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To study the Relevance of the Involvement of a Woman's Partner to the Development of Postpartum Depression in Hong Kong

Being a Thesis submitted for the Degree of

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Summary of Thesis submitted for the Doctor of Philosophy Degree

by

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on

The Relevance of the Involvement of a Woman's Partner to the Development of Postpartum Depression in Hong Kong

Recent research found that 15 per cent of mothers-to-be in Hong Kong suffer from serious antenatal depression and 10 per cent of mothers have serious postnatal depression (Lee, 2001). A comprehensive literature review identified a specific research question. This thesis has, therefore, examined the relevance of the involvement of a woman's partner to the development of postpartum depression in Hong Kong, and its implication on the direction of local health care education on this mood disorder. Two hundred and ninety-eight women were prospectively studied from antenatal visit at third trimester to three months postpartum. The participants' levels of depressive symptomatology and the levels of paternal support received were monitored by using the Edinburgh Postnatal Depression Scale (EPDS), and the Paternal Support Questionnaires (PSQ) at the same time points.

The study found that decreased paternal support during pregnancy and following delivery was significantly correlated with an increased risk of postpartum depression in women in Hong Kong. The timing, type and duration of paternal support available are relevant. In addition, there is a minimum level of paternal support necessary to minimize postpartum depression.

Postpartum depression is a potential health and social problem for women and their families in Hong Kong. Apart from the present maternity leave for women,

the local government and employers may need to consider also providing paternity leave to men, so that they would participate more in perinatal education programs organized by the local Health Authority, and be able to provide practical/instrumental support to their partners during perinatal period. For the benefit of the local community strategic planning in education on postpartum depression, and postnatal care for both husbands and wives by health care education providers is recommended.

CONTENTS

MY BACKGROUND

I am a registered pharmacist, graduated from the University of Manchester, then further equipped myself with an MBA from the University of Warwick, and have worked in marketing & sales management in health care industry for eighteen years. Since mid 2001, I have been employed as the Assistant Director of The School of Continuing Studies, The Chinese University of Hong Kong, with major responsibilities in the management of education program development, in particular, the health care education for adults. I enrolled at The University of Hull in the PhD program in December 1998 when I was working in the marketing and sales of infant milk formula. In this industry I could meet a lot of pregnant women, provide them with education programs on antenatal and postnatal care, as well as infant and child developments. Also I was in good working relationship with obstetricians and pediatricians in both government and private sectors in Hong Kong.

ACKNOWLEDGMENTS AND DECLARATION

This research report depended on the contribution of many individuals. I wish to express my heartfelt gratefulness to my study supervisor, Professor Stephen Killick of The University of Hull, who gave me on going guidance and advice, and provided me with constructive criticism throughout the project. Without his continuous support and encouragement, this thesis would not have been possible. I am deeply appreciative of the Postpartum Depression (PPD) Team of Princess Margaret Hospital of Hong Kong who is running the PPD Screening Program in the hospital. In addition to the Ethics Committee of Princess Margaret Hospital who approved the research protocol and granted permission for the research work to take place in the antenatal and postnatal units in the hospital, the following individuals deserve special mention.

Dr. H S Wong, Consultant of the Obstetrics and Gynaecology Department of Princess Margaret Hospital, has contributed tremendous help in channeling the research proposal to the hospital's Ethics Committee as well as the Research Subcommittee of Department of Obstetrics and Gynaecology to gain their endorsement on the study.

Ms C M Y Mak, the chief coordinator of the PPD team in the hospital, was offering on-going support and referral of antenatal patients to the study, and acted as a chief contact point between myself and other members of the PPD team.

I also extend my warmest thanks to some local health care professionals who have been providing me with insights on current activities of PPD Screening in other regional hospitals in Hong Kong. They are Professor D. Lee of The Prince of Wales Hospital, Dr. P Chiu of Tuen Mun Hospital, and Ms S Chow of Yang Memorial Methodist Social Service Centre. Besides, Dr. C B Chow, Consultant of Paediatric Department of Princess Margaret Hospital, has given me plenty of friendly advice without which the study project would not be processed with smoothness and efficiency as it has enjoyed. Finally, I wish to express my indebtedness to my family, in particular my mother and my husband, who provided me with on going support and encouragement in my career and study.

I declare that the concept of the study project is mine, and its originality can be demonstrated by the fact that no similar study has been undertaken in the health care environment in Hong Kong. The study was conducted in the Princess Margaret Hospital in Kwai Chung, Hong Kong. I was responsible for the overall design and the management of the study, in addition to performing interviews (in person at the hospital or via telephone) and all statistical analyses of the data.

LIST OF ABBREVIATIONS

BDI	Beck Depression Inventory
BDI-II	Beck Depression Inventory – II
CESD	Center for Epidemiological Studies – D Scale
CHEU	Central Health Education Unit
CRPWH	Center of Research and Promotion of Women's Health
DSM-III	Diagnostic and Statistical Manual-III
DSM-IV	Diagnostic and Statistical Manual-IV
EPDS	Edinburgh Postnatal Depression Scale
EPI	Eysenck Personality Interview
GHQ	General Health Questionnaire
HKSAR	Hong Kong Special Administrative Region
O&G	Obstetrics and Gynaecology
PAS	Psychiatric Assessment Schedule
PDPI	Postpartum Depression Predictors Inventory
PDSS	Postpartum Depression Screening Scales
PMH	Princess Margaret Hospital
PPD	Postpartum Depression
PPD Team	Postpartum Depression Team

PSE	Psychiatric State Examination
PSQ	Paternal Support Questionnaire
RDC	Research Diagnostic Criteria
SES	Socioeconomic Status
SPSS	Statistical Package for the Social Sciences

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CHAPTER 1

POSTPARTUM DEPRESSION

1.1 INTRODUCTION

Postpartum depression is a social and health problem for women (Curham, 2000) and their families (Cox & Holden, 1994). It may affect women's thinking and behavior (Herz, 1992), their relationship with their partners (Boath, 1996) and their children (Beck, 1996b). There is more and more evidence that children's social and cognitive development may be adversely affected as a result of their mothers suffering from postpartum depression (Murray, 1992). It is now generally recognized that around 10 per cent to 20 per cent of recently delivered women are afflicted with postpartum depression (Kumar and Robson, 1984; Cooper et al., 1988; Cox et al., 1993; O'Hara & Swain, 1996). Recent studies in Hong Kong (Lee, 1998; Lee, 2001) found that 15 per cent of women suffered serious antenatal depression and 10 per cent of women suffered serious postnatal depression. Hong Kong medical profession has not been giving sufficient attention and resources to perinatal mental health (Lee, 2000), therefore, little is known about the aetiology, natural outcomes, and treatment response of postpartum depression. A recent study in Hong Kong (Yip et al., 1997) shows that suicide is the second leading cause of maternal mortality. We anticipate that a lot of work needs to be done to enhance the psychological health of childbearing women in the local community. One objective of the study is to make recommendations for the future health care education strategy and

planning in reducing the risk of postpartum depression in the Hong Kong community.

The traditional Chinese postpartum period is patterned by a host of rituals, restrictions, and taboos, commonly known as "doing the month" (Pillsbury, 1978; Cheung, 1997). Hong Kong although rooted in the Chinese tradition, with continuing westernization and modernization, it has developed into a cosmopolitan city. As a result, there is an increasing proportion of Hong Kong women and their families giving up the traditional postpartum customs. However, it is necessary and of interest to look at the exclusive benefits that a new Chinese mother enjoys in the first 4-6 weeks after delivery, as well as the traditional customs experienced during this period and the impact of them on postpartum depression in Chinese women.

As an introduction to the context of the research study, the nature of postpartum depression and its consequences are described, highlighting some of the factors that put women at risk. Its prevention and treatment are also discussed, in addition to a review on the global incidence of postpartum depression. Then there is an introduction about Hong Kong, the city where the study is taking place. The description includes the city's environment, its economy and employment, its health care system, the efforts it has made in health care education, and an update on the development in Hong Kong women's health. This chapter briefly reviews the Chinese traditional postpartum customs and their modern adaptation by women in Hong Kong.

It also examines the potential relevance of local economic condition to the development of postpartum depression in the community.

1.2 DEFINITIONS

Women of childbearing age are at high risk of depression in Western countries (Myers et al., 1984; Kessler et al., 1994;). For example, the 6-month period prevalence of depression among women aged 25-44 is approximately 10 per cent (Myers et al., 1984). Since depression is so common among women of childbearing age, it is not surprising that many women are depressed after delivery. Along with their happiness, the mothers of a newborn baby may also bring home unanticipated pressure, all of which, if unprepared, can trigger feelings of hopelessness and despair. There is considerable variation in the severity, duration, and timing of postpartum mental illness (Watson et al., 1984; O'Hara et al., 1994b). These variations will be covered in detail in the latter part of the thesis. Postpartum psychiatric disorders have been divided into three categories, all of which are distinguished in the main by their relative severity. They are: postpartum blues, postpartum depression, and postpartum psychosis,.

Postpartum blues (also referred to as third day blues) refers to a transient, self-limiting emotional upset which occurs during the days immediately following a birth (Miller, 2002). The new mother cries suddenly for no apparent reason during the first ten to twelve days after birth (Curham, 2000). The blues may be physiological rather than pathological (Dalton, 2000). About 40 per cent of live births in the United States in 1992, according to

O'Hara et al. (1994b), were later complicated by postpartum blue. These emotions may include hypomania, excitement and irritability, followed by intense sadness. Every experience is unique, and the treatment the woman receives may influence her future health and emotional well-being (O'Hara et al., 1994b). The blues usually disappear about two weeks after delivery (Curham, 2000).

Postpartum depression is more rigidly defined as 'the first occurrence of psychiatric symptoms severe enough to require medical help occurring after childbirth' (Direct quote from Dalton, 2000, p.3). It may start immediately after delivery, carry on from the blues, when the mother stops breastfeeding, or start any time during the first year after childbirth or up to the return of normal menstruation (Dalton, 2000). In some mothers it is self-limiting and disappears in a few weeks or months. In others, however, it may persist for as long as a year or more (Gelder, 1978; Campbell, 1992). According to Cox's study in 1993, about 10 per cent of newly delivered women may experience emotional instability and turmoil, which may affect every aspect of their life. Green (1998) pointed out that after childbirth, women experience a spectrum of emotions which range from euphoria to misery, yet may not be clinically depressed. She also pointed out that, when assessed for depression, at least as many women are depressed during antenatal period (10 per cent) as after delivery. However, as Cox (1993) showed, the peak time is five weeks after delivery. The signs and symptoms of depression are varied (Herz, 1992).

Postpartum psychosis appears at the other end of the severity continuum, and refers to a severe and relatively rare psychiatric disorder (Herz, 1992), often affective in nature (Miller, 2002). Usually, hospitalization is necessary for women suffering from a postpartum psychosis to protect the life of, and possible harm to the baby, mothers and others (Dalton, 2000). In contrast to a neurosis, the psychosis involves gross distortions of external reality or disorganization of personality. The patient loses insight and becomes unaware that he or she is ill. Puerperal psychosis is a serious and obvious psychiatric disorder for new mothers. O'Hara et al. (1994b) pointed out that about 0.2 per cent of women become psychotic after delivery. It is characterized by bizarre behavior (Herz, 1992). High risk groups are those with a history of puerperal psychosis, psychiatric problems, or with a family history of mental illness (Watson et al., 1984; Campbell et al,. 1992; Murray, 1997b) .

1.3 SYMPTOMS

Table 1 describes three types of symptoms for baby blues, postpartum depression and postpartum psychosis. They are: physical symptoms, mental state, and behavioral reactions.

Table 1 Symptoms for postpartum disorders (Derived from literature in Herz)

Symptoms	Baby Blues	Postpartum Depression	Postpartum Psychosis
Physical Symptoms	Lack of sleep No energy Food craving or loss of appetite Feeling tired even after sleeping	Headaches Numbness Tingling in limbs Chest pains Heart palpitations Hyperventilating	Refusal to eat Inability to stop activity Frantic excessive energy
Mental State	Anxiety and excessive worry Confusion Great concern over physical changes Confusion and nervousness Feeling "I'm not myself; this isn't me" Lack of confidence Sadness Feeling overwhelmed	Despondency or despair Feelings of inadequacy Inability to cope Hopelessness Over concern for baby's health Impaired concentration or memory Loss of normal interests Thoughts of suicide Bizarre or strange thoughts	Extreme confusion Loss of memory Incoherence Bizarre hallucinations
Behavioral Reactions	Crying more than usual Hyperactivity or excitability Over-sensitivity Feelings hurt easily Irritability Lack of feeling for the baby	Extreme behavior Panic attacks Hostile New fears of phobias Hallucinations Nightmares Extreme guilt No feelings for baby Over concern for baby Feeling "out of control" Feeling like "you are going crazy"	Suspiciousness Irrational statements Preoccupation with trivia

1.4 CAUSAL FACTORS

1.4.1 Background factors

Apart from joy and happiness, childbirth brings an additional financial burden to a family. This together with the difficult demands of caring for the baby, may increase the stress after delivery and hence a woman's risk of blues or depression (Brown & Harris, 1978; Seguin, 1999). Educational levels of pregnant women and social demographic factors may have an impact on their capability to adjust to their new role – as mothers, and their confidence in coping with the new stress that lies ahead (O'Hara et al., 1986; Campbell & Cohn, 1991; Gotlib et al., 1991).

1.4.2 Stressful life events

The occurrence of negative life events such as serious illness in a family member and unemployment, may raise the risk of depression during pregnancy and after delivery (O'Hara et al., 1994b). Negative events might be especially potent during this period if they have implications for the woman's ability to properly care for her infant such as severe financial burden or being abandoned by her spouse (Murray, 1997b). Research (Cutrona, 1983; Beck, 1996a) has found that the greater the number of stressful life events experienced during pregnancy and following delivery, the greater the risk of postpartum depression. O'Hara's studies (1983a; 1986) found that subjects who experienced postpartum depression reported more negative life events since the beginning of pregnancy and since delivery than subjects who did not experience postpartum depression. In addition, Marks, Wieck, Checkley & Kumar (1992) found that there may be a higher risk of

relapse after delivery among women with previous histories of affective disorder. Although studies so far, taken as a whole, do suggest an important role for negative life events in postpartum depression (Cutrona, 1983; O'Hara et al., 1983a; O'Hara et al., 1986; Norbeck, 1989), more work is needed to ascertain their impact on the incidence and severity of the mental illness.

1.4.3 Marital relationship

Probably no relationship is more important to a woman during the puerperium than that with her spouse (O'Hara et al., 1994b). In many cases postpartum depressed women report poor marital relationships after delivery (Cox et al., 1982; O'Hara et al., 1983a; O'Hara et al., 1994b). In some occasions when assessing the marital relationship during pregnancy it was discovered that the poor marital relationship preceded the postpartum depression (Kumar & Robson, 1984; O'Hara et al., 1986; Robinson, Olmsted, & Garner, 1989; Gotlib et al., 1991). However, marital distress during pregnancy may not always predict postpartum depression or depression relapse during the puerperium, though it is likely to be a key risk factor.

1.4.4 Parental conflict

There have been few investigators studying the effect of parental conflict on the likelihood of postpartum depression (Murray, 1997b). Kumar and Robson (1984) found that a poor relationship with the woman's own mother (assessed in early pregnancy) predisposed the woman to become depressed postnatally. Gotlib et al. (1991) found that women who were diagnosed as

depressed in the postpartum, reported more negative perceptions of the caring they had received from their own parents. Nevertheless there are conflicting results from studies in this aspect. For example, Watsons et al. (1984) found no association between childhood separation from parents and postpartum depression. Hence more research may be necessary to conclude the findings.

1.4.5 Social support

Spouse, family and friends acting as a confidant, or providing social support such as helping in household tasks and baby care during times of stress may lower the risk of depression (Mueller, 1980). The findings from research linking social support and postpartum depression have been rather consistent (Murray, 1997b). Lack of spousal support has been found to be associated with increased levels of postpartum depression by O'Hara et al. (1983a; 1986). Also, lack of an adequate confidant or lower levels of support from a confidant may be associated with postpartum depression (O'Hara et al., 1983a). Cutrona (1984) reported that the perception of less social support available during pregnancy was associated with increased postpartum depression symptoms. However, Hopkins et al. (1987) did not find an association between social support and the mental disease. Belsky, Lang, & Rovine (1985) and Waldron & Routh (1981) found that marital relationships tended to deteriorate after delivery relative to pregnancy. Its cause was not altogether clear, although it may be that many women were expecting their partners to help in household tasks and baby care, which had not happened in reality. Nonetheless, there is a need to conduct further research in this area to

elucidate the findings. To address this need, the present study was designed to elucidate the relevance of the involvement of a woman's partner to the development of postpartum depression in Hong Kong.

1.4.6 Personal and family psychopathology

Women who have experienced psychiatric disorder before appear to be at risk of postpartum depression (Murray, 1997b). A study (Marks et al., 1992) which included women with a previous history of bipolar disorder, schizo-affective disorder, or major depression found that 22 of the 43 women (51 per cent) experienced a psychotic or non-psychotic depression or mania (and, in a few cases, an anxiety disorder) following delivery. Women with a history of postpartum depression remain at high risk of recurrent episodes with subsequent pregnancies (Miller, 2002). An unpublished study by Dalton in 1979 reported that among 221 women who had a subsequent pregnancy after the previous one had been affected by postpartum depression, as many as two-thirds (68%) of these women experienced another postpartum depression (Dalton, 2000). Wisner (2002) in her review on postpartum depression concluded that in women with previous episodes of postpartum depression, the risk of recurrence is one in four. However, this general link between the history of psychiatric disorder and postpartum depression has not always been found (Kumar & Robson, 1984). Such links may need to be ascertained by future studies.

Family history of psychopathology has also been studied as a predictor of postpartum depression (Murray, 1997b). The findings from some studies

(Watson et al., 1984; Campbell et al., 1992;) have supported an association between family psychopathology and postpartum depression. In addition, O'Hara (1994b) reported that postpartum depressed subjects had a greater proportion of depressed mothers than did the postpartum non-depressed subjects. Nevertheless, a recent meta-analysis (O'Hara & Swain, 1996) suggests that overall there may be little or no association between family history of psychopathology and postpartum depression.

1.4.7 Obstetric factors

O'Hara, Schlechte, Lewis, & Varner (1991) found that among women with a previous history of depressive disorder, delivery by forceps or Caesarean section was associated with the occurrence of postpartum depression. According to Fisher (1997) the mode of delivery may also be the determining factor. ' Those women who had spontaneous vaginal deliveries would be most likely to experience a marked improvement in mood and an elevation in self-esteem (measured by Rosenberg Self-Esteem Questionnaire) across the late pregnancy to early postpartum interval. In contrast, women who had Caesarean deliveries were significantly more likely to experience a deterioration in mood and a diminution in self-esteem. The group who experienced instrumental intervention in vaginal deliveries may fall midway between the other two groups, reporting neither an improvement nor deterioration in mood and self-esteem.' (Direct quote from Fisher, 1997, p. 728). The joint presence of depression during pregnancy and relatively higher levels of obstetric stressors was a significant risk factor for postpartum depression (Murray, 1997b).

Mothers of pre-term infants often become depressed, which may, in turn, have a negative outcome on the health of their child (Herz, 1992). It was found by Locke et al. (1997) that maternal depression was related to the severity of the initial neonatal illness and was significantly related to intra-ventricular hemorrhage and broncho-pulmonary dysplasia.

In a study of 425 women in 1997, Hickey et al. revealed that early discharge (discharged within 72 hours) from hospital puts women at a significantly increased risk of developing postpartum depression. This risk persisted when other socio-demographic, obstetric and psychosocial risk factors were controlled for in statistical analyses. The potential to develop postpartum depression should be considered in all women choosing early discharge from hospital (Hickey et al., 1997). The association found in the study between early discharge and postnatal depression merely suggests causality. A prospective controlled study with women randomly assigned to early- or standard- discharge programs is needed to identify any causal link between early discharge and postnatal depression.

Studies in the 1980s (Kumar & Robson, 1984; Watson et al., 1984) found no evidence that previous abortion or miscarriage increases risk of postpartum depression. A recent study (Miller, 2002) reports that women who lose offspring via miscarriage or stillbirth are at risk of developing major depression. The risk of major depression after miscarriage is especially high for women who are childless. This risk elevates and reaches its highest point within the first six months after pregnancy loss (Janssen, 1996). After

stillbirth, women at especially high risk are those who fail to show any signs of grief during the first 2 weeks, and those women for whom grieving shows no sign of abating 6 to 9 months after the loss (Condon, 1986). An unplanned or unwanted pregnancy is a new predictor of postpartum depression (Najman, 1991; Beck, 2001a).

1.4.8 Biological and physical factors

The psychopharmacology revolution in the 1950's stimulated a renewed interest in the relationship between postpartum depression and hormonal changes. Many hypotheses accounting for the biological basis of postpartum blues and depression have been tested in a large number of studies in the past 20 years (Dalton, 1980; Harris et al., 1989; O'Hara et al., 1991; Harris et al., 1992). According to O'Hara et al. (1994b), although hormonal research has identified potential links with depression, and hormonal factors have been thought to play an important etiological role in postpartum depression, there may be problems with much of the research. 'For example, various diurnal hormonal changes occur in late pregnancy, making research difficult. Another difficulty with this research is that the primary focus has been on psychotic reactions, and as a result of recruiting psychotic patients, the sample sizes have been small. Hormonal studies often have not been carried out on the higher incidences of the 'blues' or moderate depression disorders' (Direct quote from Herz, 1992, p.9).

Evidence regarding the role of progesterone, estrogen, prolactin, cortisol, oxytocin, thyroxin, and vasopressin in postpartum depression remains

contradictory (Hendrick et al., 1998). A study by Harris et al in 1996 showed no support for a direct association of progesterone with postnatal mood at 6 weeks postpartum. According to Hendrick et al (1998) studies so far do not consistently support any single biological etiology for postpartum depression, and future research on the biological factors that may underlie postpartum mood disorders should attempt to control for psychosocial variables, which may confound the data. Therefore, only additional research will clarify any biological links to the origin of postpartum depression.

