling for predisposing and enabling factors

Appendix VII: Predictors of the use of health facilities at childbirth among youth between 1995-2011 including marital status

Variable	Model 0	Model 1	Model 2	Model 3	Model 4
Constant					
Year of survey (1995)					
2000/01	1.30(1.11-1.52)	1.30(1.11-1.52)	1.32(1.12-1.55)*	0.46(0.38-0.57)*	0.51(0.41-0.63)*
2006	1.51(1.28-1.78)	1.49(1.26-1.75)	1.44(1.22-1.71)*	0.59(0.49-0.72)*	0.64(0.53-0.77)*
2011	3.30(2.77-3.92)	3.24(2.73-3.86)	2.97(2.48-3.56)*	1.00(1.00-1.00)	1.00(1.00-1.00)
Marital status (Never married)					
Currently		0.70(0.58-0.86)	1.20(0.96-1.49)	1.41(1.08-1.84)*	1.01(0.79-1.29)
Age (15-19)					
20-24			1.07(0.92-1.24)	1.02(0.84-1.23)	0.95(0.74-1.16)
Parity (One)					
Two+			0.50(0.44-0.58)*	0.50(0.42-0.59)*	0.54(0.35-0.72)*
Pregnancy wanted (Wanted then)					
Wanted Later or no more			1.05(0.92-1.17)	1.09(0.94-1.27)	1.05(0.89-1.21)
Education (No education or Primary education)					
Secondary+			3.45(2.90-4.10)*	2.20(1.77-2.74)*	2.36(1.90-2.93)*
Religion (Catholics)					

Protestant			1.08(0.94-1.24)	1.15(0.97-1.37)	1.15(0.97-1.37)
Others			1.26(1.08-1.48)*	1.18(0.98-1.43)	1.18(0.98-1.42)
Place of residence (<i>Urban</i>)					
Rural				0.33(0.25-0.42)*	0.31(0.24-0.41)*
Region (<i>Central</i>)					
East				0.77(0.49-1.21)	0.82(0.52-1.28)
North				0.65(0.40-1.06)	0.67(0.42-1.08)
West				0.55(0.35-0.88)*	0.6(0.39-0.94)*
Wealth Index (<i>Poorest</i>)					
Poorer				1.15(0.91-1.45)	1.16(0.92-1.46)
Middle				1.37(1.07-1.75)*	1.41(1.10-1.80)*
Richer				1.15(0.88-1.51)	1.19(0.90-1.56)
Richest				1.36(1.03-1.80)*	1.45(1.09-1.93)*
Woman's Occupation (<i>Not working</i>)					
Professional/Managerial				0.87(0.67-1.12)	0.81(0.63-1.05)
Agriculture				0.67(0.55-0.82)*	0.65(0.53-0.79)*
Labourers				0.95(0.65-1.40)	0.93(0.64-

					1.37)
Newspapers (No access)					
Less frequent access				1.26(1.00-1.59)*	1.32(1.05-1.66)*
More frequent access				1.34(0.68-2.65)	1.38(0.70-2.75)
Radio (No access)					
Less frequent access				1.24(1.01-1.53)*	1.23(1.01-1.51)*
More frequent access				1.55(1.28-1.87)*	1.54(1.28-1.86)*
Television (No access)					
Less frequent access				1.03(0.79-1.33)	1.04(0.81-1.35)
More frequent access				1.71(1.08-2.70)*	1.79(1.13-2.83)*
Education level (<i>Low</i>)					
Middle					1.58(1.09-2.29)*
High					0.77(0.35-1.71)
Mass media exposure (<i>Low</i>)					
Middle					0.64(0.24-1.73)
High					0.86(0.25-2.94)
Wealth level (<i>Low</i>)					
Middle					2.21(0.82-5.98)

High					2.56(0.98-6.70)
Random variance(SE)	0.633(0.136)*	0.62(0.135)*	0.525(0.117)*	0.246(0.066)*	0.23(0.062)*
IDC	0.161	0.159	0.138	0.07	0.065
VPC	16.1	15.8	13.8	7	6.5
VPC=Variance Partition Coefficient, IDC=intra-district correlation, *Statistical significance at 5% level $p<0.05$. Model 0- No covariates controlled for Model 1- Controlling for marital status Model 2- Controlling for predisposing factors Model 3- Controlling for predisposing and enabling factors Model 4- Controlling for predisposing, enabling and district level factors					