Women who gain excessive weight during pregnancy may wish to return to their pre-pregnancy weight as quickly as possible. Drastic dieting may cause the onset of postpartum depression (Dalton, 2000).

'Psychosocial consequences of breastfeeding could explain the association with low mood' (Direct quote from Cox & Holden, 1994, p.67). Breast-feeding mothers have little chance of time off from their baby, and they may find it difficult to resume social life. Therefore, breast-feeding mothers should be encouraged to seek help with routine household tasks, and to care for themselves as well as the infant. Family, friends and especially partners may all need to be educated into the need to provide extra help. Another possible connection between breast-feeding and postpartum depression is weaning and the hormonal changes it involves (Curham, 2000). As soon as a mother stops breast-feeding, the level of the hormone prolactin starts to drop (Curham, 2000). Harris et al. (1989) reported that lower levels of prolactin were associated with higher levels of depression at 8 weeks postpartum.

However, O'Hara, Schlechte, Lewis & Varner (1991) found no association between prolactin levels during pregnancy and after delivery and postpartum depression. Inconclusive findings with respect to prolactin could be due to methodological problems (O'Hara et al., 1994b) because it is a difficult hormone to measure well in the puerperium (Murray, 1997b).

1.4.9 Summary of causal factors

None of the potential social and psychological causal factors in postpartum depression have been supported unambiguously in the literature (O'Hara et al., 1994b). The discussion above suggests that there may be a more complex causal pattern or chain involved in the etiology of postpartum depression than simply biological and/or obstetric variables can explain (Herz, 1992). There is good evidence that a woman's psychological adjustment before and during pregnancy is associated with the development of postpartum depression (O'Hara et al., 1994b). Women who experience high levels of stress during pregnancy and after delivery, and women who lack a supportive spouse, appear to be particularly vulnerable to developing postpartum depression (Norbeck, 1989). The present study on "The relevance of the involvement of a woman's partner to the development of postpartum depression in Hong Kong" is going to investigate this aspect further in the population of Chinese women.

1.5 PREVENTION AND TREATMENT

Relatively few specific treatments for postpartum mood disorders have been developed and evaluated (O'Hara et al., 1994b). Antidepressant medication

is the main treatment for moderate to severe postpartum depression (Miller, 2002). Estrogen therapy has been found to be significantly more effective than placebo for treating postpartum depression (Gregoire, 1996) and psychosis (Ahokas, 2000). Cognitive-behavioral and interpersonal psychotherapy have demonstrated efficacy for treating postpartum depression (Stuart, 1995a; Stuart, 1995b). Couples intervention can improve the mental health of both the patient and the partner (Misri, 2000). For women whose depression has interfered with attachment to the infant, parenting coaching can improve dyadic interactions (Onozawa, 2001). Self-help networks, such as "Postpartum Support International" and "Depression After Delivery" can provide education and support groups (Miller, 2002). Women with severe depression, suicidal ideation, or psychosis should be referred for psychiatric care (Miller, 2002). Whitten et al. (1996) suggested that women and their families need to be made more aware of the signs and symptoms of postpartum depression and that counseling, rather than drug therapy, is effective in improving mood. Antenatal education of couples on the emotional upheavel after birth and the recognition of signs of depression, are valuable in the detection and subsequent treatment of women with postpartum depression (Cox & Holden, 1994; Nolan, 1997).

1.5.1 Screening

The symptoms of postpartum depression may appear anywhere from three days to one week after delivery (Herz, 1992). The average length of hospital stays recently has been dramatically reduced to as brief a period as twenty-four hours following uncomplicated deliveries due to early hospital

discharge policy in the US and in Hong Kong. As a result, health care professionals in hospitals are not in an ideal situation to identify the start of postpartum depression. Therefore, it is now recommended by primary health care professionals that the four-to-six-week postpartum visit is the ideal time to assess women for depression; and the first well baby appointment to be an opportunity for assessment as well. In countries such as United Kingdom, the United States and some Asian countries, most health care providers are educated on postpartum illness. They do discuss postpartum illness with prospective parents, but may not be using formal questionnaires or depression scales.

The treatment of postpartum depression is believed by primary health care workers to be greatly enhanced by prevention (Miller, 2002). Since there are multiple causal factors to postpartum depression, reducing any of the contributing factors may lower the risk of developing anxiety and depression after delivery (O'Hara et al., 1994b). Research findings (Rees, 1971; Watson, 1984; Green, 1998) have suggested that rates of depression during pregnancy are similar to those developed and diagnosed after pregnancy. Furthermore, prenatal depression has been found to be a predictor of postpartum depression (Beck, 2001a). There are a number of ways the rate of postpartum depression can be reduced: by the early intervention of parenting education and support (Holden, 1989; Brugha, 2000); by community resource referrals to self-help networks (Miller, 2002); by psychotherapy of an individual, family, or group, and reassurance (Stuart, 1995a). When maternal anxiety and depression are reduced, newborns are also protected, because when a

woman with severe postpartum depression becomes suicidal, she may also consider killing her infant and young children, not usually out of anger but stemming from a desire not to abandon her children (Miller, 2002).

Therefore, early identification of women at high risk for postpartum depression is crucial (Miller, 2002). Anxious new mothers, mothers who have a history of past depressions, mothers who are having marital or family problems or who have experienced other stressful life events should be evaluated and be given more attention. For example a periodic completion of the EPDS or brief assessments conducted by obstetrics staff may be sufficient to detect the early stages of postpartum depression (O'Hara et al., 1994b). Also, as recommended by Cox & Holden (1994), action has to be taken to educate women in antenatal and childbirth classes about the real risk factors and early symptoms linked with postpartum depression. It is important that these women are fully aware of the resources available to help them cope with such an occurrence. These measures can facilitate the ability of women at high risk for postpartum depression to access appropriate preventive and early mental health care interventions (Okano, 1998).

Routine screening of new mothers for postpartum depression is imperative (Beck, 2001b). Widely used screening tools are: Edinburgh Postnatal Depression Scale, EPDS (Cox 1987), Beck Depression Inventory-II, BDI-II (Beck, 2001b), Postpartum Depression Screening Scale, PDSS (Beck & Garble, 2000). The EPDS is 10-item self-report scale. When using the EPDS, Cox (1993) recommends a cut-off score of 12/13 for major postpartum

depression and a score of 9 or more for screening for major or minor depression. The BDI-II is composed of 21 symptoms. When using the BDI-II, Beck (Beck & Garble, 2000) recommends a cut-off score of 20 for major postpartum depression and a score of 14 for screening for major or minor depression. PDSS is a 35-item Likert response scale. The recommended cut-off scores for major and minor postpartum depression when using PDSS are 80 and 60 respectively (Beck & Garble, 2001c). The validity and reliability of these screening tools will be reviewed in Chapter 2.

1.5.2 Preventive studies

A study conducted by Halonen and Passman (1985) on 48 first-time mothers-to-be involved a series of group sessions that helped the women (and sometimes their partners) prepare for postpartum responsibilities. These preventive interventions included both practical (for example, advice regarding the necessity of getting help during the postpartum period and identifying a pediatrician prior to delivery) and therapeutic activities (for example, learning to relax or simply discussing common concerns in a group setting). The BDI and other measures, such as frequency of crying and feelings of elation, were assessed at various time intervals before and after childbirth. Overall, women receiving each of these interventions had better postpartum emotional adjustment than did women receiving a control intervention.

In a study in South Africa, Wolman, Chalmers, Hofmeyr, and Nikodem (1993) evaluated the efficacy of providing companionship during labor to a

group of women (the sample size was 189) who had no companions of their own. The authors reasoned that labor was a time when women were especially vulnerable to losing confidence in their competence as mothers, and that a feeling of incompetence as a mother was one of the factors causing postpartum depression. It was hypothesized that the provision of support during labor would increase women's confidence in their competence and to reduce the likelihood of depression and anxiety following birth. Postpartum depression scores at 6 weeks on the Pitt Depression Inventory were reported. Categorization of scores on the Pitt scale (representing low, moderate, and high depression ratings) was performed in the study only as a research technique to differentiate those women with higher or lower depression ratings at the time of assessments (Wolman et al., 1993). This rather brief intervention during labor resulted in significantly greater levels of confidence and significantly lower levels of depressive and anxious symptomatology in the treated group relative to the untreated group.

A controlled study (Holden, Sagovsky, & Cox, 1989) on the effects of a psychological intervention for postpartum depression involved brief treatment by health visitors over a period of 8 weeks. Depression remitted in a significantly greater proportion of the women exposed to health visitor intervention, (69 per cent, 18/26) than in the women who received no treatment, (38 per cent, 9/24). Further, in an open clinical trial, Stuart & O'Hara (1995a; 1995b) reported success with interpersonal psychotherapy for postpartum depression. The mean Beck Depression Inventory score of patients improved from a score of 27.7 at the beginning to a score of 5.4 at

the end of the study; likewise the mean Hamilton Rating Scale for Depression score of patients improved from a score of 18.2 to a score of 5.2. These changes were highly significant although none of the patients met criteria for major depressive episode at the end of treatment. In a Canadian study (Fleming, Klein, & Corter, 1992), postpartum depressed women (based on self-report) received eight group sessions of social support group therapy or no treatment. There were no treatment effects with respect to depressive symptomatology, however, there was some evidence that the social support groups had a positive effect on mother-infant interaction, particularly among the depressed mothers.

1.5.3 Postpartum self-help

It is likely that mutual self-help is one realistic social answer (Miller, 2002), although only a partial one (Comport, 1990). Mutual self-help are volunteer organizations that make their own policy, especially regarding the kind of help offered. Members control the resources and the help offered is based on veteran member's own experiences in solving particular problems. The organizational structure is governed by consensus, and the group size is small and intimate. Basically, mutual support groups function to provide: information on how to cope, material help (such as brochures, books and video tapes) if necessary, and emotional and physical support and concern. This support has special meaning because it comes from mothers who have had similar experiences. As new mothers realize that they share a common series of concerns and problems, they discover that what seemed unusual is common. Once they realize this, they no longer feel alone with their

problems. A variant form of support group has more recently evolved. These include: Association for Post-Natal Illness; Sheffield Post-Natal Depression Support Group; Depressives Associated; and Pacific Post-Partum Support Society. This new form of support group is to be organized by trained professionals.

1.5.4 Psychopharmacologic treatment

Few controlled pharmacotherapy trials for postpartum depressed have been carried out (O'Hara et al., 1994b). One British study evaluated the effects of transdermal estrogen in a double-blind, randomized, placebo-controlled study consisting of 61 women with major depression (Gregoire et al., 1996). On pretreatment assessments the women in both groups were severely depressed (mean EPDS score 21.8 active group, 21.3 placebo group). During the first month of therapy the women receiving oestrogen improved rapidly, and to a significantly greater extent than controls (mean EPDS scores 13.3 versus 16.5). Patients receiving the placebo also improved over time but, on average, their scores did not fall below the screening threshold for major depression for at least 4 months. The results have suggested that transdermal oestrogen is an effective treatment for postnatal depression.

Too little research has been conducted on treatment to draw conclusions with any degree of confidence regarding the efficacy of various treatments of postpartum depression (Wisner, 2002). Conventional treatments for depression such as antidepressants appear to be effective for women experiencing postpartum depression (Miller, 2002). Since there are concerns

about the effects of antidepressants in breast milk (Murray, 1997b), it is unlikely that childbearing women to be included in general trials of antidepressants. Although treatable, many women suffering from postpartum depression do not recognize that they have the illness (Herz, 1992). A study of 78 postnatal depressed women (Whitton et al., 1996) showed that over 90 per cent realized something was wrong, but less than 20 per cent reported their symptoms to a health care provider. Of this sample, only one-third believed they had postpartum depression. It is estimated that a large proportion of the individuals with the disorder are either being undiagnosed, misdiagnosed, or seek no medical assistance (Lee, 2000).

1.6 GLOBAL INCIDENCE

1.6.1 Incidence in Great Britain and North America

A number of studies conducted in Great Britain and North America in the 1980s suggest that the prevalence of postpartum depression, defined on the basis of clear diagnostic criteria, was between 8 per cent and 15 per cent (Murray, 1997b). For example, three studies conducted in Great Britain obtained prevalence rates of postpartum depression ranging between 12 per cent and 15 per cent (Cox, Connor, & Kendell, 1982; Kumar & Robson, 1984; Watson et al., 1984). The first study of postpartum depression to include a comparison group was conducted in Oxford, England (Cooper, Campbell, Day, Kenerley, & Bond, 1988). The estimated point prevalence rate of depression at 3 months postpartum was 8.7 per cent, not significantly different from the 9.9 per cent point prevalence rate obtained from an epidemiologically derived community sample of childbearing-age women

from Edinburgh. Similar studies carried out in North America yielded a somewhat lower prevalence rate of 8 per cent to12 per cent (Cutrona, 1983; O'Hara, Neunaber, & Zekoski, 1983b). Although there were some questions as to whether these rates were higher than those observed in the wider community, there did appear to be an increase in rates of depression after delivery relative to pregnancy. For example, women are between 20 and 30 times more likely to be hospitalized for a psychotic episode in the first 30 days after delivery than at other times before or after childbirth (Kendell, Chalmers, & Platz, 1987). The increased risk of "blues-like" symptoms is about fourfold for recently delivered women relative to non-childbearing controls (O'Hara et al., 1990).

1.6.2 Incidence among women in Asia

Epidemiological studies in the 1980s (Pillsbury, 1978; Eisenbruch, 1983; Kok, 1994; Kit, 1997) have suggested that depression is not common in the Chinese population and there is no postpartum depression among Chinese women. However, subsequent small-scale studies of postpartum depression in China have findings which are contradictory and inconsistent (Lee, 2001).

Guo and her colleagues (1993) studied 425 women in Beijing at 6 to 12 months after childbirth and reported a positive rate of postpartum depression of 18 per cent using a translated EPDS questionnaire. They found that women who had past histories of mood disorder, lacked social support, experienced poor marital relationships and poor living conditions, had significantly higher rates of postpartum depression. The study did not state

the threshold EPDS score for postpartum depression. Pen and his colleagues (1994) in Beijing studied 167 postpartum women and reported a mean EPDS score of 7.6 (11 per cent of the participants scored 13 and above). Kok (1994) studied 200 women in Singapore and reported rates of postpartum depression of 0 per cent, 0.5 per cent and 0.5 per cent respectively at 5 days, 3 months and 6 months after childbirth, but he did not specify the ethnic composition of his study population. Cheng and his colleagues (1994) studied 150 mothers in Hong Kong in a postnatal follow-up clinic and reported 18 per cent of women had an EPDS score of 12 or above. Zheng and his colleagues (1996) studied 166 postpartum women in Shantou, a rural area in Southern China, and reported no EPDS score above the 12/13 cut-off, but found that women who delivered by caesarean section had significantly higher EPDS scores. Sheng and her colleagues (1996) studied 90 women who delivered in Nanjing in China, fifteen of whom were diagnosed with postpartum depression (EPDS>=13). Lee and her colleagues (1997) recruited 168 women in Xian in China, and found that 5 per cent of participants scored above the 15/16 cut-off of the CES-D. Kit and his colleagues (1997) studied 145 women at 6 weeks postpartum in Negeri Sembilan, Malaysia, and found that the overall incidence rate of postpartum depression was 4 per cent. Among the study population, none of the Chinese participants had postpartum depression, while the rates of depression among Malays and Indians were 8 per cent and 3 per cent respectively. Lee (2001) conducted a psychiatric epidemiological study on a representative sample of 959 postpartum Chinese women in Hong Kong. The participants were first stratified by means of the 12-item General Health Questionnaire, followed

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by an assessment with the Structured Clinical Interview for DSM-III-R. His 1-month prevalence rates for major and minor depression were 5.5 per cent and 4.7 per cent respectively. At 3 months, the corresponding prevalence rates were 6.1 per cent and 5.1 per cent. Together, 13.5 per cent of the participants suffered from one or more forms of psychiatric disorder in the first 3 months postpartum. The above findings indicate that after two decades of profound socio-economic transformation in Asia, depression may no longer be uncommon in the contemporary Chinese population (Lee, 2001). However, apart from the study conducted in Hong Kong by Lee (2001), there were several common limitations to the other studies. Postpartum depression was defined in these studies as an elevated score of the EPDS, which was originally designed to screen for women who were likely to suffer from postpartum depression. The scale had never intended to be applied as a diagnostic instrument to establish a psychiatric diagnosis. In addition, the translation of the EPDS had not been subjected to cross-cultural validation. It was uncertain if the researchers had taken precaution to ensure that the translated version was culturally informed and had good conceptual and linguistic equivalence. The validity of the Chinese version of EPDS was only established in 1998 (Lee, 1998).

1.6.3 Incidence in the United States

Using an acquaintance control group in Iowa in the United States, O'Hara et al. (1990) obtained a 3-month period prevalence of major and minor depression of 10.4 per cent for childbearing women and 7.7 per cent for non-childbearing controls. These differences were not statistically significant, as

were the results from two other studies (Troutman and Cutrona, 1990; and Cox et al., 1993) which, when examined together suggest that there is no increase in the risk of non-psychotic depression associated with childbearing. However, depressions associated with childbearing may have characteristics that differ from depression which emerge at other times with respect to timing of onset, severity, duration, and consequences.

1.7 CONSEQUENCES

The major consequence to a woman who has had a postpartum depression is risk of future postpartum depression (Miller, 2002). The research in this area has been relatively consistent (O'Hara et al. 1994b). Women who have experienced a postpartum depression, relative to women who have not experienced a postpartum depression, are at increased risk of future depressions over a 5-year period (Ghodsian, Zajicek, & Wolkind, 1984). Philipps and O'Hara (1991) reported that 80 per cent (8/10) of postpartum depressed women experienced a subsequent major or minor depression during a 4.5 year follow-up compared to 42 per cent (25/60) of postpartum non-depressed women. As this study only had a small sample size of 70 women and an attrition rate of 70 per cent, future follow-up studies ought to include larger samples of depressed women (Philips, 1991). Comparable figures from Cooper and Murray (1995) were a 60 per cent (33/55) recurrence rate for postpartum depressed and 35 per cent (14/40) rate for postpartum non-depressed women. The findings of Cooper and Murray suggest the possibility that some depressions may be specifically caused by some biological or psychosocial elements of childbearing. These depressions

may be somewhat less severe but are more likely to reoccur during times of childbearing than postpartum depressions that reflect an ongoing vulnerability to depression (Cooper and Murray, 1995). This finding is important because it may provide some clues as to why a distinctive depression develops in response to childbirth for some women. However, more studies are required in order to enhance the confidence of these findings. Whether or not there is a distinctive postpartum depression, women who are depressed following delivery are at high risk of future depression (Miller, 2002). Furthermore these experiences in depression may have serious implications for the woman's ability to perform her social roles effectively: as a mother, spouse, and worker (Curham, 2000).

Women experiencing postpartum depression may sub-consciously pass on extra pressure or stress to their spouse. Becoming a father can have a huge impact on a man (Nolan, 1994) and yet little is known about the fathers' feelings (Taylor, 1992), with the result that fathers' needs have not been adequately addressed (Nolan, 1994). Furthermore, fathers have been largely neglected in the study of families and child development (Costigan, 2001). Fathers tend to keep their fears and concerns firmly to themselves (Curham, 2000). More than 10 per cent of fathers suffer from psychiatric morbidity in the postnatal period (Ballard, 1996). The difficult demands of childcare, together with additional financial burdens and increased restrictions on lifestyle (Brown & Harris, 1978; Seguin, 1999), all occur at a time when there is less emotional support given to the fathers by their partners. Depression amongst fathers is associated with having depressed partners

(Ballard, 1996), therefore it occurs in highly vulnerable families and may have an important impact on the emotional development of the infant (Murray, 1997b).

Sufferers of postnatal depression tend to worry about the damage that may be causing to their child in the first few months of their development (Curham, 2000). Mothers feel guilty about any short-term and long-term adverse effects upon the baby. Studies (Kumar & Robson, 1984; Ghodsian et al., 1984; Philips & O'Hara 1991) have found that children of postpartum depressed women are at risk of future behavioral and/or cognitive problems. Although the postpartum depressions may remit within a few months, residual deficits may continue (Philips & O'Hara, 1991). A review of research by Cooper and Murray (1998) revealed that children of mothers with postnatal illness performed less well at age 18 months than those children whose mothers were not ill. The effects of poor maternal/infant interactions were shown to persist to school age, with boys particularly showing poor performance and cited as being behaviorally disturbed (Murray, 1997b).

1.7.1 The short-term effects of postnatal depression upon the baby may be:

a) Withdrawal. Some babies will become withdrawn and will stop expecting or demanding attention from their mothers (Cohn, 1986; Stein, 1991).

b) Hyperactivity. Other babies will go to the opposite extreme, trying harder and harder to get attention, crying incessantly and displaying anger at being neglected (Cutrona & Troutman, 1986; Field et al., 1988).

1.7.2 The long-term effects of postnatal depression upon the baby may be:

a) Problematic relationship. Long after the postnatal depression has gone its legacy can live on in a difficult and insecure relationship between the mother and child (Murray, 1992; Teti, 1995).

b) Behavior. There is an increased risk of children going on to suffer from behavioral problems later in life (Field et al., 1988; Murray, 1992).

c) Adverse effect on cognitive development. The latest study on the long-term effects of postnatal depression upon the child has highlighted a worrying link to adverse effect on cognitive development (Murray, 1992). This link is strongest in cases where the mother suffered from depression in the first three months after the birth and appears to affect boys far more than girls (Murray, 1992; Murray, 1997b).

It is evident from the findings of these studies (Field et al., 1988; Murray. 1992; Teti, 1995; Murray, 1996) that postpartum depression poses a risk for the mother-infant relationship and infant developmental outcome (Murray, 1997a; Murray, 1997b). The sooner the woman's depression is diagnosed and treated, the better the chances of no long-term effects occurring (Curham, 2000). A lot is also dependent on the child's surroundings, the role that other members of the family play and the baby's own character (Murray, 1996).

1.8 POSTPARTUM DEPRESSION IN HONG KONG

1.8.1 Environment of Hong Kong (Hong Kong 2000)

Hong Kong's 1,098 square kilometers of land contain 6.8 million people and one of the world's largest trading economies. According to Year 2000

statistics, the birth rate was estimated at eight per 1,000; the death rate was at five per 1,000. The median age of the population was 37 in year 2000. Hong Kong is one of the world's most densely populated places. The concentration of population and economic activity in such a small area leads to intense pressures on the environment. This is compounded by the effects, particularly on air pollution, from development across the Pearl River Delta region.

1.8.2 Economy and employment in Hong Kong (Hong Kong 2000)

Backed by its strategic location at the doorway to the Mainland and on the international time zone that bridges the time gap between Asia and Europe, the Hong Kong Special Administrative Region (HKSAR) has been serving as a global center for trade, finance, business and communications. Under the 'one country, two systems' principle, the HKSAR continues to adopt social, economic and political systems distinct from those in the Mainland, following the reunification in July 1997. The Government recognizes the need to promote good employer-employee relations, enhance the rights and benefits of employees in a way that is commensurate with Hong Kong's socio-economic development, and protect the safety and health of employees at work. Unemployment has dropped from a peak of 6.3 per cent in 1999, to 5.7 per cent at the beginning of 2000, to 4.4 per cent at the end of the year, and has rebounded to break through the 5 per cent barrier again in late 2001.

1.8.3 Health care system in Hong Kong (Hong Kong 2000)

The public health care sector provides a range of services and facilities to meet the health care needs of the community. There are 10,130 doctors registered with the Medical Council of Hong Kong and 40,388 nurses registered with the Nursing Council of Hong Kong. With 35,100 hospital beds in Hong Kong, they represent 5.1 beds per thousand populations. (See Table 2)

Table 2 Hospital beds and registered medical personnel in Hong Kong.

	Per 1,000 population		
	1995	1999	2000
Hospital beds	4.7	5.1	5.1
Doctors*	1.3	1.5	1.5
Dentist*	0.3	0.3	0.3
Pharmacist*	0.2	0.2	0.2
Nurses	5.6	5.8	5.9

Notes: Figures are as at end of the year.

* Figures refer to doctors/dentists with full registration on the local and overseas lists.

Hong Kong's health indices compare favorably with those of most developed countries. In 2000, the infant mortality rate was 2.9 per thousand live births and the average life expectancy at birth was 77.2 years for males and 82.4 for females. Health problems in Hong Kong are mostly associated with lifestyle-related chronic degenerative diseases. The four leading causes of death in 2000 were cancers (32.9 per cent), heart disease (15.6 per cent), cerebrovascular disease (10.5 per cent) and pneumonia (8.9 per cent). These diseases affect mainly elderly people and will continue to dominate the

mortality statistics as the population ages. (See Tables 3 to 5) (Census and Statistics Department of Hong Kong)

Table 3 Infant mortality rate in Hong Kong.

	Per 1,000 registered live births		
	1995	1999	2000
Infant mortality rate	4.4	3.2	2.9

Notes: Figures are as at end of the year.

Table 4 Expectation of life at birth by sex in Hong Kong.

	Years		
Sex	1995	1999	2000
Male	76.0	77.2	77.2
Female	81.5	82.4	82.4

Notes: Figures are as at end of the year.

Table 5 Death rate by leading cause of death in Hong Kong.

	Per 100,000 population		
Cause	1995	1999	2000
Cancers	157.2	163.3	164.8
Heart diseases	79.4	77.7	78.4
Cerebrovascular diseases	53.8	51.9	52.4
Pneumonia	53.1	44.3	44.7
Injury and poisoning	25.8	30.5	30.8

Notes: Figures are as at end of the year.

Family Health The Family Health Service provides a comprehensive range of promotive and preventive services for babies and young children from birth up to the age of five years and women at age 64 or below. The

service operates through Maternal and Child Health Centers and Woman Health Centers. Physical examination, immunization and developmental monitoring are offered to children while antenatal, postnatal and family planning services are provided for women of child-bearing age at all Maternal and Child Health Centers. Parents are empowered to promote the physical and mental health of their children in the family through health education and counseling. About 50 per cent and 95 per cent respectively of expectant mothers and newborns attend Maternal and Child Health Centers. Health promotion and disease prevention programs are delivered to women at age 64 or below at the Woman Health Centers. The Government-sub-vented Family Planning Association of Hong Kong provides sexual and reproductive health services, education and information. The association also offers training in family life education and sex education, and organizes outreaching activities and publicity campaigns to promote family planning and responsible parenthood.

1.8.4 Health care education in Hong Kong

The Central Health Education Unit (CHEU) advises on and promotes health education within the Government and the community. The Government's Women Health Service Unit offers health promotion and disease prevention programs at its Woman Health Centers for women aged at or below 64. The aim is to promote the health of women and address their health needs at various stages of life. These include health education and counseling activities to enhance the awareness and encourage the practice of a healthy

lifestyle in women, and to educate women on the prevention of important health problems such as osteoporosis and cancer.

Moreover, the Government provides teaching guidelines and support materials to schools in areas such as drug education, sex education, AIDS education and oral hygiene education. In addition, they have been integrated into various subjects in the school curricula.

Apart from health care education to the general public, local health care professional bodies such as The Hong Kong Academy of Medicine is providing continuing medical education for medical practitioners in the various specialties. Likewise, continuing education programs are being offered by respective professional associations to practicing para-medicals, in particular pharmacists and members of the nursing profession.

1.8.5 Women's health in Hong Kong

Women comprise approximately half the population of Hong Kong, and at least 60 per cent of the geriatric population. The average life expectancy at birth is 82.4 years for Hong Kong women. The main causes of mortality in older women in Hong Kong are cancer (of the lung, colon, breast, and liver) and cardiovascular disease (Hospital Authority Statistical Report, 1999). At The Chinese University of Hong Kong, a Center of Research and Promotion of Women's Health (CRPWH) has been set up to coordinate efforts to give more attention to the quality of life of older women. A Resource Center for Women's Health has been jointly established by the CRPWH and the Hong Kong Federation of Women to serve as an informational center for

academics, medical and allied health workers, administrators, students, and the general public. The center provides information on a wide range of topics relating to the health and well-being of women (The Chinese University of Hong Kong Newsletter).

1.8.6 Chinese traditional postpartum customs and their modern adaptation in Hong Kong

Chinese traditional postpartum customs are a constellation of taboos, restrictions, rituals, and dietary proscriptions grounded in Chinese ethno-medical health beliefs. Tradition demarcates the first month as a vulnerable period when the mother and her child necessitate protection and assistance (Lee, 2000). There is a belief that blood is nutritious and very often during delivery the parturient women loses a significant quantity of blood. As such, a postpartum body is regarded as weak, vulnerable and susceptible to further insult, particularly if exposed to food and environments that are metaphysically cold or chilly. The new mother requires tonic to replenish her loss and for recuperation (Pillsbury, 1978).

"Zuoyue" Rituals (Lee, 2000)

Health beliefs that are translated into a series of behavioral restrictions, taboos and dietary proscriptions are summarized as "zuoyue" in Chinese. The term "zuoyue" literally means "sitting the month" or "resting the month", and the term is better known among international researchers as "doing the month". According to "zuoyue" practice, women should not be exposed to wind or cold water during the puerperium. Rest and convalescence are

emphasized, and women should stay in the house, avoid draughts as well as washing and bathing, for a full month. She should also not be taking food that is metaphysically cold, such as fruit and green leaves. To replenish the weakened body, tonics and herbs are recommended and each day a chicken is served using various recipes. In Hong Kong and southern Chinese provinces, pig trotters and eggs are prepared in black vinegar and this is believed to strengthen the body. It is believed that exposure to metaphysical coldness during the puerperium would cause rheumatism, headache and life-long ill health (Pillsbury, 1978; Eisenbruch, 1983; Cheung, 1997).

Apart from the belief of coldness and vulnerability it is also stipulated that the new mother should not eat with her family, should not visit other houses, and should not have intercourse with her husband. Although these restrictions appear to be ridiculous by Western eyes, they are effective means to safeguard the mother from what might be regarded as inappropriate sexual demands from her husband. The ending of the first postnatal month is celebrated by a birthday celebration banquet (munyuejiao) when the new mother is offered gifts and congratulations from her relatives. This marks the end of the vulnerability period and the woman's incorporation into her new status of 'mother'. At the same time the new mother resumes her usual household duties.

"Peiyue" Care (Lee, 2000)

The promotion of a full month of mandated seclusion and convalescence is supported by another postpartum custom called "peiyue", which literally

means "attending" or "accompanying the month". "Peiyue" care requires an elder female family member, usually the mother or mother-in-law, to accompany and to assist the new mother in the first month after childbirth. The "peiyue" relative would help the new mother with her domestic duties and relieve her from the usual obligations of looking after her husband and elder children. Hence, the new mother can focus on her new baby and recuperation. If the new mother is inexperienced with childcare, the "peiyue" relative would be able to support and teach the new mother on childcare matters.

Modern adaptations

With modernization and westernization, traditional postpartum customs are gradually being transformed and modified to match with the demands of modern life style. "Peiyue" and "zuoyue" are no longer practiced with the same intensity as before. According to informed clinical experience, a small proportion of local women have abandoned all postpartum customs, and a larger portion of women are only practicing the traditional customs selectively or unevenly (Lee, 2000).

Examples of "peiyue" adaptations are: the "peiyue" relative may just visit the new mother during the day to help her with household chores, prepare meals and look after other children in the family, instead of staying in the new mother's home day and night. Alternatively, the new mother may stay with her maiden family during her first postnatal month to minimize travelling by her mother. Other options are the new mother may hire a

domestic helper (usually a Philippino maid) to look after the household chores and prepare the tonics for postpartum recuperation. "Zuoyue" practice has also been adapted in many ways. The new mother may wear rubber gloves and use warm water to wash dishes or to do other light housework. She may take hot water baths or add ginger and herbs to the bathing water. She may compromise by wiping her body with wet towels and warm water. However, there is a general belief by the older generation that non-adherence to "zuoyue" practice would cause chronic headache, rheumatism and ill health for rest of the new mother's life. The collective fear of future ill health as well as the needs of contemporary Hong Kong women to enjoy a well-defined period of convalescence after childbirth, may continue to reinforce the practice of postpartum convalescence, mandatory seclusion, dietary proscriptions and familial assistance in contemporary Chinese societies, yet it may be difficult to estimate the extent and pattern the traditional postpartum customs are practiced, and to what degree westernization and modernization have transformed Chinese traditional customs.

Most traditional postpartum customs contain preventive and therapeutic ingredients, like mandated rest and seclusion, which are essential for recuperation from the exhaustion of childbirth and new motherhood. The elder female family members provide assistance in childbearing knowledge and emotional, practical and informational support. Hence, it may be argued that traditional postpartum customs serve to reduce or prevent the experience of negative emotional states in the postpartum period. If certain components of traditional postpartum custom, such as mandated assistance

from family, is found to reduce the incidence of postnatal depression, efforts should be made to retain these traditional customs during the westernization and modernization process of the society. It will also be important to identify realistic ways to enhance the quantity and quality of such customs, by designing programs and services that would have similar protective functions for women who do not have access to these valued customs.

1.8.7 Potential relevance of local economic condition to the development of postpartum depression in Hong Kong

More than one in seven mothers-to-be suffers serious depression during pregnancy (Lee, 2000). The study (Lee, 2001) of 959 mothers-to-be, the first of its kind in Hong Kong, was launched in 1997 and is ongoing. It found that 15 per cent of women suffered serious antenatal depression and 10 per cent serious postnatal depression. The rates are similar to those found in studies undertaken overseas. Babies born to women who experienced depression during pregnancy are 2.2 times more likely to need some form of medical care, according to the study. Depressed women are also twice as likely to have their babies delivered by Caesarean section. Dr. Lee, associate professor in the University's Department of Psychiatry, said depressed women were more likely to have a surgical delivery because the illness made them more susceptible to pain. Some women became depressed because their pregnancies were unplanned, the study found. Previous studies (Najman, 1991; Beck, 2001a) undertaken overseas have identified unplanned or unwanted pregnancy as a predictor of postpartum depression.

The pregnant women or recent mothers' concern over financial matters and the reliability of their mates' employment situation may have an association with depression. Mothers who worry about the finance of their families are more vulnerable to postnatal depression (Brown & Harris, 1978; Seguin, 1999) as money, and how to feed and raise their children, is of prime concern. Unemployment is at a 17-month high of 5.5 per cent (Census and Statistics Department of Hong Kong, 2001) with officials, economists and unionists warning of more redundancies to come. The birth rate in Hong Kong has been on a downward trend from 68,000 in 1995 to about 50,000 in year 2000 (Census and Statistics Department of Hong Kong, 2001). In Hong Kong, maternal mortality is defined as death in the first six weeks of postpartum, whereas in most developed countries the first 12 months after childbirth is used. The importance of psychiatric morbidity in the postpartum period, however, is not captured in the current official statistics, as it only shows the mortality, mostly physical in origin, in the first six weeks of postpartum. The economic slump in Hong Kong has been coincident with a significant increase in postnatal depression cases recorded by Tuen Mun Hospital, a local, key regional hospital in the New Territories (Tuen Mun Hospital, 2001). The number of new cases per month being handled by the hospital's Department of Psychiatry has increased by 40 per cent (Tuen Mun Hospital, 2001). In addition, there are more mothers on the waiting list for treatment of postnatal depression. It was reported that some mothers lost their jobs after maternity leave, while others worried about their husband's job security during times of economic upheaval. Most husbands would probably not risk taking time off work to keep their wives company. However, a local survey

(Baby Magazine, June 1998) has indicated that most women after child birth need the support and attention of their husband as the first priority, with parents' and relatives' support coming second, and then followed by friends and others, such as domestic helpers. The Hong Kong employment law offers maternity protection to female employees. A female employee employed under a continuous contract (a minimum of 4 consecutive weeks with 18 hours in each week) immediately before the commencement of her maternity leave is entitled to paid maternity leave. Paid maternity leave is defined as a continuous period of 10 weeks from the date of commencement of the leave. A pregnant employee may take her maternity leave with flexibility: either to commence her maternity leave from 2 to 4 weeks before the expected date of confinement, or to commence on the date of confinement if it occurs before the scheduled maternity leave. For her own protection, a female employee with a continuous contract should get a medical certificate confirming her pregnancy and serve a notice of pregnancy, stating her intention to take maternity leave to her employer as soon as she has been certified pregnant. The Hong Kong employment law offers no paternity protection to male employees (Labor Department, Hong Kong).

1.9 SUMMARY

This chapter summarizes different categories of postpartum disorder and the clinical symptoms of each of them. There are at least eight factors identified in having an association with the onset of postpartum depression, though more research is needed to study the interactive effects of these factors. Preventive and treatment measures include: the early identification of

symptoms by various screening methods, the enhancement of social support, psychological intervention, postpartum self-help and psychopharmacologic therapy. The incidence rate of postpartum depression overseas is 10 per cent to 15 per cent (Cox, Connor, & Kendell, 1982; Cutrona, 1983; O'Hara, Neunaber, & Zeloski, 1983b; Kumar & Robson, 1984; Watson et al., 1984; Herz, 1992; Whitton et al., 1996)). The latest rate in Hong Kong is found to be 10 per cent (Lee, 2001), which may be potentially increasing in the light of the current economic turmoil. Based on this prevalence estimate, about 6,000 recently delivered women are afflicted by postpartum depression in Hong Kong each year, which certainly deserves increased attention and resources.

The next chapter will be a literature review section on postpartum depression. I will discuss in more detail about its prediction and detection, the adverse effects of postpartum depression on the family, and the impact on the development of postpartum depression relevant to the partner/husband's support. I will also look at the role of a father during pregnancy and childbirth, as well as examining current issues in antenatal and postnatal education and care.

CHAPTER 2

LITERATURE REVIEW ON POSTPARTUM DEPRESSION

The review will focus on the prediction and detection of postpartum depression, antenatal education, postnatal care, role of a father during pregnancy and birth, social support (in particular partners' support), the impact of postpartum depression on the family, and will also discuss the screening scales of postpartum depression. In order that the readers can appreciate the progress and key developments in each section, the literature is summarized in chronological order.

2.1 PREDICTION AND DETECTION OF POSTPARTUM DEPRESSION

There are a total of six published papers reviewed in this section, they are by Neter, Beck, Cooper and Murray, and Matthey respectively; covering the period from 1995-2001.

2.1.1 Neter (1995)

Objectives:

To examine the effects of stress, social support, labor and delivery experiences on postpartum depressed mood in an ethnically diverse sample of low-income women in the United States.

Method:

A sample of 108 women enrolled in the study. They were at least 18 years of age and delivered a live infant at the study hospital. Prenatal and postpartum interviews were conducted and complete data on all study variables was

obtained. Assessments were made on: satisfaction with received support, specific sources of support such as the baby's father and the woman's health care providers, and the health of the infant. The dimensions of stress assessed were: financial strain, life events distress, chronic stress, and state anxiety. Postpartum depressed mood was measured with the Center for Epidemiological Studies Depression scale using the recommended cutoff criterion (a score of 16 or greater) to differentiate depressed from non-depressed individuals.

Results:

It was found that the sample consisted of 67.6 per cent non-depressed and 32.4 per cent depressed women, which suggested that approximately one third of the sample reported fairly high levels of depressed mood in the postpartum period. It was also found that women who experienced higher levels of depressed mood were less satisfied with their social support, experienced more prenatal stress, were less satisfied with their labor experiences, and perceived less involvement on the part of the baby's father following childbirth. In addition, women whose babies had more adverse medical outcomes were more likely to feel depressed in the postpartum period.

Indication and comments:

The results of the analysis indicated that prenatal depressive symptoms accounted for over 20 per cent of the variance in postpartum depression; prenatal social support and stress accounted for 12 per cent and 7 per cent of the variance respectively; while labor and postpartum variables accounted for an additional 4 per cent of the variance in depressed mood. Apart from

spousal support or marital adjustment, additional sources of social support such as kin, friends and health care providers had also been considered in the design of the study. The tools used in the study to measure social support (including fathers' support), stress, postpartum depression, labor and postpartum experiences all have adequate to high internal consistency (α ranged from .63 to .93), thus they may be adapted for use in studies conducted in other countries in future. It is clear that social support is one of the important predictors of postpartum depression identified in the study, and as it is an area where there is an opportunity for improvement with existing resources, it certainly deserves increased attention.

Limitation:

The sample size of the study was relatively small (N=108). The women in the study were from the low-income group and the majority of these women were neither married nor living with the baby's father. Hence, the results of the study may not be generalized beyond the original population. In this study the depressed mood of the women recruited was assessed only on a single occasion 4 to 8 weeks after birth and without further follow-up, therefore it was impossible to examine the issues of recovery and prolonged depression, and the effects of postpartum depression on infant development.

2.1.2 Beck (1996c)

Background and objectives:

The majority of the research conducted on predictors of postpartum depression has been summarized in a qualitative manner. In 1996, Beck conducted a meta-analysis of 44 studies to determine the magnitude of the

relationship between postpartum depression and the following eight predictor variables: prenatal depression, history of previous depression, social support, life stress, child care stress, maternity blues, marital satisfaction, and prenatal anxiety.

Method:

The author obtained samples of studies from online computer searches for the period from 1974 to 1994. Reference lists of previously located studies were checked for additional references. Relevant published and unpublished studies were found at research conferences via informal networking. Abstracts of dissertations, psychological abstracts and sociological abstracts were searched by using the Social Science Citation Indexes. Additional measures were taken to protect the meta-analysis from publication bias. Studies were included only when they met the specified criteria. The effect size indicator chosen for use in this meta-analysis was r, which indicates the strength of the relationship between postpartum depression and each of the predictor variables. The findings were interpreted by using Cohen's conventional operational definitions of small (r = .10), medium (r = .30), and large (r = .50) effect sizes for r.

Results:

From the 44 studies included, the meta-analysis yielded an effect size r that measured the magnitude of the relationship between postpartum depression and each of the predictor variables. The mean r effect size indicator range for each predicator variable is shown in Table 6.

Table 6 Mean r effect size of predictor variables (Derived from Beck)

Predictor Variable	Mean r effect size indicator range
Prenatal depression	0.49 to 0.51
Child care stress	0.48 to 0.49
Life stress	0.36 to 0.40
Social support	0.37 to 0.39
Prenatal anxiety	0.30 to 0.36
Maternity blues	0.35 to 0.37
Marital satisfaction	0.29 to 0.37
History of previous depression	0.27 to 0.29

This is one of the few meta-analyses which gives quantitative summaries of research conducted on predictors of postpartum depression, and it permits the systematic synthesis and integration of results from multiple individual studies that focus on the same research question. Obviously more research is needed in order to understand better the complex interrelationships among the predictors and their direct and indirect impact on the development of postpartum depression.

Implication and comments:

Although there is a significant correlation between the eight predictor variables and postpartum depression, it does not imply that these predictor variables would cause postpartum depression. Addressing or altering some of these predictors may or may not necessarily reduce postpartum depression. However, there is the need to design and test intervention programs that may help to prevent or treat the mental illness. As social support is an area where the degree and quality of effort can be enriched by maximizing existing

resources, it is worthwhile to enhance the provision of social support from various sources, and carry out an evaluation program thereafter.

Strengths:

This meta-analysis was protected from publication bias by adopting rigorous approaches for retrieving studies as sample. Each sample study had gone through quality screening and careful coding procedure. Based on the findings of the meta-analysis, an instrument or a checklist may be designed to detect women at risk of developing postpartum depression.

2.1.3 Cooper and Murray (1997)

According to Cooper (1997), to help the detection of postnatal depression, a simple brief self report measure, the Edinburgh Postnatal Depression Scale, or EPDS, was developed as a screening device by Cox in 1987. It has sound psychometric properties, and in a large community study has been shown (with an 11/12 cut off) to have a specificity of 92.5 per cent, a sensitivity of 88 per cent, and a positive predictive value of 35.1 per cent for major depression (Murray and Carothers, 1990). Cooper commented that the questionnaire is easy to administer, simple to interpret, and could readily be incorporated within the routine services provided to all postpartum women. Women who have high scores are to be given further clinical attention to confirm the presence of depression.