Appendix VIII: Characteristics of in-depth participants (unmarried youth)

ID Participant one

She is sixteen years, stays with sick father. She has a three months baby, did not go for ANC because she did not know she was pregnant but was checked by a TBA and gave birth from a health centre to a seven-months premature. She got pregnant when she had gone to work in a far-off town & left before partner got to know she is pregnant. She has no contact with partner. She has no contact with partner, he does not know she has his child. She is a shopkeeper at the father's very small retail shop.

IDI Participant two

She is seventeen years, two months pregnant and we found her at the health centre as she had come for ANC for the first time. She just sat her primary leaving exams and wanted to get pregnant to get away from the step-mother's mistreatment. It was her first time to come for ANC and confirm the pregnancy since the headmistress wanted to know the pregnancy test results. Partner is sister's brother-in-law. She is involved in agriculture as she rears pigs and has some crop farms.

IDI Participant three

She is seventeen years, was raped and the child is two years. Took the child to the partner's parents and went back to school. She had some ANC but gave birth at her grandmother's place, a traditional birth attendant. Her father was so abusive, and she gave birth at grandmother's place because the mother did not have the money to take her to the hospital. She stays with a teacher at the school, the father chased her from home because of going to school.

IDI Participant four

Seventeen-year old, stays with parents with a total of eight persons. She has a 10 months old baby and did not want to get pregnant. She had some antenatal, had childbirth from the health facility but had no postnatal care.

IDI Participant five

Seventeen years old with an eleven months pregnancy. She did not want to get pregnant and stays with parents. She is Catholic and had completed primary five. She does some farming. She has had antenatal care.

IDI Participant six

Eighteen-year-old who has had two pregnancies from the same man. The first one is one year, the second one was a premature who died a few days after it was born a premature. She now stays with grandparents; a household of seven people including other grand children who are orphaned. She went to stay with the man when she had the first pregnancy, after birth, she got pregnant after two months and the man became abusive, she went back home.

IDI Participant seven

Eighteen-year-old who got pregnant at 17 years and has an eight months old baby. She did not want to get pregnant. She went for ANC two times, first time at four months. She delivered at a TBAs home because of sudden pre-birth pains.

IDI Participant eight

Seventeen-year-old who has a two months old baby. She stays with parents & a sister and did not want to get pregnant. She had three ANC visits and delivered from a health facility. She has some secondary education and stays with parents and one sister.

IDI Participant nine

Nineteen years old and has a one-year old girl child. She stays with her grandmother and wanted to get pregnant. She had two antenatal visits, the first at six months. She gave birth in a health facility by caesarean section. She has some secondary education

IDI Participant ten

A sixteen-years old who got pregnant at fourteen years and has a one-year old baby. She stays with her parents and did not want to get pregnant. She went for ANC three times; the first ANC was at six months. She ran away from her abusive father into hiding at her Aunt's home where the health centres were a long distance, and she had no money for

transport. She had ANC when she came back home and delivered from the health centre. She got pregnant while still in school but dropped out after the pregnancy.

IDI Participant eleven

Nineteen years old, she is pregnant for eight months and stays with parents. She has gone for ANC three times so far.

IDI Participant twelve

Seventeen-year-old who is seven months pregnant. She was in senior two and stays with parents. She was not prepared to get pregnant, “things just went wrong”. Went for ANC in private clinics several times but went accessed ANC once from the government health centre where she hopes to give birth from. She was in secondary school at the time of the pregnancy.

IDI Participant thirteen

Nineteen-year-old who had the first child at seventeen years who is two years. The second child is one week. She stays with the parent and wasn't ready to have the child. She had three ANC visits, the first at three months and gave birth at health centre.

IDI Participant fourteen

Seventeen-year-old who gave birth at sixteen years, but child passed on at nine months. She lives with mother and siblings; her father stays far. She was in primary five and was not ready for the pregnancy. She refused to go back to school because she saw herself as an adult. She had ANC five times and the first ANC was at five months. She also gave birth from the health facility.