2.1.4 Beck (1998)

Background and objectives:

In 1998 there was an article by Beck which described the Postpartum Depression Predictors Inventory (PDPI), a checklist to identify women at risk for developing postpartum depression.

Method:

The development of the checklist was based on the meta-analysis of the postpartum depression predictors (Beck 1996c; 1996d).

Results and implication:

The author recommends the PDPI to be used during the prenatal and postpartum periods and be administered via an interview with a health care professional. Ideally, this checklist would be completed once each trimester to update the pregnant woman's risk status. The completed checklist yields targeted risk factors for which nursing interventions can be planned to help address each woman's problems.

Limitation:

The PDPI is limited in that it cannot be used as a self-report questionnaire. It has not been tested with psychometric properties. A health care professional is required to administer the checklist via an interview, which is not always practicable in situations where there is a shortage of staff. Since the PDPI was based on the results of a meta-analysis, a continuing review is necessary for its revision to include newly identified significant risk factors.

2.1.5 Beck (2001a)

Background and objectives:

Meta-analyses had been conducted in 1996 to determine the magnitude of the relationship between significant risk factors and postpartum depression

(Beck, 1996c; Beck 1996d; O'Hara & Swain, 1996). Since then, the amount of research on risk factors for postpartum depression has dramatically increased. One objective of this study was to determine the magnitude of the relationship between postpartum depression and each of the following predictor variables: prenatal depression, childcare stress, life stress, social support, prenatal anxiety, self esteem, marital relationship, history of depression, infant temperament, maternity blues, marital status, socioeconomic status (SES), and unplanned/unwanted pregnancy (a total of 13 variables).

Method:

A total of 84 studies were included upon searching online databases for the 10-year period between 1990-2000. In the studies included in this meta-analysis, the Edinburgh Postnatal Depression Scale, the Beck Depression Inventory, and the Center for Epidemiological Studies – D Scale were used to measure depressive symptomatology.

Results:

The meta-analysis revealed 13 significant predictors of postpartum depression. They are categorized in Table 7.

Table 7 Categorization of predictors (Derived from Beck)

Category	Predictors
Strongest predictors of postpartum depression :	Prenatal depression, self-esteem, childcare stress and prenatal anxiety
Predictors had moderate r effect sizes :	Prenatal depression, social support, self-esteem, childcare stress, prenatal anxiety, life stress, marital relationship, history of depression, infant temperament, and maternity blues
Predictors had small r effect sizes :	Marital status, socioeconomic status, and unplanned/unwanted pregnancy
New significant predictors of postpartum depression :	Low self-esteem, single marital status, low socioeconomic status, and unplanned/unwanted pregnancy

The results of this meta-analysis confirmed Beck's (1996c; 1996d) earlier meta-analytic findings and in addition revealed four new significant predictors of postpartum depression. They were identified in this study as low self-esteem, single marital status, low socioeconomic status, and unplanned/unwanted pregnancy. Vulnerable women may tend to be unmarried and have low household incomes, and finance may be a key issue after childbirth. Women with an unplanned or surprise pregnancy had to cope with the ramifications of this unplanned event that would affect the rest of their lives. Self-esteem had emerged not only as a new, significant predictor of postpartum depression but also as one of the strongest predictors.

Implications:

The 13 significant predictors of postpartum depression that were identified in this replicated meta-analysis may be used by clinicians as a checklist for women who may be at risk for developing the mood disorder, and specific interventions may be designed to fit the unique profile of each individual woman. In particular, when there is an economic downturn, financial stress may become a significant predictor for couples who experience an unstable employment situation (Brown and Harris, 1978; Seguin, 1999).

2.1.6 Matthey, Barnett, Kavanagh and Howie (2001)

Objectives:

To establish the validity and reliability coefficients of the Edinburgh Postnatal Depression Scale (EPDS) as a screening tool for depression in fathers.

Method:

The couples (N=251) recruited in the antenatal period were interviewed at six weeks postpartum. EPDS scores and distress caseness (depression or anxiety disorders) were determined using the Diagnostic Interview Schedule.

Results:

Validity and reliability coefficients were obtained. Correlation (Spearman's rho) between the men's self-report forms (EPDS and CESD) was .62. Internal consistency (Cronbach's standardized alpha) of the EPDS for men was .81. Split-half reliability (Spearman-Brown) was .78. Analyses of the EPDS for fathers using distress caseness (depression or anxiety disorders) as criterion showed that a cut-off of 5/6 had optimum receiver operating characteristics.

Implication:

The findings indicate that the EPDS is measuring a mood construct in men similar to the CESD. The internal consistency of the EPDS for men is similar to that obtained by Cox et al. (1987) for the women (standardized alpha=.87). Split-half reliability is also similar to that reported by Cox et al. (1987) as being .88. These results show that the EPDS is both reliable and valid as a screening tool for postnatal depression in fathers. The authors recommend that the EPDS should be used routinely with fathers, and that a cut-off of 5/6 should be used to screen for both depressive and anxiety disorders.

Limitation:

Further studies should be undertaken on the use of the EPDS for fathers in Asian countries, so that the validity of the findings from this study can be determined in population of different cultural background.

2.1.7 Conclusion

This review section has summarized the most up-to-date (until 2001) predictor variables for postpartum depression. The magnitude of the relationship between the mental illness and each of the predictor variables has been identified (Beck, 1996c; Beck, 2001a). This identification enhances primary health care professionals in their alertness in detecting postpartum depression. Using EPDS to perform routine screening for both depressive and anxiety disorders in men and women will assist primary health nurses and mental health workers to have a better understanding of the parents' mood during the perinatal period (Cooper and Murray, 1997; Matthey, 2001). By administering the PDPI at regular intervals during the prenatal and

postpartum periods will provide health caregivers with information on target risk factors for which intervention programs can be planned to help prevent or treat mental illness during these periods (Beck, 1998). Further research is encouraged to identify emerging predictor variables for postpartum depression as a result of the changing socioeconomic position of women in the contemporary society.

2.2 ANTENATAL EDUCATION AND CARE

In this section a total of five published papers have been reviewed from the year 1994 to 2002. They are from Nolan, Okano & Nagata, Brugha and Ho respectively.

2.2.1 Nolan (1994)

Objectives:

The aim of the study was to discover what men want from antenatal classes, and what their worries about pregnancy and labor are.

Method:

A survey was conducted of 30 fathers attending antenatal classes in Birmingham, England. A six-point questionnaire was given to participant fathers to complete before the class began.

Results:

The following findings were reported.

a) Men's concern during pregnancy was for the safety of two people, their partners and their babies.

b) Men's concern was about their partners' needs for physical and emotional support.

c) Men expected themselves to be the selfless supporters of their partners during labor.

d) Men often felt that the professionals did not treat them as equal partners in making decisions about the birth of their child.

e) During the antenatal course men wanted to acquire the knowledge and skills which would enable them to help their partners for the immediate postnatal period.

f) Men were concerned about the effect of the baby on the couple's relationship.

g) Men were concerned about their own adjustment to fatherhood.

Implication:

The findings provide a complete agenda for the childbirth educator to consider when dealing with antenatal and postnatal topics. Childbirth educators should bear the needs of fathers in mind, using appropriate language and holding single-sex sessions where necessary.

Limitation:

The sample size of the study was small. Men attending the antenatal class may be a self-selecting group, representative of a particular section of society, so the survey cannot be generalized to the population at large. In addition, it was not clear whether the men completed the questionnaire in the presence of their partners, who may have influenced their answers and feelings at the point of completion. Lastly, the questionnaire used in the study may require validation before it can be used in future research to replicate the findings of this study.

2.2.2 Nolan (1997)

Background and objectives:

There have been criticisms that antenatal classes cannot often 'provide women with a realistic account of birth and parenting' (Direct quote from Nolan, 1997, p.1198), and may not be addressing the critical needs of the class attendants. Women complain that antenatal preparation fails to consider abnormalities in labor, assisted deliveries and Caesarean section (Hillan, 1992). It is also reluctant to look at difficult issues such as stillbirth, handicapped and very sick babies and women who have long-term sequelae as a result of giving birth (Fleissig, 1993). In addition it is silent about postnatal issues such as mental health after birth, basic baby-care skills and how to access support (Nolan, 1997). Hence, there is significant group of women who attend antenatal care but do not participate in childbirth preparation classes. Skevington and Wilkes (1992) have found that 'the support women gain from participating in a small group which meets regularly over a period of four to eight weeks is one of the most valuable aspects of class attendance' (Direct quote from Nolan, 1997, p.1202). The aim of the study was to review contemporary antenatal education.

Method:

A descriptive design was employed.

Results:

Researchers agree that postpartum depression may be caused by the lack of support for new mothers (Logsdon, 1997). 'The aim of antenatal education now must be to work with the information, skills and life experience the woman already has and to build on those in order to help her grow in

confidence as a consumer of the maternity services and as the mother of her child' (Direct quote from Nolan, 1997, p.1201).

Implication:

Further research is necessary to look into whether existing antenatal education is adequately meeting the needs of the women for whom it was originally designed, and, if not, how to modify the current programs to meet such needs. Antenatal educators are also recommended to find out the ways to restructure their teaching so as to meet the needs of the women who choose not to attend childbirth preparation classes. Any modification of current programs and introduction of new programs should have a built-in evaluation process to assess their effectiveness and to identify room for future improvement.

2.2.3 Okano and Nagata (1998)

Background and objectives:

Social support provided antenatally may have a protective effect against postnatal depression. Women who most benefit from antenatal classes are probably those who have a positive attitude to medical care (Rutter et al., 1988), who are primiparae (Elliot, 1989), older, wealthier and better-educated (Lumley, 1993). Effectiveness of information and practical advice provided during pregnancy about postpartum depression has not been adequately demonstrated. The authors (Okano, Tadaharu and Nagata, Shigeo) examined the occurrence of postnatal depression in two groups of childbearing women (attendants v. non-attendants at antenatal informational support groups). The authors wished to test the hypothesis that women who

received information and offers of support concerning postnatal depression would make more rapid contact with health professionals and psychiatrists after the onset of postnatal depression. In addition, the women would have fewer difficulties in the management of their conditions and have a better outcome as 'intention-to-treat' in comparison to women who had not received the same information and support.

Method:

Out of a total of 1,738 pregnant women who delivered at Mie University Hospital in Japan from 1988-1995, 646 attended antenatal classes (Mother's classes). Assessments of outcome were made by a three-stage procedure, using a Japanese version of the Edinburgh Postnatal Depression Scale (EPDS) and a clinical interview at the first consultation, 6 weeks and 12 weeks later.

Results:

Forty patients were identified as suffering from postnatal depression. The number of women with major depressive disorder in the non-attendant group was significantly higher than that in the attendant group. There was no difference in time of onset of depression between the two groups, but the time of the first psychiatric consultation after delivery in the attendant group was much sooner than that of the non-attendant group. The EPDS score of the non-attendant group was significantly greater than that of the attendant group at the first consultation. Six weeks later the difference was less marked, and there was no difference in EPDS scores of the two groups at 12 weeks after the first consultation.

Discussion and comments:

a) antenatal support may facilitate early contact with psychiatric services and may reduce the severity of postpartum depression,

b) non-attendants may be more likely to reject help generally and therefore develop a more severe disorder,

c) antenatal support and information may be effective in helping women to gain access to assistance and support for postnatal depression, and may also reduce the severity of postnatal depression.

In the study, a EPDS cut-off point of 8.5 was used, which is lower than the UK cut-off point (Cox, 1994). Using a lower threshold score for identifying depression indicates the incidence of postnatal depression in Japan may be lower than in the West (Kumar, 1994). Further research is encouraged to find out more conclusive evidence on the benefit of antenatal information and advice in relation to postpartum depression.

2.2.4 Brugha et al.(2000)

Objectives:

The aim of the study was to test the hypothesis that women at increased risk of postnatal depression, who were randomized to receive a parental-support-enhancing intervention program antenatally, would be less likely to be depressed at 3 months postnatally.

Method:

A pragmatic randomized controlled trial was conducted in antenatal clinics. 'Preparing for Parenthood', 'a structured antenatal risk factor reducing intervention designed to increase social support and problem-solving skills, was compared with routine antenatal care only' (Direct quote from Brugha,

2000, Abstract). The authors compared the percentage depressed at 3 months after childbirth using the self-completion General Health Questionnaire Depression Scale and Edinburgh Postnatal Depression Scale (EPDS), and the Schedules for Clinical Assessment in Neuropsychiatry in a systematic clinical interview.

Results:

The final sample size was 190 (those who provided outcome data at 3 months postpartum). Assignment to the intervention group did not significantly impact on postnatal depression or on risk factors for depression. Attendants to the intervention program benefited no more than non-attendants. The authors concluded that this pragmatic randomized trial has demonstrated that assignment to the primary preventive, risk-reducing, antenatal intervention had no major impact on postnatal depression.

Comments:

The author reported that women who participated in the 'Preparing for Parenthood' program enjoyed the intervention and believed it to be beneficial. There are various factors determining the outcome benefit of the intervention program, such as the organization of the program schedule, the quality and experience of the program executor, and the participants' attendance rate (in this program 55 per cent of participants attended too few sessions to be likely to benefit).

Limitation:

The author admitted that the course leaders of the program had only been briefly trained and had no experience in psychological intervention. This was a clear drawback for the study. It was also evident that the power of the study

was insufficient to detect small preventive effects and benefits, therefore, the sample size of the study needs to be increased which may be achieved by improvement in engaging the candidates throughout the study.

2.2.5 Ho and Holroyd (2002)

Objectives:

The aim of the study was to investigate Hong Kong Chinese women's perceptions of the effectiveness of antenatal education in preparing them for motherhood in the first month after childbirth.

Method:

The study employed an exploratory descriptive design using qualitative methodology that included observations and focus group interviews.

Results:

Two focus groups were conducted, with 5 and 6 mothers in the 1st and 2nd group, respectively. The mothers made the following complaints about the structure of the antenatal class:

a) unfavorable environment (too many people, and the room was too warm),
b) a lack of cultural relevance in audiovisual aids used because the videos were about the practice and feelings of Westerners, and
c) the length of the antenatal classes was too long.

In addition, the mothers also made the following comments on the process of the class:

a) too much formal teaching and minimal interaction,
b) irrelevant content on common problems of neonate, and

c) some of the antenatal educators were unable to answer practical questions in baby care.

Participants felt that the antenatal class provided them with knowledge about baby/self care, but did not prepare them for complex emotional problems. They felt they did not have adequate preparation for baby care and informational needs for self care. Finally, they also experienced a conflict between lay and professional advice.

Implication and comments:

Many health professionals fail to put the principles of adult education into practice (Ho, 2002). To promote interaction in class, small informal classes using role-play, problem-solving activities and experience-sharing sessions are recommended. Educators may need to assess individual mothers' and couples' educational needs and teaching materials should be revised periodically. Teaching should be illustrated with locally and culturally (Chinese specific) relevant samples. Post-basic training should be provided to educators (Murphy-Black, 1990). Midwives should initiate new programs to introduce family centered care into the home setting and to assist women in their transition (Brown & Johnson, 1998). Finally, midwives need further education on culturally specific problems and should encourage women to speak about how they can balance bio-medical approaches with folk traditions.

Limitation:

A clear limitation of the study was the small sample size chosen only from one public hospital. Also, the researchers conducting the focus groups in the study were not trained moderators, and their nursing profession may induce

researcher bias in the interpretation of the women's opinions. Therefore, the information obtained in this study may at the very most be just the perceptions of a small group of women in Hong Kong and cannot be generalized. In addition, husbands were not included in the focus groups. The inclusion of husbands in future studies should be considered as more effort is made to encourage husbands to attend antenatal classes. Furthermore, the effectiveness of these classes in enabling husbands to support their wives at the postpartum period should also be evaluated.

2.2.6 Conclusion

Antenatal education has grown up as a service designed to meet the particular needs of women (Nolan, 1997). Antenatal educators are recommended to work within a framework of adult learning styles (Ho, 2002). Within this framework, adult learners (pregnant women and their partners) should be encouraged to interact with the educator and among small groups, in order to enrich their understanding and to let the educators evaluate the program content and structure for future improvement. Therefore, educators have to be trained with skills to enhance participation and interaction. In addition, considerations should also be given to the structure and process of antenatal classes for couples together, or for women only, or for men only (Nolan, 1997). Despite the unfavorable results from Brugha (2000), there is a strong belief by other researchers that depression may be reduced through education and that antenatal education interventions may endure into the postnatal period.

2.3 POSTNATAL EDUCATION AND CARE

Five published papers are reviewed in this section from year 1996 to 2001. They are from Holden, Moran, Ruchala, Small and Long respectively.

2.3.1 Holden (1996)

Objectives:

Holden wished to test the hypothesis that a non-directive counseling intervention by health visitors would be both helpful and practicable in terms of service provision.

Method:

Depressed women were randomly allocated to either the treatment group, where health visitors gave non-directive counseling, or to a control group who received routine primary care treatment without research intervention.

Results:

It was found that the percentage of women recovering from depression in the counseled and control groups was 69.2 per cent and 37.7 per cent respectively. There was also a significant difference in the amount of reduction in scores on all measures of depression between the treatment and control groups.

Implication and comments:

This study demonstrates that trained health visitors offering non-directive counseling can have a positive influence on the lives of women with postnatal depression. Confiding may help to reduce depression and improve marital relationships, and counseled women may see the health visitor as being there for them and their baby. However, there may be problems of implementation in today's clinical practice. For example, in Hong Kong

health visitors are an increasingly stretched resource. Secondly, health visitors are not necessarily experts in mental health, therefore expert help and support from psychiatrists, psychologists and community psychiatric nurses has to be assured. In Hong Kong, such a referral system is not readily accessible in all hospitals. Finally, there are also ethical issues to consider when the depressed mother confides in the health visitors. Therefore, clear policy decisions are needed before putting a comprehensive health visitor program in place.

2.3.2 Moran (1997)

Objectives:

The purpose of the study was to investigate predictors of postpartum women's perceived informational needs.

Method:

Data from a 12-page self-report survey was analyzed. Associations between desire for more information on specific topics and length of postpartum hospitalization, maternal age, maternal education, and social support were calculated.

Results:

The study had a final sample size of 1161 women. Within this sample group, 540 (46.5 per cent) were primiparas and 621 (53.5 per cent) were multiparas. Informational needs of different types of postpartum women were found as follows:

a) primiparas mostly wanted information on baby care topics and self-care topics,

b) multiparas mostly wanted information about getting along with their other children and self-care topics,

c) what all of the women wanted most often was baby care information about recognizing their baby's illness, baby's schedule, and calming a crying baby,

d) women under age 25 years wanted significantly more self-care information than the older women did,

e) all women who reported high levels of support from friends and family wanted significantly less information than those with fair or poor support,

f) primiparas with short postpartum stays in hospital wanted information about significantly fewer self-care and baby care items than those with longer stays,

g) multiparas with short postpartum stays in hospital wanted more self-care information than their long-stay counterparts,

h) prenatal class attendance and delivery methods were not associated with perceived informational needs.

Implication and comments:

The findings of the study establish 'a clear need for health information among postpartum women that is not completely addressed by existing prenatal education classes or postpartum teaching' (Direct quote from Moran, 1997, p.33). Future studies relating to a short postpartum stay in hospital should focus on the ability of follow-up programs to meet the informational needs of postpartum women in cases where early discharge is due to hospital policy.

Limitation:

The instrument used in the study was a long survey (12-page!) which might encounter difficulties in administration. Those who did not respond to the second mailing were offered a telephone interview, which further decreased the reliability of the instrument. Validity and reliability of the research instrument should be addressed in future studies. In addition, prenatal class attendance was determined from survey responses to the question: "Did you attend childbirth preparation classes?" (yes or no). The survey did not include information on the frequency in attending preparation classes, which may have an implication on the nil association between perceived informational needs and prenatal class attendance in the study.

2.3.3 Ruchala (2000)

Objectives:

The aim of the study was to find out the most important content areas to include when teaching postpartum women from the perspective of both nurses and postpartum women.

Method:

A descriptive design using scaled response surveys was employed. The Postpartum Teaching Questionnaire was developed by the nurses to determine perceptions of teaching priorities for postpartum women. Data for nurses and mothers was collected and comparisons between responses of nurses and new mothers were analyzed.

Results:

The participants included 71 nurses who provided in-hospital maternity nursing care, 53 nurses who provided postpartum follow-up home care visits,

and 103 postpartum women. The findings showed that nurses gave priority to teaching about infant care, whereas new mothers gave priority to their own care. The differences between the perceptions of nurses and new mothers were statistically significant.

Implication:

To facilitate better communication and teaching by nurses, the postpartum teaching checklists should be reviewed periodically according to the teaching needs of postpartum women. Educators should also give more opportunities to new mothers to participate in decision-making about their educational needs.

Limitation:

The results of this study were obtained from new mothers who were primarily white, well-educated, and upper middle-class. Therefore, they cannot be generalized to other sample groups. The content validity of the Postpartum Teaching Questionnaire was established only by nurses and not by new mothers and their partners.

2.3.4 Small, Lumley, Donohue, Potter, and Waldonstrom (2000)

Objectives:

The purpose of the study was to find out the effectiveness of a midwife led debriefing session during postpartum hospital stay in reducing the prevalence of maternal depression at six months postpartum.

Method:

Women were allocated to a debriefing or to a standard care group. Women in the debriefing group were provided with an opportunity to discuss their

labor, birth, and post-delivery events and experiences before they were discharged from hospital. Depressive symptomatology of all participating women at six months postpartum was measured by EPDS.

Results:

There were 917 women responded to the outcome questionnaire (the response rate was 88 per cent). Women from the debriefing group were not less likely to score as depressed on the EPDS than women from the standard care group. As a result, this finding does not support the idea that offering debriefing sessions after operative birth and before leaving hospital would reduce postpartum depression. However, women's perception on debriefing was positive, with 43 per cent rating it as "very helpful", 51 per cent rating it as "helpful", and only 6 per cent rating it as "unhelpful".

Implication and comments:

There are various factors determining the effectiveness of debriefing on the reduction of maternal depression, including the effectiveness of the individual midwives leading the debriefing, the timing of the debriefing session, and the individual women's way of coping. In addition, there are doubts about whether a single session of debriefing would have an impact on the onset of postpartum depression when there are too many other inter-related factors involved. However, since 94 per cent (437/463) of the women in the study rated the debriefing session as helpful or very helpful, it is worthwhile to elucidate their perceptions on "helpful", so as to identify ways to improve the design of the debriefing or to improve its execution. Finally, I agree with the comments made by Bland (2000) on the study "it may be that

these particular midwives are not very good at debriefing rather than that debriefing is ineffective" (Direct quote from Bland, 2000, p.1470).

2.3.5 Long (2001)

Objectives:

The purpose of the study was to examine if symptoms of anxiety and depression of parents would be alleviated after attending parenting programs facilitated by health visitors.

Method:

All parents (n=78) participating were requested to complete a questionnaire both before and after attending an 8-week "Positive Parenting" program. Data was collected and responses were analyzed.

Results:

At the end of the parenting program, the parents' levels of clinical anxiety and depression were significantly reduced. There was an increase in more positive ratings of personality states by the parents, and they were more calm and energetic.

Implication and comments:

'Health visitors have the skills and are in the position to be preventative agents of inadequate parenting, and advocates of positive parenting' (Direct quote from Long 2001, p.611). The study indicates the needs of parents suffering from anxiety and depression, who could benefit from positive parenting programs. Primary prevention and early secondary prevention, using organized teaching programs for parents, can be useful in combating childhood behavior problems (Cox, 1993). In order to demonstrate the long-

term effectiveness of 'Positive Parenting' programs, longitudinal studies on parents who participate in these programs are necessary in future,

Limitation:

The number of participants in the study was relatively low. The reliability and validity of the self-administered questionnaires in the study were not established.

2.3.6 Conclusion

Research findings (Moran, 1997) have indicated that, although prenatal education can provide appropriate information about labor and birth, little postpartum information is provided or retained. Shortened hospital stays have affected the time available for nurses to teach mothers to care for themselves and their newborns (Ruchala, 2000). In addition, 'the physical and emotional sequelae of childbirth may have an impact on the amount of content the new mother can absorb and retain' (Direct quote from Ruchala, 2000, p.272). By examining women's opportunities to gain information, and by determining factors associated with what women want to know, health caregivers can better meet women's needs for information, which may facilitate better use of available time and greater retention of topics.

2.4 FATHERHOOD

A total of five published papers have been reviewed in this section from the year 1992 to 2000. The authors are Chapman, Chalmers, Draper, Barclay, and Greenhalgh. The scope of review extends from the role of fathers during pregnancy, labor and birth, to their experience at postpartum and infancy.

2.4.1 Chapman (1992)

Objectives:

The aim of the study was to describe and explain the expectant father's experience during labor and delivery.

Method:

A grounded theory methodology was used for data collection and analysis.

Results:

Twenty couples were recruited to the study. Expectant fathers played three roles in the study. They were the coach, teammate, and witness - with the majority of the men playing the role of witness. 'The roles adopted by expectant fathers were related to the degrees of understanding and mutuality within the couples' relationships' (Direct quote from Chapman, 1992, Abstract).

Implication and comments:

Health care providers and childbirth educators should inform the couples of the various labor roles, and assist the expectant fathers to choose a role that they find comfortable and fitting their personalities, their expectations, and the relationship of the couple. Further research is necessary to validate the findings in a larger sample group. The roles of expectant fathers are under continuing evaluation in order to address their needs and support requirement.

Limitation:

This study had a small sample size (20 couples). It was a qualitative study using semi-structured interviews. Therefore, the findings can only be generalized to the population that is willing to share their experience and

thoughts, which is a major limitation. Female researchers conducted the interview with the expectant fathers, which may have induced researcher bias. To decrease the effects of having a female perspective, a male research assistant may be employed in similar studies in future.

2.4.2 Chalmers and Meyer (1996)

Objectives:

The aims of the study were to explore the perceptions and experiences of fathers on their partners' pregnancy, during antenatal preparation programs, during birth, and parenthood.

Method:

Three groups of 50 fathers each were recruited from two maternity hospitals. Fathers were asked to complete one questionnaire. It was either covering their perceptions during their partners' pregnancy, or their experiences of antenatal education or their experiences during birth. Fathers were also asked to complete a second, follow-up questionnaire relating to their parenthood experiences.

Key findings:

a) Forty-six men responded to the questionnaire on pregnancy. Many reported experiencing fears (73.9%), excitement (47.8%), happiness (43.5%), pride (41.3%), anxiety (30.4%), sleep disturbances (21.7%). Other feelings included being emotional, irritable, disorganized, insecure, dependent, and under family pressure.

b) Thirty-six men responded to the questionnaire on antenatal education. Most of the men (75%) attended medical check-ups with their partners.

Many reported not receiving enough information about pregnancy, birth, breastfeeding, bottle-feeding, baby care, becoming a father, and intercourse during pregnancy and after delivery. Only 5.6% of the men never attended antenatal preparation classes with their partners. Men reported learning enough at classes. They were less satisfied with information provided about the hospital stay, coping with doctors and nurses, their role after birth, emotions after birth, their partners' physical well being after birth, and family planning.

c) Thirty-three men responding to the questionnaire on experiences during birth. Most were present with their partners at the birth (90.9%) and in labor (87.9%). Most men (78.8%) reported having enjoyed the birth. Feelings of love at first sight of the baby were experienced by 69.7% of men while 12.1% reported feeling love after a few hours and some (6.1%) after a few days or longer (3%). Feelings experienced strongly in the days after delivery included pride (72.7%), joy (69.7%), excitement (63.6%), relief (63.6%) and fulfillment (63.6%).

d) Most fathers reported fatherhood as a most wonderful experience (84.2%), and better than they had expected (84.2%). Most reported taking an active role in caring for their babies (94.7%). As many as 31.6% felt that having a baby disrupts marriage while 42.1% thought it made a marriage.

Implication:

The results of this study indicate that many fathers' needs for information in specific areas of concern are not being fulfilled adequately. Current antenatal education cannot address personal and interpersonal issues. This

study reflected that fathers experience a variety of emotions during pregnancy, birth and at postpartum. It is clear from the findings of the study that caretakers need to realize the special needs of fathers during their transition to parenthood, and take appropriate measures to address these needs.

Limitation:

Sample bias may exist in the data because fathers were participating in the study on a voluntary basis. All men recruited were of White ethnic origin and the majority of them (92.5%) were married. Therefore, a similar study can be replicated on other sample groups to validate the findings of the current study.

2.4.3 Draper (1997)

Objectives:

The aims of the study were to review the key literature on fathers' birth attendance; to discuss the reasons for its increasing trend; to assess the different roles and responsibility men may adopt in the labor room and the implications.

Method:

The review was conducted by searching through the literature in the medical database, looking for references quoted in papers, and hand searching of journals.

Key findings:

a) There was an increasing trend in men's birth attendance (Enkin et al, 1995).

b) The reasons for the increasing trend were believed to be some general benefits and improvements in labor outcome. The presence of a labor companion, especially the women's partners, heightened the women's ability at labor (Berry, 1988; Kennell et al., 1991).

c) 'There appear to be some benefits in terms of labor outcome for men attending births but also some disadvantages' (Direct quote from Draper, 1997, p.135). Men may be viewed with suspicion and considered to be second rate if they chose not to attend birth (Palkovitz, 1987).

d) There had been limited research on the needs of, and benefits to, the father (Taylor, 1992).

e) Three roles emerged when men attended births; they were coach, teammate, and witness (Chapman, 1992).

Implication:

a) Men have very few opportunities to express their feelings about pregnancy and labor (Taylor, 1992), which is clearly an area that future research needs to explore.

b) According to Norlan (1994), men take part in antenatal classes and there is little discussion of their unique needs. Therefore, these classes do not meet men's educational needs. Antenatal educators have to consider men's expectations and take measure to address them.

c) It is apparent from this review that 'beliefs held by both the expectant man and the professional regarding the man's laboring role, influence both the man's expectations of his own role, and the antenatal education and labor support he receives'. (Direct quote from Draper, 1997, p.136)

Therefore, it is necessary for future studies to identify paternal needs and for educators to design education programs to address them. In addition, researchers may need to explore further the influence of medical professional on fathers attending births. Finally, I agree with the author's recommendation that the changing role of the father in the contemporary society has to be taken into consideration when making further investigation of fathers' birth attendance. For example, there is practical evidence that the role of Chinese fathers is evolving as a result of the continuing changes in the socioeconomic position of women in the Chinese society.

2.4.4 Barclay and Lupton (1999)

Objectives:

This study aims at exploring the experience of new fatherhood in the contemporary society in Australia: a socio-cultural analysis.

Method:

It was a longitudinal, qualitative study into the first 6 months of new fatherhood for a group of 15 Australian men. Fifteen couples were recruited at a Sydney hospital. Both partners were interviewed on a minimum of four occasions from a few days before childbirth until 5-6 months thereafter. The questions explored the participants' expectations and subsequent experience of fatherhood; and also the participants' contribution to decision-making processes and practices in providing care. All interviews were audio-taped and fully transcribed for analysis.

Key findings:

The majority of the men recruited and interviewed found the early weeks and months of fatherhood more uncomfortable than rewarding, even though they were looking forward to fatherhood very positively. 'Their experience appeared more closely aligned to their difficulties with meeting social expectations and roles rather than individual deficits' (Direct quote from Barclay, 1999, Abstract). The demands of the new roles (provider, guide, household help and nurturer) for the first-time fathers, and the tensions produced, 'challenge men's relationships with their female partners, the meaning and place of work in their lives and their sense of self as competent adults' (Direct quote from Barclay, 1999, Abstract).

Implication:

The difficulties experienced by the new fathers in the study are related more to socio-cultural changes in how fatherhood is represented and understood in the contemporary society in Australia. Most men found it difficult to find the time away from work to develop the intimate relationship with their child, in the same way as their partners do. This experience often resulted in anger and frustration. The interview data collected in the study indicates that fatherhood in the local community may currently be under-going changes which require men to alter their own behavior and attitudes. During the process of such change, midwives, community health nurses, home visitors and educators will need to play a positive and proactive role by providing education that addresses the men's informational needs, and social and emotional support that may alleviate the pressure experienced by men during their transition to fatherhood.

Limitation:

The study involved only 15 participants. Its findings are difficult to generalize due to the small sample size. Future research in the same topic area needs to include men from hospitals in other parts of the country (not just a key city such as Sydney) in order to enhance the confidence of the findings and to address the implication at a societal level.

2.4.5 Greenhalgh, Slade and Spiby (2000)

Objectives:

The objectives of the study were to examine

a) whether fathers' childbirth experience was influenced by their prior attendance at antenatal classes,

b) whether fathers' childbirth experience was mediated by pre-existing coping style (monitoring and blunting), and

c) whether fathers' childbirth experience influenced their postpartum emotional status and attachment to their baby.

Method:

A quantitative methodology was employed in which participants completed the following questionnaires within 6 days of childbirth or at 6 weeks postpartum: Experience of Childbirth Questionnaire, the Miller Behavioral Style Scale, and the Edinburgh Postnatal Depression Scale.

Results and findings:

Of the 78 fathers who participated in the study, 58 (74.4 per cent) were married to their partners and 20 (25.6 per cent) were unmarried; all were living with their partners. More married fathers than unmarried fathers attended antenatal classes.

a) Fathers who were categorized as information seeking and who attended antenatal classes did not report any differences either in terms of satisfaction or distress with their childbirth experiences compared with fathers in the same category who did not attend antenatal classes.

b) Fathers who were categorized as information distracting or blunting and who did not attend antenatal classes reported greater satisfaction with their experiences of attending childbirth than fathers in the same category who attended antenatal classes.

c) No differences were found between fathers of the two categories with respect to distress.

d) Fathers' experiences of attending childbirth were unrelated to their description of their baby at 6 weeks postpartum.

e) Fathers who reported satisfaction in terms of fulfillment and delight with their experience of attending childbirth were related to lower levels of depressive symptoms at 6 weeks postpartum.

f) Unmarried fathers reported higher levels of depressive symptoms

g) Fathers with a cesarean-born infant used significantly more negative adjectives to describe their baby than fathers with a vaginally born infant.

Implication:

One of the findings in this study "attenders did not report more positive childbirth experiences than nonattenders" raises questions about the usefulness of fathers' attendance at antenatal classes. This issue requires further investigation to explore the influence on the mothers if their partners attended the classes with them, and the mothers' subsequent experiences of

childbirth. The dimension of fulfillment was related to depressive symptomatology at 6 weeks postpartum. It would be important to consider that the perception of fulfillment may be affected by the fathers' personal characteristics. Though current trends may support the assumption that attending antenatal classes benefit both the mothers and their partners, this study suggests that for some fathers, attending the classes may be associated with less positive childbirth experiences. It also suggests that men's experience at attending their baby's birth may influence their subsequent emotional well-being. For control purpose, it would be worthwhile to take an extra step to measure the fathers' emotional well-being before attending the childbirth.

Limitation:

The sample, which was relatively small, was drawn from two urban hospitals in the United Kingdom, therefore, it is not possible to generalize the findings of the study to different populations. The Experience of Childbirth Questionnaire had not been validated, thus, further research is necessary to establish the validity of the instrument. In addition, the other questionnaires employed in the study were only validated on women (at the time of the study).

2.4.6 Conclusion

The published papers reviewed in this section suggest that it is time to take a fresh look and reevaluate the currently accepted expectations of fathers during labor and birth (Chapman, 1992). Education and care providers need to be aware of and reactive to the special needs of fathers during pregnancy,

birth and their transition to fatherhood (Chalmers, 1996; Draper, 1997). The experiences of new fatherhood may be influenced by social-cultural environment, and men are required to change their own behavior and attitude on fatherhood in order to adapt themselves to the changing environment and culture in the society (Barclay, 1999). The changing process needs the support from social and health care workers, and also continuing education by local education providers. Although interest in the study of fatherhood has grown rapidly in Western countries in the past two decades (Costigan, 2001), there is the issue of self-selection bias (that is sampling representativeness and generalizability). In a recent study by Costigan (2001), findings indicated that participating fathers were underrepresented. Also, fathers in families in which the mother did not participate were never invited to participate. Therefore, more attention needs to be paid to the recruitment and representativeness of fathers in family research. Furthermore, the concerns of fathers who decline to participate need to be addressed. Finally, the understanding of fatherhood in Asian countries is far from satisfactory, and to conduct successful studies in this area, researchers have to overcome a lot of hurdles that are cultural specific.

2.5 SOCIAL SUPPORT

A total of six published papers have been reviewed here from the year 1996 to 2000. The authors are Ballard, Areias, Tarkka, Morgan, Meighan, and Misri.

2.5.1 Balllard and Davies (1996)

Table 8 Literature on postpartum depression with fathers (Derived from Ballard and Davies)

Author (year)	Sample size	Research instruments	Findings	Limitation of the study
Rees & Lutkins (1971)	77 fathers	Beck Depression Inventory	A rate of mild to moderate depression of 13%, 3% were judged to be clinically significant cases	Small sample size
Atkinson & Rickel (1984)	28 couples	Beck Depression Inventory	13% of fathers to score 10 or more eight weeks after delivery	Small sample size, sample bias to all employed couples
Harvey & McGrath (1988)	40 fathers	DSM-III	40% of 40 fathers whose wives suffered from postpartum psychosis experienced a DSM-III psychiatric disorder; 17.5% suffered from DSM-III major depression	Small sample size, mild depression were not defined as cases
Raskin et al (1990)	86 couples	CESD self report questionnaire	Rates of depressive cases were 22% in both mothers and fathers	Sample bias to all white college graduates
Lovestone & Kumar (1993)	24 partners of women	RDC or DSM-III	41.7% patients fulfilled the criteria for major and minor depression	Small sample size
Ballard et al (1994)	200 couples	PAS version of the PSE schedule	10% of fathers were depressed at 6 weeks postpartum and 5% were depressed at 6 months postpartum	-

Each of the studies that focused upon fathers in the first two months postpartum reported a prevalence rate of psychiatric morbidity of at least 10 per cent. The prevalence rates of psychiatric morbidity amongst new fathers

with psychiatrically ill partners were similar in each of the studies. Further research to replicate the findings with the inclusion of control group is needed. During the postpartum period the mother is expecting more support from her partner, while having to cope with a new responsibility – taking care of the baby. As a result, the mother is giving less emotional support to her partner in the same period of time. There may be additional financial burdens and increased restrictions on lifestyle to the new father. Furthermore, the new father may be less prepared than his partner due to reduced preparatory education and less information flow from the family network. O'Hara (1986) has drawn attention to links between the occurrence and severity of postnatal depression and the amount and quality of support that is provided by husbands and by relatives. It is recommended to pay more attention to fathers in the context of postnatal depression. Ballard et al. (1994) found an association between depression at six weeks postpartum and unemployment. Atkinson & Rickels (1984) found fathers who subjectively thought that the infant was a 'good baby' were less likely to be depressed. Most of these associations have only been reported in one study and several of the studies included only small numbers of subjects. Hence, there is a need for further studies to ascertain such associations.

2.5.2 Areias (1996)

Objectives and method:

The authors have studied a sample of 54 women expecting a first baby and 42 husbands or partners from the sixth month of pregnancy up to 12 months postpartum. They were recruited from maternity clinics in the city of Oporto,

Portugal. Rates of depressive disorder were ascertained by semi-structured interview and both partners also completed a number of other questionnaires and interviews.

Results:

Women as a whole were found to have had more life events in the previous six months, more moderate-to-severe events, poorer social adjustment, and to generate a higher score than the men on the neuroticism scale of the EPI. Details are in Table 9.

Table 9 Comparison of prevalence of depression between men and women (Derived from Areias)

Time period	Women	Men
Prevalence of depression during pregnancy	16.7%	4.8%
Prevalence of depression at 3 months after delivery	31.5%	4.8%
Prevalence of depression at 12 months after delivery	53.7%	28.6%

Associations with depression were tested across the entire 12 postnatal month period in the women. Positive links were found with a lifetime history of depression in their husbands or partners. Men belonging to manual or working class occupations were more likely to be depressed. For men other significant associations were with poor social adjustment both during pregnancy and after childbirth but the most interesting link was with occurrence of depression in their wives, especially during pregnancy and in the period 0-3 months postnatally.

Implication:

It is worthwhile to do more studies on men in the context of fatherhood since limited studies are available in this aspect. O'Hara (1986) has drawn attention to links between the occurrence and severity of postnatal depression and the amount and quality of support that is provided by husbands and by relatives. It is recommended to pay more attention to fathers in the context of postnatal depression. If the depression in men can be reduced, they would be able to provide better support to their wives. The effectiveness of counseling may be improved if it is provided jointly to fathers and mothers rather than to mothers alone. It may be beneficial to effectively engage fathers to support their depressed spouses and to join them in caring for the new baby, and this study shows that if fathers are to assist in these aspects successfully their own psychological needs must also be recognized and met.

2.5.3 Tarkka and Paunonen (1996)

Background and objectives:

Primary health care workers believe that counseling is an effective way to help mothers to prepare for pregnancy, childbirth, childcare and parenthood. Nurses have a special responsibility in helping mothers to learn to look after their newborn and to grow into motherhood. According to Tarkka, the purpose of this study was to look at the social support provided by nurses on a maternity ward to recent mothers and to describe the mothers' experiences of their stay on the ward after childbirth. The study set out to address two main questions. First, what kind of social support do mothers who have recently given birth receive from nursing staff on the maternity ward?

Second, how do mothers experience their stay on the maternity ward after childbirth?

Method:

The data was collected by means of structured questionnaires in a sample of 200 mothers giving birth at Tampere University Hospital. The questionnaire was designed by the researcher for purposes of collecting information on how nurses had supported the mother on the maternity ward and on how the mothers had experienced their stay on the ward after childbirth.

Findings:

Mothers reported receiving concrete aid on the maternity ward but not enough affection or emotional support. It was found that first time mothers tended to receive more support in the form of affirmation and emotional support than other mothers, and that affirmation was not readily available for mothers in the youngest age group. Ninety-five per cent of the mothers described their stay on the ward as a positive experience. Eighty-nine per cent also described it as quiet and peaceful. Over 52 per cent of the first-time mothers and 46 per cent of the other mothers felt that the nurses on the maternity ward were friendly, but were always pressed for time.

Comments and recommendation:

In this study the majority of the mothers said that they were not aware of the potential experience of changes in mood after delivery. The mothers hoped to have more opportunities to discuss the possible changes that may happen in themselves in connection with childbirth. It is recommended that trained nurses are available to support the mothers in child care and the whole family's welfare after childbirth, so that individual plans may be made for

each mother and family to meet their needs and expectation. It is also recommended that provisions for special and consistent guidance to the husbands are made so that they are able to look after their newborns.

Limitation:

The questionnaires used in the study had not been validated. The internal consistency of the questionnaires had not been established. Therefore, the reliability of the study needs improving. In addition, the results of the study cannot be generalized beyond the original population.

2.5.4 Morgan et al. (1997)

Background and objectives:

In general, postnatal depression in women is more recognized and treatment usually involves women only. Even though some treatment programs are offered to men and women together, there is a high drop out rate for men. Studies have reported the father's feelings of isolation, jealousy, resentment and concern about their own ability to be a good father. The strain of having a depressed wife, a new baby, his own employment, sleepless nights, and, not knowing how to assist, explains why fathers are more likely to be distressed if their partner is distressed (Harvey, McGrath, 1988; Lovestone, Kumar, 1993; Ballard et al., 1994). Thus it is important, when the mother is suffering from postnatal depression, to involve both the father and the mother in the treatment program. This study aimed to find out the improvement in effectiveness of a treatment program offered to the couples.

Method:

This paper reports a group program for postnatally distressed women with involvement of the men in a couples' evening. There were 34 couples in all. The women were asked to complete an EPDS, a General Health Questionnaire and a Coopersmith Self-Esteem Questionnaire at the beginning and at the end of the 8-week program (containing 8 sessions). In addition there was a 6-month follow-up evaluation. The men were asked to complete the GHQ in the last three joint sessions (couples' sessions) and follow-up data was obtained from them during the sessions. Both partners completed a group evaluation form in which they commented on the usefulness of the group.

Results:

a) At a cut-off score on the EPDS of over 12 to screen for clinically significant depression, 66 per cent of the women at the start of the group scored in this range, whereas by the end of the group this had decreased to 22 per cent, and by follow-up to 0 per cent.

b) First session scores on the Coopersmith Self-Esteem Inventory were higher for women whose partner attended the later couples' evening, though this difference was not found at the end of group or follow-up stages.

c) The mean score on the GHQ for the 14 men who completed this measure was 9.6, and eight of these scored in the distressed range (using the 7/8 cut-off).

d) For these eight distressed men six of them had a partner who was also distressed (using the EPDS cut-off).

e) Of the 14 couples, six out of 12 distressed women had a distressed

partner.

Implication and comments:

a) It seems that if a man is in difficulty it is likely that his partner is too, and that almost half of significantly distressed mothers have a partner who is also distressed.

b) It is likely that by the men attending the program the women feel supported and more understood by their partners, which in itself may have a therapeutic effect.

c) For the women another benefit of the program is that they realize that they are not alone, and that they will have the opportunity to share openly their personal experience of mothering.

There is a clear need for further evaluation and design of treatment programs for couples with postnatal depression. Nevertheless, it may be difficult or impractical to run this kind of couples' program in the situation where there is significant financial constraint on the family, and when the spouse has to work overtime to secure his job and income. In traditional Chinese society, it is a cultural practice for a husband, who is the master of the family, to focus on providing financial and material support to the family, and not to be bothered about issues of emotional upheavals of his female partner or other family members. The husband may therefore not recognize or agree to the importance of attending this kind of program. Asian culture tends to be relatively conservative though the situation is evolving.

Limitation:

There was no control group to the study, which makes the arguments less conclusive.

2.5.5 Meighan et al. (1999)

Objectives and method:

Meighan interviewed and conducted thematic analysis on eight men in Tennessee, Knoxville, trying to understand better about postpartum depression and its impact on the family through the experiences of fathers whose spouses suffered from this disorder.

Findings:

Experiences related by the participants in this study were very similar in several aspects and a common thematic pattern emerged. The birth of the infant brought about the following:

a) loss of the partner the husband had known,

b) loss of the relationship once shared with his spouse,

c) loss of control,

d) loss of intimacy,

e) loss of how things used to be,

The men and women tried to find someone in the health care system who could help, and most sought professional help in the first few weeks after the onset of depression.

Comments:

After childbirth, changes do occur in a couple's relation and if there are significant difficulties, early referral and treatment are necessary so as to prevent parental problems and perhaps save a marriage. Treatment programs and counseling would be more effective if they involve the couple rather than just the woman suffering from depression. The father may influence the outcome of the treatment (Morgan, 1997) and he himself may be

significantly affected by the problem. It is recommended to offer a support group for men whose spouses suffer from postpartum depression, so that they can get help to support their spouses in an effective way.

Limitation:

The sample size of the study was small (8 men!). In order to amplify the implication of the findings, a quantitative, prospective and longitudinal study design may be necessary.

2.5.6 Misri et al. (2000)

Objectives:

Several studies have indicated that supportive partners play a significant role in reduction of stress levels and improvements of mood in new mothers (Marks, 1996; Logsdon, 1997). The objective of this study was to investigate the impact of partner support on the treatment of mothers suffering from postpartum depression.

Method:

Twenty-nine women meeting the DSM-IV criteria for major depression with postpartum onset were recruited at 2 major university hospitals in Vancouver, British Columbia. They were assigned randomly to 2 treatment groups: group 1 (control group) consisted of patients only while group 2 (support group) consisted of patients and their partners. The patients in both groups were seen for 7 psycho-educational visits each. In group 2, the partners participated in 4 of the 7 visits. Patients in both groups were administered four questionnaires. The partners in both groups completed two questionnaires.

Results:

Relative to the control-group patients, the support-group patients displayed a significant decrease in depressive symptoms and other psychiatric conditions. Relative to the support group, the general health of the partners in the control group deteriorated.

Indication and recommendation:

The results indicate that husband's support has a positive influence on women's recovery from postpartum depression. There may be a connection between the woman's illness and the partner's general health. The authors conclude that partner support has a measurable effect on women experiencing postpartum depression. It is recommended that husbands or partners should be routinely included in women's visits with both primary care physicians and psychiatrists.

Limitation:

The sample size for both groups (support group N=16, control group N=13) was small. The sample was biased in that most of the subjects were white. The follow-up period in the study was short (10 weeks).

2.5.7 Conclusion

It can be concluded from the reviewed studies that fathers are also potential sufferers of postpartum depression (Ballard, 1996). Treatment programs may be more effective when the couple is involved instead of involving the depressed mother only (Morgan, 1997), and partner support may have a positive impact on the treatment of mothers suffering from postpartum depression (Misri et al., 2000). In order to help the partners to support their

wives better, it is recommended that the needs and emotional well-being of the partners are addressed in future supporting and education programs in addition to the provisions for special and consistent guidance in baby care.

The positive impact of partners' support on the development of postpartum depression in Western women has aroused research interest in Asian society, such as Hong Kong, to discover the relevance of the involvement of partners to the development of postpartum depression in the population of Chinese women.

2.6 THE IMPACT OF POSTPARTUM DEPRESSION ON THE FAMILY

In this section, a study in 1996 reflected the potential impact of postpartum depression on all family members, and two other studies in 1997 and 1998 explored the impact of this mental problem on infants and children.

2.6.1 Boath and Pryce (1996)

Objectives:

Postnatal depression is not only distressing to a woman, it can also have an adverse effect on her social life. The adverse effect may extend to her partner, and other family members, subsequently to the development of the infant and older children too. The author is trying to assess the impact of postnatal depression on the family.

Method:

Sixty women who were participating in a study of postnatal depression were asked to have a questionnaire completed and returned by their partners or close family members. Fifty-six (93 per cent) of the women had a major

depressive disorder as defined by RDC, and four (7 per cent) had a minor depressive disorder.

Results:

It was revealed that postnatal depression was indeed placing 'a burden on the family' and causing 'a lot of worry within the family', such as having to take over the woman's responsibilities and financial problems. Family members also reported that these women 'require a lot more attention', and that the women were 'reluctant to go out and unhappy to be alone'. (''Direct quote from Boath and Pryce, 1996, p.200)

Implication and recommendation:

The partners may have to be absent from work, sacrificing their social and leisure activities; children may be shouted at and miss school and other outings. Postnatal depression certainly appears to be having an adverse effect on the family. Life may become unpleasant, worrying and distressing, and family members may have feelings of 'increased stress' and feelings of being 'under pressure' as they try to carry the burden of postnatal depression. As the study involved a relatively small sample size, it is worthwhile to do further research to fully assess the impact of postnatal depression on the family. In addition, there is a need to validate the association of paternal and maternal postnatal depression, which may combine to exacerbate the adverse effects on the family, other relationships, and the development of the infant and older children. It is also recommended to examine the impact of support and health services on partners and family members as well as women. This may be more effective and beneficial in the long run, enhancing the recovery

of the woman and her partner, and possibly reducing future problems occurring with their children and other family members.

The next two published papers demonstrate the findings on the effects of postnatal depression on infant development, children's adjustment to school and child well being.

2.6.2 Murray (1997a)

A number of studies have examined the 1 to 2 year old infants of mothers who have had a postnatal depression. The findings of these studies are listed in Table 10.

Table 10. Impact of postnatal depression on infant development (Derived from literature in Murray)

Author (year)	Sample size	Method	Findings and Limitation of the study
Stein (1991)	49	Assessment by defined methods of observation	Children of mothers suffered from postnatal depression showed less affective sharing, a lower rate of overall interactive behavior, less concentration, and more negative responses; they also showed less sociability to a stranger. The sample size was small.
Murray (1992)	111	Assessment by defined methods of observation	Infants of women who had been depressed postnatally had significantly poorer cognitive development; more likely to report behavioral difficulties in the child such as sleeping and eating problems, temper tantrums and separation difficulties.
Teti (1995)	104	Assessment by telephone interview and observation with defined methods	Association was found between the postnatal mood disorder and insecure infant attachment to the mother. There was sample bias: 95 per cent were white mothers.
Murray (1996)	22 studies	Descriptive review	Upon 18 month follow up, infants of postnatally depressed mothers were significantly less developed in terms of capacity for mental representation and mental development, and insecure attachment to the mother.
Murray (1997a)	7 studies	Descriptive review	An interaction was found between maternal mental state and infant gender: the boys of mothers who had had postpartum depression performed particularly poorly.

All the findings and observations from these studies suggest a significantly raised level of emotional disturbance in late infancy in the children of mothers who have had postnatal depression. On the other hand, Cutrona and Toutman found that the presence of irritable behavior in the infant contributed to the persistence of depression (Cutrona, 1986).

2.6.3 Sinclair and Murray (1998)

Objectives:

To address the issue of children of postnatally depressed mothers who may be at risk of difficulties at the time of transition to school. In addition, there may be persistent impairments in maternal social functioning (Stein et al., 1991) that limit maternal facilitation of school attendance and child friendships.

Method:

A longitudinal study in which teachers rated the adjustment to school of a community sample of children of postnatally depressed and well mothers. Children were assessed by teachers with various ratings after they had attended school for one term, and had had the opportunity to settle in. The teachers were looking at the child's general readiness for school, their personal maturity, competence in social relations and verbal ability. The information concerning the child's behavior in school was analyzed in relation to the mother's psychiatric state.

Results:

Study results indicated that while many of the differences in children's behavior shortly after starting school were related to the child's gender and

family social class, it was apparent that the mother's experience of postnatal and continuing depression may place the child at risk of difficulties in adjusting to school.

Implication and recommendation:

Though further research is needed to replicate the findings, it is clear that among sons of depressed mothers, the rates of clinically disturbed behavior are alarmingly high. Such findings highlight the need for resources devoted to supporting mothers of young children, in particular for the routine screening for postnatal depression and its effective treatment. Identifying mothers in need of support at an early stage is also a way to promote the mental health of the unborn child.

Limitation:

Although an association between postnatal depression and difficulties in boys' adjustment to school has been identified, the mechanisms underlying such association have not been determined. Also, the potential psychological problems of the girls of depressed mothers may be masked by the girls' optimal performance at school. Therefore, further research with different study designs would be necessary to validate such problems.

2.6.4 Conclusion

It is not possible to reach general conclusions about the effects of maternal illness on developing children because of differences between studies in both the ages of the infants at the time of exposure to maternal disturbance, and their ages at the time of assessment (Murray, 1997b). The studies described in this section have cast light on the effects of postpartum depression on

infants. These issues are of practical importance because of the frequency of postpartum depression (Cox, 1982; Cutrona, 1983; Lee, 2001), and its effects on the infants which seem to impinge on a wide range of psychological functions in the individual child as well as on the mother-child relationship (Murray, 1997b). To identify mothers who are in need of support at an early stage is one of the ways to promote the mental health of the unborn child. In addition, it is necessary to conduct screening and promotion of children's healthy development as early as possible (Luoma, 2001).

2.7 SCREENING FOR POSTPARTUM DEPRESSION

Widely used screening scales for postpartum depression are being reviewed here. They are the Beck Depression Inventory (BDI), the Center for Epidemiological Studies Depression Scale (CESD), and the Edinburgh Postnatal Depression Scale (EPDS). In addition, two newly developed potential screening scales are also under review. They are the Beck Depression Inventory-II (BDI-II) and the Postpartum Depression Screening Scales (PDSS). Two specific measurements for each screening scale are highlighted, and they are sensitivity and specificity. Sensitivity refers to the ability of each instrument to identify correctly all screened women who actually had postpartum depression. Specificity is the ability of each instrument to identify correctly all screened women who were not depressed. A comparison of the above scales is listed in Table 11.

Table 11 Comparison of screening scales for postpartum depression (Derived from literature in Cox & Holden, Beck & Garble)

	BDI	CESD	EPDS	BDI-II	PDSS
Developer (year)	Beck A T et al (1961)	Radloff (1977)	Cox (1987)	Beck A T et al (1996)	Beck & Garble (2000)
No. of items	21	20	10	21	35
Validation	yes	yes	yes	yes	yes
Translated into other languages	yes	no	yes	no	no
Sensitivity	poor	79.5%	86%	81%	94%
Specificity	good	71.1%	78%	92%	98%
Alpha reliability	-	-	.87	.92	.83-.94
Recommended cut off score for minor (major) depression	-	16 or more (-)	9 (12/13)	14 (20)	60 (80)
Limitation	Unable to detect minor depression	-	Not for diagnosis	Difficult to administer by telephone interview	Difficult to administer by telephone interview
Strength	-	Significantly correlated with clinical diagnosis	Easy to administer	Closer to diagnostic criteria	Closer to diagnostic criteria
Remarks	Applicability being questioned	-	Widely evaluated in Western /Asian populations	Performance need to be further assessed	Ready for use in routine screening

Condon and Corkindale (1997) suggest that in screening for postpartum depression it may be advantageous to use an instrument that contains a larger number of items. Their rationale is that if an instrument consisting of only a small number of items is used, a changed response on even just one or two items can significantly alter a woman's assignment to either the depressed or non-depressed group. However, in practice there are limitations to using an instrument that contains a large number of items in an out-patient clinic setting or in a telephone follow-up interview.

2.8 THE NEED FOR THE STUDY OF THE RELEVANCE OF THE INVOLVEMENT OF A WOMAN'S PARTNER TO THE DEVELOPMENT OF POSTPARTUM DEPRESSION IN HONG KONG

Previous chapter has demonstrated the importance of postpartum depression. It has an incidence rate of 10 per cent to 15 per cent in Western countries (Cox, Connor, & Kendell, 1982; Cutrona, 1983; O'Hara, Neunaber, & Zeloski, 1983b; Kumar & Robson, 1984; Watson et al., 1984; Herz, 1992; Whitton et al., 1996). Its major consequences are risk of future postpartum depression (Miller, 2002) and adverse impacts on the family (Cohn, 1986; Cutrona & Troutman, 1986; Field et al., 1988; Stein, 1991; Murray, 1992; Teti, 1995; Boath and Pryce, 1996; Murray, 1996; Murray 1997a; Murray, 1997b; Morgan, 1997).

Literature reviews has highlighted lack of family support as a strong aetiological factor for postpartum depression (Mueller, 1980; O'Hara et al.,

1983a; Cutrona, 1984; O'Hara, 1986; Campbell, 1992; Collins, 1993; Morgan, 1997; Murray, 1997b; Misri et al., 2000). The majority of the studies was undertaken overseas and was conducted in Western population. There are only few studies on postpartum depression conducted in the population of Chinese women (Pillsbury, 1978; Eisenbruch, 1983; Kok, 1994; Lee, 1997; Kit, 1997). They generally reported a lower risk of postpartum depression amongst Chinese women, which might be partly because of traditional values such as family cohesiveness, a low divorce rate, and parental substitutes (Chen et al., 1993). Changing socio-cultural factors in Hong Kong, such as an enhanced socio-economic status of Chinese women, an increase in family violence, in juvenile pregnancy, in child and sexual abuse, and in alcohol and drug addiction, may lead to an increase in postpartum depression (Lee, 2001). Because of the previous low incidence, such an increase in postpartum depression may not be recognized by medical professionals or tolerated by family (Lee, 2000). Therefore, it is necessary to study the relevance of partner support to the development of postpartum depression in Hong Kong, so as to provide educational data to medical professionals to decide on the direction of local health care education on postnatal mental illness.

2.9 SUMMARY

Chapter 2 summarizes the latest findings and discussions in several aspects of postpartum depression. There are a total of 13 predictor variables identified for postpartum depression, and the strongest predictors are prenatal depression, self-esteem, childcare stress and prenatal anxiety (Beck, 2001a).

It is recommended that clinicians to use these predictor variables as a checklist for pregnant women and new mothers (Beck, 1998), so that specific care may be designed to help the group at risk of the illness. The most effective antenatal and postnatal care may be the provision of a confidant to the mother, and small group support may be more appreciated by mothers than a large group (Skevington, 1992; Nolan, 1997). Antenatal and postnatal education may be effective in aiding the new parents to gain access to help for postpartum depression (Okano, 1998), and also may reduce the severity of the mental disorder. Further studies on the evaluation of today's antenatal and postnatal care programs are clearly necessary in order to be able to design new and effective programs to take care of the emotional needs of the mothers. In the design of new care programs, educators should also take measures to address the fathers' educational needs so that they can learn to support their wives in a more effective way. The type of laboring roles that fathers play is very much dependent on the antecedent information and support they receive from medical profession (Chapman, 1992; Draper, 1997), and men's experience at childbirth may influence their postpartum emotional status (Greenhalgh, 2000). The fathers will not only influence treatment outcome of their wives' postnatal depression (Misri et al., 2000), but may themselves be greatly affected by the problem (Meigan et al., 1999) and suffered along with their depressed wives (Morgan et al., 1997). Studies indicate that partner support has a positive and measurable effect on women experiencing postpartum depression (Misri et al., 2000). In addition to fathers' support, other social supports have been found to be helpful, such as individualized support programs by nurses to the individual mother, father

and baby. The legitimization of paternity leave for new fathers may be a useful facility to enhance their effectiveness in supporting the family and the new mothers (Ballard, 1996). The quality of support a woman receives during pregnancy may be a critical element in protecting her from emotional distress. Early identification, preventive measures, and treatment, if necessary, can alleviate months of suffering for a new mother and decrease the potentially harmful impact on her infant (Beck, 1996c). In the review on postpartum depression screening scales, the specificity and sensitivity of commonly used research instruments are covered. They are the BDI, the CESD and the EPDS. In addition, the new emerging tools BDI-II and PDSS are also highlighted. Finally, I have justified the need of the present study by highlighting the potential increase in postpartum depression in Hong Kong due to changing socio-cultural factors in the local community.

The objectives of the study, the research questions, study design, methodology, data collection procedure and statistical justification will be discussed in detail in chapter 3.

CHAPTER 3

RESEARCH OBJECTIVES AND PROCESSES

3.1 STUDY AND DEFINITION

This thesis describes a study examining the relevance of the involvement of a woman's partner to the development of postpartum depression in Hong Kong. The study looked at the extent to which paternal support was effective in reducing the risk of postpartum depression. The paternal support in this study was defined as the practical/instrumental support provided by the women's partners. For example, visiting antenatal clinics and attending antenatal education classes with them; keeping them company; being present at home and/or at birth; taking part in baby care activities and sharing of the household tasks.

3.2 RESEARCH OBJECTIVES

The objective of the study was set to answer the following questions:

3.2.1 Are Hong Kong women who have less paternal support available to them at greater risk of postpartum depression?

3.2.2 Are the timing, type and duration of paternal support relevant?

3.2.3 Is there a minimum level of support necessary to minimize postpartum depression (which could therefore be encouraged by appropriate education to Hong Kong public and health care professionals)?

3.3 METHOD AND SAMPLE

3.3.1 Procedure

The study on the relevance of the involvement of a woman's partner to the development of postpartum depression was prospective and longitudinal in design. Initially 370 pregnant Chinese women were recruited to the study. A final sample of 298 (80.5 per cent) women was successfully followed up from antenatal visit at third trimester to 3 months postpartum. Socio-demographic data on each woman was collected at the booking visit. The levels of depressive symptomatology were monitored at 34-36 weeks antenatally, 6 weeks postnatally and 3 months postnatally. The levels of paternal support were measured at 34-36 weeks antenatally and 3 months postnatally. The level of paternal support was examined for significant correlation with the score in depressive symptomatology as a dependent variable in the following combinations:

a) level of antenatal paternal support and score in depressive symptomatology at 34-36 weeks antenatally,

b) level of antenatal paternal support and score in depressive symptomatology at 6 weeks postnatally,

c) level of postnatal paternal support and score in depressive symptomatology at 3 months postnatally,

Other data (Appendix 7) that was considered to be helpful in the analysis was also collected at 6 weeks postnatally.

Paternal support was measured with antenatal and postnatal Paternal Support Questionnaires (PSQ) (Appendix 1 & 2). I had established the content and

face validity of the PSQ (Polit & Hungler, 1999) as follows. There were 12 items on the PSQ. Each item had been thoroughly discussed with a panel of 14 experts in the area (4 mothers, 4 pregnant women, and 6 health care workers), and the panel agreed these items to be practical elements of paternal support needed by pregnant women and new mothers in Hong Kong. Further, pilot interviews with 20 candidates had been conducted using the questionnaires. Each statement was rated on a scale from 0-4 resulting in a possible total score on the antenatal PSQ ranging from 0-25; and the possible total score on the postnatal PSQ ranging from 0-28. The total score achieved represented the level of paternal support available to the participant.

Antenatal and postnatal depressions were screened with the Chinese version of the Edinburgh Postnatal Depression Scale (EPDS) (Appendix 3, 4 & 5), which had been validated by previous researchers in Hong Kong (Lee, 1998).

The antenatal and postnatal checks, telephone interviews and postal surveys, as described in Table 12 on the following page, provided suitable opportunities for the completion of the PSQ and the EPDS. Each participant was given a file number for identification. All data was coded and entered into a standard computer program called Statistical Package for the Social Sciences (SPSS 10.0 for Windows) for statistical analysis. The PSQ scores and EPDS scores were analyzed with descriptive frequency. The correlation between PSQ scores and EPDS scores was determined using Bi-variate Correlations. The relationship between the two sets of scores was illustrated by simple line frequency. The frequency distribution of each paternal support

item was analyzed in conjunction with the feedback collected from face-to-face interviews and telephone interviews. These results were used to identify the timing, level, type and duration of paternal support needed by the pregnant women and new mothers. Chi-Square test was employed to determine the statistical significance of the differences in paternal support received by the depressed women (those who had EPDS score >=10) and the non-depressed women (those who had EPDS score<10).

3.3.2 Study design and flow of assessment

A prospective and longitudinal design was used. The participants were recruited at antenatal visit at the third trimester, and were followed up at 6 weeks postpartum and 3 months postpartum. Table 12 summarizes the flow of assessment.

Table 12 Flow of assessment

At 34-36 weeks antenatal	- Written or verbal consent obtained in antenatal session in hospital; - Antenatal EPDS questionnaire completed in antenatal session in hospital; - Antenatal PSQ completed in antenatal session in hospital or followed up by telephone interviews with antenatal PSQ within the same week;
At 6 weeks postnatal	- 6 weeks postnatal EPDS completed in postnatal session in hospital; or followed up by telephone interviews with EPDS; - Distributed 3 months EPDS and postnatal PSQ by hand or by post to participants and requesting them to complete and return them to hospital (attention to Dr. H S Wong) at 3 months postnatal i.e. 6 weeks later, stamped & addressed return envelope were provided to participants;
At 3 months (12-14 weeks) postnatal	- 3 months EPDS and postnatal PSQ completed at home and returned to hospital (attention to Dr. H S Wong); - Followed up by telephone interviews with those participants who did not return the questionnaires on schedule;

3.3.2.1 Baseline assessment at 34-36 weeks antenatal :

The nurse, who was a member of the Postpartum Depression Team (PPD Team) in Princess Margaret Hospital (PMH), approached the participants at antenatal visit at the third trimester. With informed consent, the nurse invited the participants to complete the antenatal EPDS (Appendix 3) and antenatal PSQ (Appendix 1). The antenatal EPDS was used to assess the participants' depressive symptomatology. The antenatal PSQ was used to measure the level of paternal support available to the pregnant women during pregnancy. Participants who were not literate were assisted by the nurses in completing the questionnaires. The completed antenatal EPDS questionnaire was

labeled with the participant's details (their first name, Hong Kong Identity Card number, hospital registration number, age, address and contact telephone numbers). Any missing participants were followed up by me via telephone interviews. All participants who scored above the 9/10 cut-off in antenatal EPDS were requested to attend the Special Antenatal Clinic for further monitoring by a nursing officer or O&G consultant who would then confirm the presence of depression in these women and offer counseling service. Some of these participants were referred to the Psychiatric Nurse Clinic for further assistance, depending on the degree of depression they were suffering.

3.3.2.2 Six weeks postnatal assessment:

At 6 weeks after childbirth, the participants (60 per cent) returned to PMH for one postnatal check. They were invited to complete the 6 weeks postnatal EPDS (Appendix 4) which was used to assess the symptomatology of postnatal depression. I would interview them face-to-face to collect more variable information from them as per Appendix 7. The 3 months postnatal EPDS (Appendix 5) and postnatal PSQ (Appendix 2) together with a stamped addressed return envelope (attention to Dr. H S Wong – O&G consultant and head of PPD Team) were distributed to all participants, who were reminded to complete the questionnaires 6 weeks from the check up date.

A minority group of participants (40 per cent) who did not return to PMH for the postnatal check were followed up by me via telephone interviews to complete the 6 weeks postnatal EPDS. The 3 months postnatal EPDS and

postnatal PSQ, together with the stamped addressed return envelope were posted to these participants. The total response rate at six weeks postnatal assessment was 90 per cent.

All participants who scored above the 9/10 cut-off in EPDS at this stage were requested to attend the extra clinic session for close monitoring by nursing officer or O&G consultant who had experience in counseling. Some of these participants were referred to a Psychiatric Nurse Clinic for further assistance, depending on the degree of depression they were suffering.

3.3.2.3 Three months postnatal assessment:

Completed postnatal PSQ and 3 months postnatal EPDS (65 per cent) were returned by the participants via post to the attention of Dr. H S Wong in PMH who would pass them to me for handling. The postnatal PSQ was used to measure the level of paternal support available to the participants throughout the 3 months postnatal period. The 3 months postnatal EPDS was used to monitor the depressive symptomatology of the participants at 3 months postpartum. Those who did not return the questionnaires were followed up by me via telephone interviews (16 per cent). All participants who scored above the 9/10 cut-off in EPDS at this stage were invited to return to PMH to attend further clinic sessions for close monitoring by nursing officer or O&G consultant who would provide them with counseling service. Some of these participants were referred to a Psychiatric Nurse Clinic or Community Nursing Services Team for further assistance. The total response rate at three months postnatal assessment was 81 per cent.

3.3.3 Sample

My target population was Chinese pregnant women who were staying in Hong Kong from the third trimester to 3 months after birth. There was no limitation on age and the pregnant women could be primiparous or multiparous. My accessible population was Chinese pregnant women who registered for antenatal booking in Princess Margaret Hospital (PMH) in Hong Kong.

At the time of the study, PMH was a regional public hospital serving the Kowloon West and New Territories South regions of Hong Kong. It had more than 1,200 beds and a staff of over 3,000. The Department of Obstetrics & Gynaecology provided comprehensive services in General O&G, Urogynaecology, Gynaecological Oncology, Infertility & Reproductive Medicine, and Maternal & Fetal Medicine. All pregnant women in Southern New Territories and Kowloon West who wished to be delivered in public health care services were required to attend the booking visit in PMH. Hence, even though the recruitment was confined to one hospital, the sample was community-based. PMH had an annual birth registration of about 3,600. A Postpartum Depression Team (PPD Team) was running a Postpartum Depression Screening Program in the O&G unit in the hospital. The PPD Team composed of an O&G consultant, Dr. H S Wong, who was the head of the team, a few nurses from the O&G Department, and myself, as an external assistant. We were all working on a voluntary basis for the welfare of the pregnant women attending the booking visit in PMH.

3.3.4 Eligibility criteria:

To be eligible for recruitment to the study, the pregnant women had to fulfill the following criteria:

a) she had registered in antenatal booking in PMH,

b) she was a Chinese woman,

c) she would be staying in Hong Kong from the third trimester to 3 months afterbirth,

d) she had no known psychiatric condition before pregnancy, and

e) there were not any sudden family changes in the course of pregnancy e.g. death or severe illness of a family member.

3.3.5 Sample size

To study the relevance of the involvement of a woman's partner to the development of postpartum depression, I planned to administer two groups of scale (PSQ and EPDS) to the participants. The PSQ was used to measure the levels of paternal support available to participants during pregnancy and the first three months after childbirth, and the EPDS was used to monitor the depressive symptomatology of these women at antenatal and postnatal periods. In this situation, the two measurements were on ordinal level scale, and the relationship between them would be tested using Kendall's tau. Just as .05 had been adopted as the standard for the α criterion, a conventional standard for $1-\beta = 0.80$, there was a 20% risk of committing a Type II error. With an alpha of .05 and power of .80, for an effect size of .18, the sample size needed in the study would be about 250 subjects (Polit & Hungler, 1999). With a sample of this size, I would wrongly reject the null hypothesis

only 5 times out of 100 and wrongly retain the null hypothesis 20 times out of 100. In Polit and Sherman's (1990) study, the average correlation found in nursing studies was in the vicinity of .20. Assuming 20% of the participants would drop out at the 3 months postpartum follow-up, about 320 participants should be recruited. Upon completion of the study, 370 women were recruited.

3.3.6 Sample recruitment

Approval for the study proposal was sought from the following parties:

a) the University of Hull,

b) the Research Subcommittee of Department of O & G, PMH, and

c) the Ethics Committee in PMH.

Prospective participants were fully informed about the purpose of the research, the nature of postpartum depression, the purpose of the postpartum depression questionnaires and the paternal support questionnaires. They were further informed of the following. There was no potential risk involved. If being identified to be at risk of depression, the participants would have the benefits of a close follow up by a Special Antenatal Clinic and O&G consultants in PMH, and if necessary, the participants would be further assisted by a Psychiatric Nurse Clinic in the hospital. For women being identified with inadequate family support, they would be offered more social support from the Community Nursing Services Team in PMH or the Social Welfare Office in the nearest district. The participants had the right to withdraw anytime during the study and treatment would not be affected.

Prospective participants were also given the assurance of confidentiality of personal details and privacy.

The informed consent process was documented in a consent form (Appendix 8) being witnessed by Dr. H S Wong, the O&G consultant of PMH. Upon obtaining written or verbal consent from prospective participants, their respective personal data and contact telephone numbers were recorded in the consent form.

I was a member of the PPD Team in PMH. There was a half-day postnatal session in the O&G unit, when mothers returned to the hospital for 6 weeks postnatal check. I worked there as an assistant and followed up with as many recruited mothers as time allowed. Otherwise, I would follow up with the prospective participants by telephone interviews and postal survey. The total duration of recruitment and follow-up work was about 12 months. Completed questionnaires and consent forms were stored in locked filing cabinets. Each participant was given a file number, identifying her first name, Hong Kong Identity Card number and telephone numbers. All data was held in a computer. The requirement of the Privacy Ordinance Act was complied with to ensure that the participants' privacy was at all times protected.

3.4 STATISTICAL JUSTIFICATION

Justification of the statistical tests selected for the present study is summarized in Table 13 (Derived from Polit & Hungler, 1999).

Table 13 Factors considered in the selection and use of statistical tests in the present study

Factors for consideration	**Parametric tests**	**Non-parametric tests**	**Application to present study**
Measurement level of the dependent variable	Interval-level, or ratio-level	Ordinal-level, or norminal-level	Ordinal-level
Shape of the distribution of the dependent variable	Normal distribution	Non-normal distribution	Non-normal distribution
Test statistic for correlation coefficient	Pearson, r	Spearman's rho, ρ; or Kendall's tau, τ	Kendall's tau, τ
Commonly adopted significance criteria, α	.05	.05	.05
Conventional standard of power, or 1-ß	.80	.80	.80
Conventional values of effect sizes in a bi-variate correlation situation	small to medium small : .10 medium : .30 large : .50	small to medium small : .10 medium : .30 large : .50	.18 (small to medium)
Statistician's viewpoint	Preferred	Not preferred	A problem solving approached is needed.
Researchers' and candidate's viewpoint	preferred	reasonable	Reasonable to use non-parametric tests for the present study.

Most of the tests used by researchers are parametric tests that are more powerful and offer more flexibility than non-parametric tests. To be able to

use parametric tests, measurements have to be on at least an interval scale, with the variables being normally distributed in the population. Though statisticians disagree about the utility and virtues of non-parametric tests, a more moderate position which researchers (including myself) think is reasonable, is that non-parametric tests are most useful when the data under consideration cannot be construed as interval-level measures or when the distribution of data is non-normal.

In the present study, the two measurements were EPDS and PSQ scores. They were on an ordinal level scale and the variables were non-normally distributed (Figures 1 to 7 in section 4.3), therefore parametric tests could not be applied in the study. I adopted a problem-oriented approach and used non-parametric tests on the grounds that they could be applied when the data had been measured on an ordinal level scale. In addition, they also involved less restrictive assumptions concerning the shape of the distribution of the critical variables than parametric tests.

The correlation coefficient is useful as a summary statistic for the strength of relationship between two variables. I was testing the relationship between EPDS and PSQ scores. To find out how close that relationship was, I needed to find out the correlation coefficient that summarized the magnitude and direction of the relationship between the two sets of scores. For non-parametric tests, the appropriate coefficient of correlation is either Spearman's rho, ρ or Kendall's tau, τ. Kendall's tau has some advantages over Spearman's rho. Spearman's ρ is older than Kendall's τ, and can be

thought of as a simple analogue of the product moment correlation coefficient, Pearson's r. The coefficient, τ is a part of a more general and consistent system of ranking methods. The values of these statistics range from –1.00 to +1.00. It is not uncommon to adopt .05 as the standard for α, and .80 for the power, or 1-β. The effect size, which is an estimate of the magnitude of the relationship between the research variables, is at the vicinity of .20 for most of the nursing studies (Polit and Sherman's, 1990).

To find out whether there were significant differences in paternal support received by the depressed individuals (EPDS score >=10) and the non-depressed individuals (EPDS score <10), I applied another commonly used non-parametric test called Chi-Square test to each antenatal and postnatal paternal support item.

3.5 RATING SCALE AND QUESTIONNAIRES

3.5.1 Edinburgh Postnatal Depression Scale (EPDS)

EPDS (Cox, 1987) (Appendix 6) was designed as a screening questionnaire to identify possible depression in a clinical setting, and also for use in research. It is a 10-item self-report rating scale which has satisfactory validity and reliability as well as being sensitive to changes in the severity of depression over time (Boyce et al., 1993). At a threshold score of 12/13, the sensitivity of EPDS was 86 per cent and specificity was 78 per cent. At a cut-off of 9/10, the failed detection rate of cases could be reduced to under 10 per cent, which is a particular advantage when the EPDS is used in the first stage of screening in a community study (Cox & Holden, 1994). The alpha-

coefficient of the scale was found to be .87 (Cox & Holden, 1994) which demonstrated a high degree of internal consistency and reliability of the scale. The alpha-coefficient is a widely used index of reliability (Polit & Hungler, 1999). The 10-item self-report rating scale is acceptable to women themselves and to their health visitors. It is simple and quick to complete, and is rapidly scored. The EPDS may also be used to screen for depression during pregnancy (Cox & Holden, 1994), and for postnatal depression in fathers (Matthey, 2001).

A Chinese version of the EPDS was used in the present study. This version has been validated by local researcher (Lee, 1998). Using a cut-off score of 9/10, the sensitivity of the scale was 82 per cent, and specificity 86 per cent. In the present study, the EPDS was used to monitor symptomatology of depression during pregnancy, and at 6 weeks and 3 months postnatal periods for statistical analysis. The scale was also used to identify probable cases of depression for close follow up by nurses, O&G consultants and if necessary, by psychiatric professionals.

3.5.2 Paternal Support Questionnaires (PSQ)

The PSQ were designed in Chinese as a set of questionnaires to measure the levels of paternal support available to a Chinese woman at pregnancy and during a 3-month postnatal period. There were two sets of questionnaires: one set was for antenatal measurement (Appendix 1), consisting of items relevant to paternal support during pregnancy, the other set for postnatal

measurement (Appendix 2), consisting of items of paternal support applicable in postpartum.

The content of the PSQ was validated as follows. A panel of experts in the content area was used to evaluate and document the content validity of the PSQ. My experience (a mother of two children) and the experience of a group of eight pregnant women and new mothers were used to identify suitable items which included several of our own construction. After extensive discussion we derived 12 items which we believed were relevant and adequate to measure the level of paternal support available. The wording of the items was discussed with 2 health visitors, 2 nurses and 2 O&G consultants to gain their acceptability. The agreed items proved to be satisfactory in the pilot interviews with 20 women attending the antenatal and postnatal clinic. The PSQ were acceptable to the women and that the questions were clear. As such, the content and face validity (Polit & Hungler, 1999) of the Chinese version of the PSQ were established. The alpha-coefficient of the antenatal PSQ was .61, and the alpha-coefficient of the postnatal PSQ was .73. These figures indicate that there is an adequate degree of internal consistency and reliability of the PSQ (Polit & Hungler, 1999).

The layout and scoring of the PSQ were very similar to the EPDS. Each item was given a score and the total score represented the level of paternal support available. The scoring method was simple: 0 for the lowest frequency or duration of support on a particular item; (depending on the

number of response alternatives in each question) 3 or 4 for maximal frequency or duration of support on the same item; and 1, 2, or 3 for an intermediate score. The total possible score of the antenatal PSQ ranged from 0 to 25. The total possible score of the postnatal PSQ ranged from 0 to 28. Higher scores indicated better support. The participants found the PSQ simple and easy to comprehend, and it took less than five minutes to complete.

3.5.3 "Variables" questionnaire

The Variables questionnaire (Appendix 7) was designed to collect additional data from the participants. It consisted of 13 dichotomous questions. Some of the data could be obtained from the hospital record of the participants, while the majority of the information had to be collected directly from the participants attending postnatal clinic or via telephone interviews. This data was very useful in establishing the characteristics of each participant.

3.6 DATA COLLECTION AND TREATMENT

3.6.1 Flow of data collection

The data of the present study had been collected in the flow as illustrated in Table 14.

Table 14 Flow of data collection

Data collected	Time of collection	Means of collection
1) antenatal EPDS score	34-36 weeks antenatal	self-reporting at antenatal clinic; or by telephone interviews
2) antenatal PSQ score		
3) 6 weeks EPDS score	6-8 weeks postnatal	self-reporting at postnatal clinic; and face-to-face interviews; or telephone interviews
4) "Variables" information		
5) 3 months EPDS score	3 months postnatal	postal survey to be completed at home and returned to PMH; or by telephone interviews
6) 3 months PSQ score		

3.6.2 Pre-analysis phase

A pre-analysis file (Appendix 9) was established for logging data in and maintaining appropriate administrative records, as well as reviewing on-going data for completeness and legibility, instituting steps to retrieve pieces of missing information, and assigning a file number for each case for identification. The participants' first names, Hong Kong Identity Card numbers, contact telephone numbers, the expected dates of delivery and actual dates of delivery were also entered into the pre-analysis file for the purpose of easy follow up, and for performing telephone interviews as and when required.

3.6.3 Coding data and data entry

Since the data must be converted to a form amenable to computer analyses, each questionnaire was given an abbreviation and each response alternative was given a numeric code. Only completed cases from 34-36 weeks antenatal to 3 months postnatal were entered onto a SPSS file for analysis, i.e. there was no missing case recorded. SPSS is a software package known as the Statistical Package for the Social Sciences. It has a data entry module (SPSS Data Entry) that can be used to design and customize self-report forms, automatically define variables to be used in statistical analyses, and establish data rules to check the accuracy of entered data and to deal with skip pattern. Entered data was analyzed according to the statistical tests justified in section 3.4.

3.7 PRACTICAL ISSUES

During the course of the study there were a few practical issues.

3.7.1 Commitment in health care research

I had made a tremendous effort to lobby private hospitals and O&G specialists in private practice to participate in the research project. The purpose was to enlarge the sampling frame and to enhance the generalization of the study results. Unfortunately, all private practitioners turned down the proposal for the following reasons:

a) the setting in the private sector was not appropriate to conduct research,

b) patients in the private sector would be more than unwilling to give personal information to strangers,

c) practitioners and nurses in the private clinic were unlikely to have time to explain to patients about the rationale of the research and to monitor its progress etc..

The reasons were by and large valid in the environment in Hong Kong. Thus the present study ended up with only a recruitment site, PMH, which was a regional government hospital.

3.7.2 Participants' compliance

I observed that a large proportion of participants did not have a strong sense of social responsibility to commit themselves to academic and community research activities. It is an issue that Hong Kong must deal with if the city wishes to gain advancement and popularity in academic research, particularly in health care research projects, which are largely community based. The issue can only be resolved through long term education and public relationship activities with the community, which inevitably is the responsibility of the Government and local education providers.

3.7.3 Resources constraint

There were no official resources allocated from the O&G Department of PMH to the Depression Screening Program at the time of the study; the PPD Team was merely functioning on a voluntary basis to perform depression screening on patients in the antenatal and postnatal clinic. There was a high turnover of voluntary staff, which was understandable because each of them had their own official role in the hospital or other outside practice. The recognition of the voluntary team remained an unresolved issue. For

participants who did not return for one postnatal check, or who did not return the questionnaires on schedule during the course of assessment, I had to do a telephone follow up which was indeed time consuming. For participants who returned to work after maternity leave, contact could only be made via their home phone number in the evenings or at the weekends. Hence there had to be a maximal flexibility in the timing of making telephone calls to this group of participants.

3.7.4 Time constraint

Although the present study had been approved by PMH, it was my personal project. I therefore had to observe the time schedule of printing forms, photocopying questionnaires, posting surveys, collecting returned questionnaires from the hospital, conducting telephone interviews and follow-ups according to the designed flow of assessment. Apart from attending a course on basic bio-statistics to refresh my knowledge in the subject, I had also attended the SPSS training to become familiar with the computer program. Last but not least, to sustain the mood and momentum of the research work required tremendous self-motivation because the research was a lengthy process. At times I felt it was a very lonely journey, especially as I had been working on a part-time and distance-learning basis for the PhD and communication with fellow PhD students to share my research experience and feelings about the process was minimal.

3.7.5 Research fund

There had been no support in research funding for the present study. As I was an independent researcher not attached to any local education institute, all administrative expenditures such as postage, paper, envelopes, photocopying charges and library fees for using the local university library services had to be in my personal budget plan. It was a very good learning experience which I could replicate if I am involved in future public research activities when application for research funding to Government, local institution or private organization is necessary.

3.8 FINDINGS OVERVIEW

Three hundred and seventy Chinese women were recruited to the study, with 298 (80.5 per cent) of them completing the full assessment designed in the study. The results showed that women in the study who received less paternal support were at greater risk of prenatal and postnatal depression. The level of paternal support needed and its impact on depression in the postnatal period was relatively higher than that in the antenatal period. The timing, level, type and duration of paternal support available determined the effectiveness of such support in lowering the risk of prenatal and postnatal depression. Furthermore, there was a minimum level of support necessary to minimize postpartum depression.

The next chapter presents participants' characteristics, attrition, and the descriptive statistics on Paternal Support and EPDS scores. Results on correlation analysis of the two sets of scores are displayed, followed by a

thorough review of each paternal support item using frequency distribution, Chi-Square test, and summarizing other qualitative feedback from participants during the course of the assessment.

CHAPTER 4

RESULTS

4.1 CHARACTERISTICS OF PARTICIPANTS

During the recruitment period (between August 2000 to September 2001), there were 3,600 registrations for antenatal booking in PMH. Five hundred women (14 per cent) were approached for recruitment and 370 women (74 per cent) participated in the study. The characteristics of participants are detailed in Table 15.

All participants were Chinese. Two hundred and eighty of them (94 per cent) were from Hong Kong and eighteen (6 per cent) were from China. Over 60 per cent were in the 26-35 years old age range; only 4 per cent were adolescent pregnancies. More than 80 per cent of the recruited pregnant women had high school qualifications. About 80 per cent of the women were in current employment. Only about 70 per cent of women attended antenatal classes. For close to 60 per cent this was a first-time pregnancy, and for 69 per cent it was planned. One-third of the deliveries were assisted such as Caesarean section or by vacuum. Within six weeks after childbirth, more than 40 per cent new mothers were breastfeeding their baby. Over 60 per cent of new mothers found their baby easy to manage. For mothers who found the baby difficult to manage, their perceived difficulties were: the baby was not sleeping well; was not eating well; or was crying very often; or needed carrying all the time; or the baby was having constipation. More than 90 per cent of new mothers considered their baby healthy.

Table 15 Characteristics of participants

	No. of participants	Percentage
From Hong Kong	280	94%
From China	18	6%
Total (N)	298	100%
Age (years)		
15-20	12	4%
21-25	47	15.8%
26-30	101	33.9%
31-35	90	30.2%
36-40	47	15.8%
41-45	1	0.3%
Total (N)	298	100%
First child		
Yes	175	58.7%
No	123	41.3%
Total (N)	298	100%
Planned pregnancy		
Yes	205	68.8%
No	93	31.2%
Total (N)	298	100%
School qualifications		
Yes	242	81.2%
No	56	18.8%
Total (N)	298	100%
Employed		
Yes	167	81.2%
No	131	18.8%
Total (N)	298	100%
Attended antenatal care classes		
Yes	207	70%
No	91	30%
Total (N)	298	100%
Delivery		
Unassisted	206	69.1%
Assisted	92	30.9%
Total (N)	298	100%

Table 15 Characteristics of participants (cont'd)

	No. of participants	Percentage
Feeding method*		
breast feeding	131	44%
Bottle feeding only	167	56%
Total (N)	298	100%
*at 6 weeks postnatal		
Healthy baby		
Yes	271	90.9%
No	27	9.1%
Total (N)	298	100%
Mother found the baby easy To manage		
Yes	193	64.8%
No	105	35.2%
Total (N)	298	100%
Mother's health at pregnancy		
Problems	26	8.7%
No problems	272	91.3%
Total (N)	298	100%

4.2 ATTRITION

4.2.1 Reason and time of attrition

Two hundred and ninety-eight women (81 per cent) participated in the three-month postpartum assessment. Among the 72 women (19.5 per cent) who left the study, the majority of them were not able to be contacted through their registered contact phone numbers. Details of reason and time of attrition are in Table 16.

Table 16 Reason and time of attrition

Reason of Attrition	Time of Attrition		Total
	6 weeks postnatal	3 months postnatal	
Withdrew consent	5	0	5
Unable to be contacted	45	10	55
Returned to China	10	1	11
Baby Died	0	1	1
Total (N)	60	12	72

4.2.2 Portfolio of responses

Table 17 Portfolio of responses

Data collection method	Percentage of response at the three time points of assessment		
	34-36 weeks antenatal	6 weeks postnatal	3 months postnatal
At clinic	80%	60%	-
Telephone interviews	20%	30%	16%
Postal survey	-	-	65%
Total (N)	100%	90%	81%

4.3 PATERNAL SUPPORT VALUES AND EPDS SCORES

The mode of antenatal Paternal Support score was 15 and the mean score was 12.9. The mode of postnatal Paternal Support score was 15.13 and the mean score was 14.8. It indicated that women received better paternal support after childbirth than during pregnancy. This mirrors the practical situation when most men reserve their annual leave and only take time off to support their wives during the first few weeks after delivery. Men in Hong Kong do not have legitimate paternity leave. The Chinese EPDS screening

scale has been validated (Lee, 1998) and a cut off score of 10 is recommended to differentiate between the depressed and the non-depressed individuals. There was a higher percentage of women scoring as antenatally depressed (38.3 per cent) than postnatally depressed at six weeks after childbirth (35.9 per cent). The mode of EPDS score dropped significantly from 11 at six weeks postnatal to 6 at three months postnatal, while its mean values remained about the same at the two periods (7.4 v 7.2).

Figures 1, 2, 4, 5 & 6 show the frequency of Paternal Support scores and EPDS scores at antenatal, 6 weeks postnatal and 3 months postnatal. Figures 3 & 7 show the frequency of Paternal Support score difference and EPDS score difference (3 months postnatal – antenatal). Table 18 summarizes the EPDS scores at the cut off point of 10. Table 19 details the statistical features of all scores.

Figure 1 Frequency of Paternal Support score at 34-36 weeks antenatal (N=298).

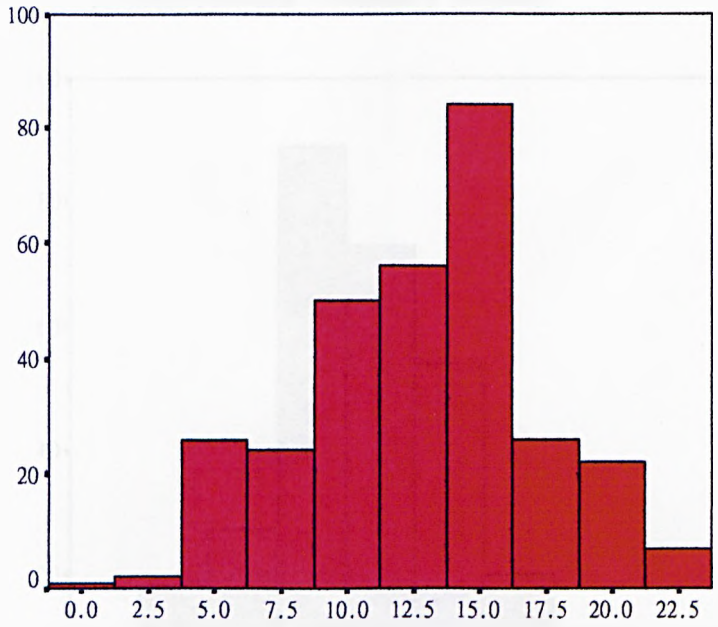


Figure 2 Frequency of Paternal Support score at 12-14 weeks postnatal (N=298).

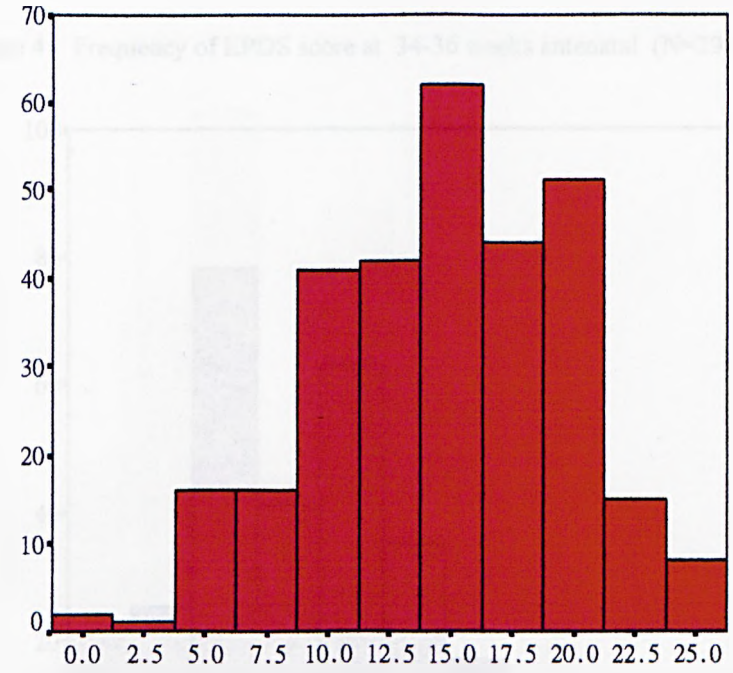


Figure 3 Frequency of Paternal Support score differences

(3 month postnatal – antenatal) (N=298).

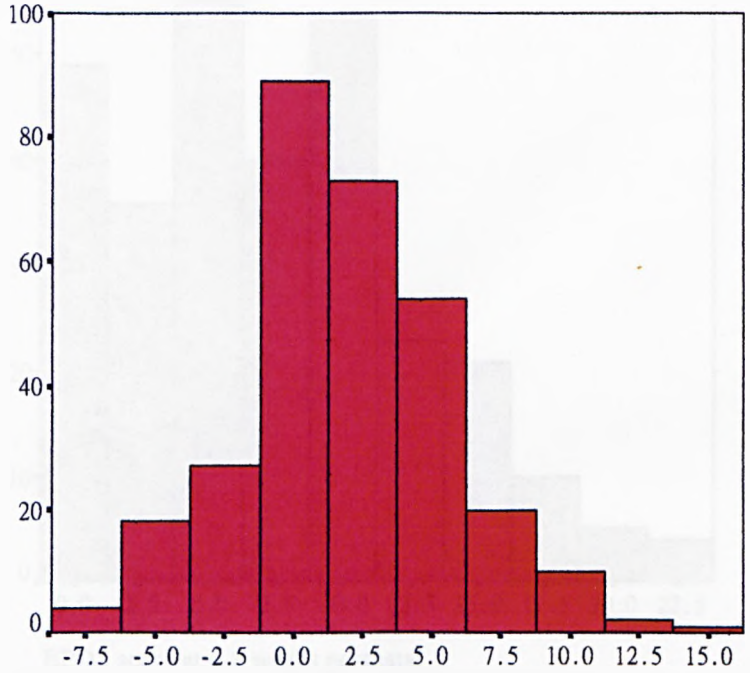


Figure 4 Frequency of EPDS score at 34-36 weeks antenatal (N=298).

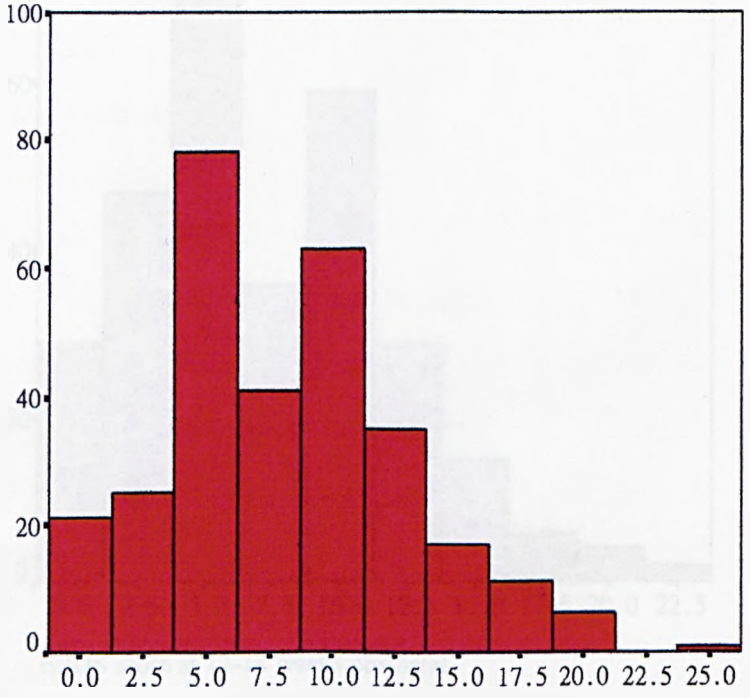


Figure 5 Frequency of EPDS score at 6-8 weeks postnatal (N=298).

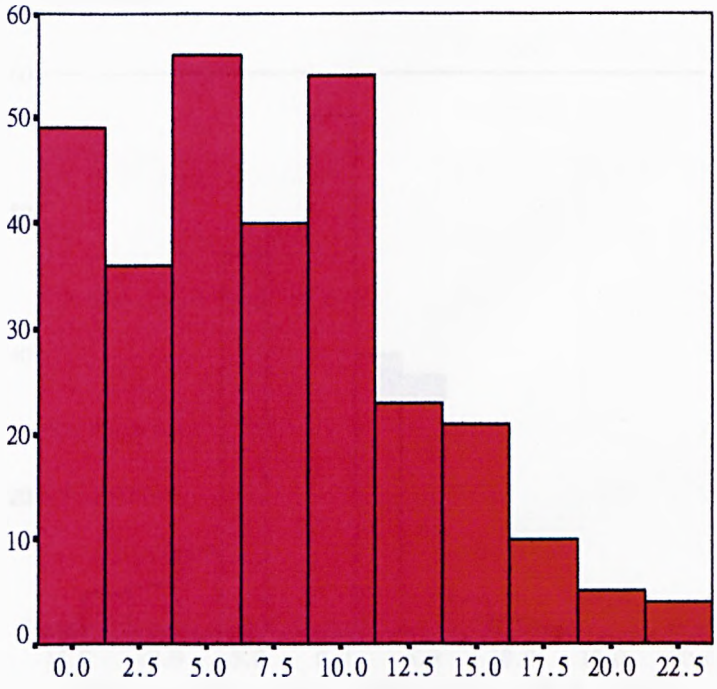


Figure 6 Frequency of EPDS score at 12-14 weeks postnatal (N=298).

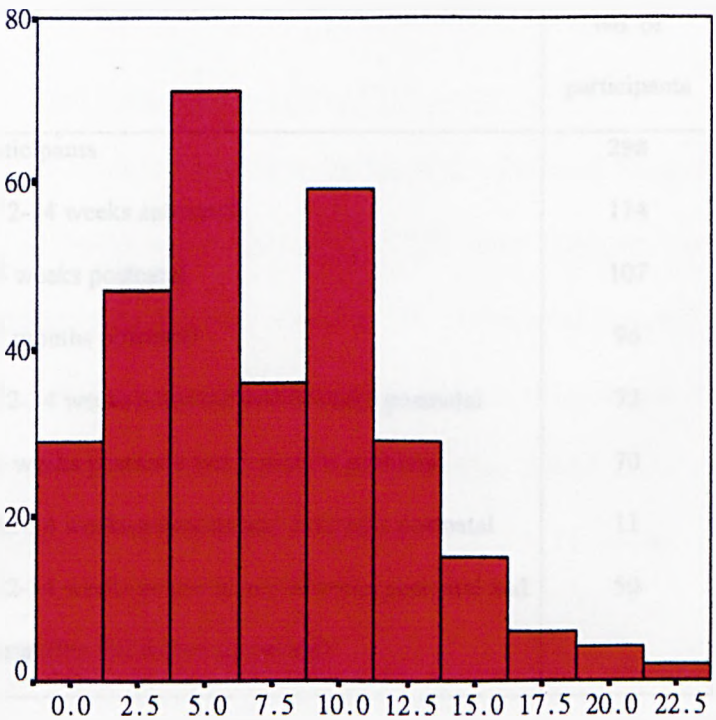


Figure 7 Frequency of EPDS score differences (3 month postnatal – antenatal) (N=298).

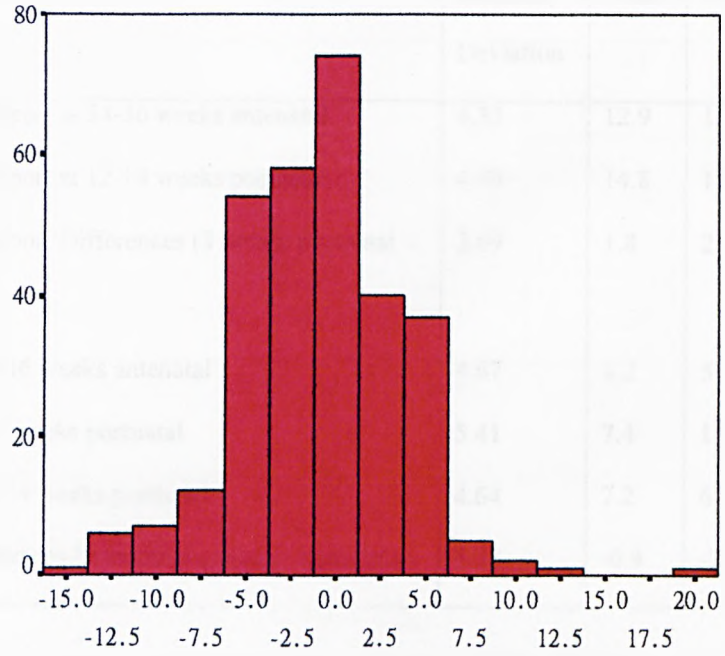


Table 18 Summary of EPDS scores

	No. of participants	Percentage
Total no. of participants	298	100%
EPDS>=10 at 32-34 weeks antenatal	114	38.3%
EPDS>=10 at 6 weeks postnatal	107	35.9%
EPDS>=10 at 3 months postnatal	96	32.2%
EPDS>=10 at 32-34 weeks antenatal and 6 weeks postnatal	72	24%
EPDS>=10 at 6 weeks postnatal and 3 months postnatal	70	23%
EPDS>=10 at 32-34 weeks antenatal and 3 months postnatal	11	3.7%
EPDS>=10 at 32-34 weeks antenatal and 6 weeks postnatal and 3 months postnatal (the full follow up period)	50	17%

The above scores summarise the incidence rate of depression in the study population only.

Table 19 Statistical features of Paternal Support scores and EPDS scores

Type of Scores	Standard Deviation	Mean	Mode	N
Paternal Support at 34-36 weeks antenatal	4.32	12.9	15	298
Paternal Support at 12-14 weeks postnatal	4.99	14.8	15.13	298
Paternal Support Differences (3 month postnatal – antenatal)	3.69	1.8	2	298
EPDS at 34-36 weeks antenatal	4.67	8.2	5	298
EPDS at 6-8 weeks postnatal	5.41	7.4	11	298
EPDS at 12-14 weeks postnatal	4.64	7.2	6	298
EPDS Differences (3 month postnatal- antenatal)	4.48	-0.9	-2	298

4.4 CORRELATION OF PATERNAL SUPPORT VALUES AND EPDS SCORES

4.4.1 Antenatal Paternal Support score and EPDS score

There was a significant correlation between the Paternal Support score and EPDS score, at 34-36 weeks antenatal. EPDS score reduced significantly as Paternal Support increased to a score of 10. At Paternal Support score of 10 or above, the correlation was negative but non-significant and there was no obvious further reduction in EPDS score. Tables 20-22 show the negative correlation between the Paternal Support and EPDS scores at antenatal period. Figures 8 – 9 show the relationship.

Table 20 Correlation between Paternal Support score and EPDS score, at 34-36 weeks antenatal (N=298)

Correlations

			Paternal support score at 34-36 weeks antenatal	EPDS score at 34-36 weeks antenatal
Kendall's tau_	Paternal support score at 34-36 weeks antenatal	Correlation Coeffici	1.000	-.123*
		Sig. (2-tailed)	.	.003
		N	298	298
	EPDS score at 34-36 weeks antenatal	Correlation Coeffici	-.123*	1.000
		Sig. (2-tailed)	.003	.
		N	298	298

**. Correlation is significant at the .01 level (2-tailed).

Table 21 Correlation between Paternal Support score <=9 and EPDS score, at 34-36 weeks antenatal (N=62)

Correlations

			Paternal support score at 34-36 weeks antenatal	EPDS score at 34-36 weeks antenatal
Kendall's tau_	Paternal support score at 34-36 weeks antenatal	Correlation Coefficie	1.000	-.196*
		Sig. (2-tailed)	.	.039
		N	62	62
	EPDS score at 34-36 weeks antenatal	Correlation Coefficie	-.196*	1.000
		Sig. (2-tailed)	.039	.
		N	62	62

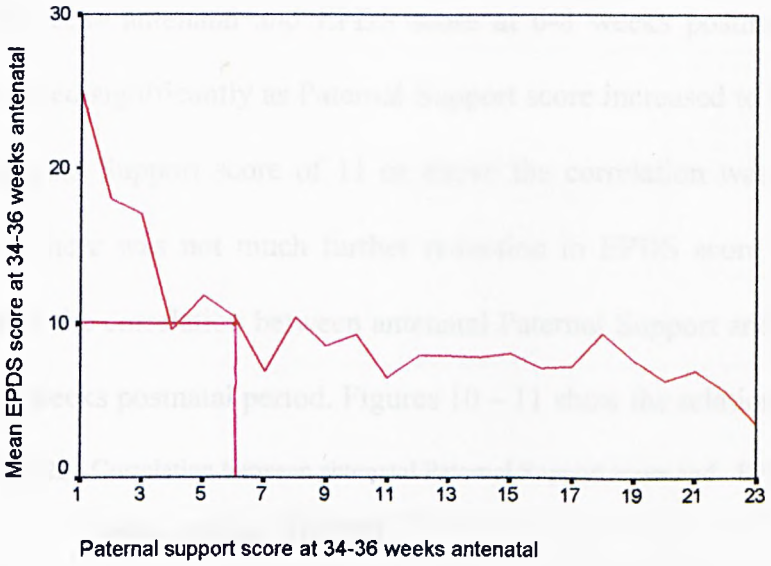
*. Correlation is significant at the .05 level (2-tailed).

Table 22 Correlation between Paternal Support score >=10 and EPDS score, at 34-36 weeks antenatal (N=236)

Correlations

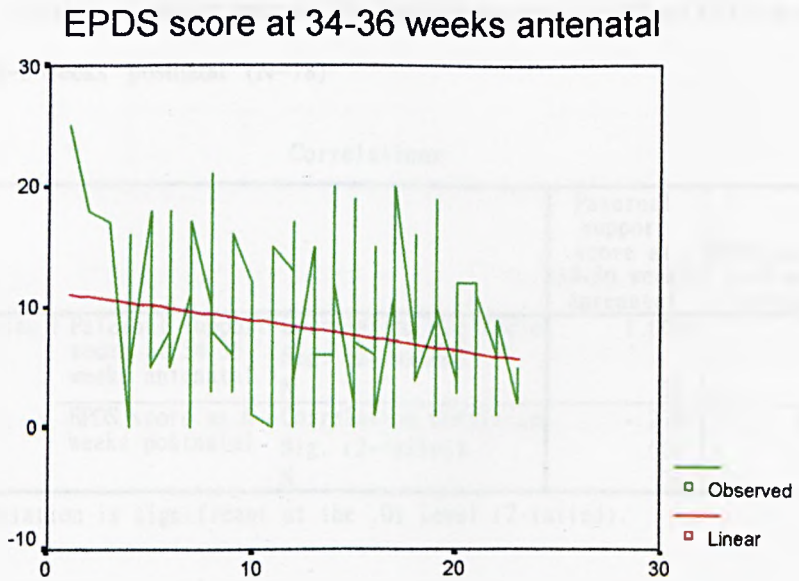
			Paternal support score at 34-36 weeks antenatal	EPDS score at 34-36 weeks antenatal
Kendall's tau_	Paternal support score at 34-36 weeks antenatal	Correlation Coefficie	1.000	-.046
		Sig. (2-tailed)	.	.327
		N	236	236
	EPDS score at 34-36 weeks antenatal	Correlation Coefficie	-.046	1.000
		Sig. (2-tailed)	.327	.
		N	236	236

Figure 8 Relationship between Paternal Support score and EPDS score, at 34-36 weeks antenatal (N=298).



In Figure 8 when EPDS=10 the point of intersection at PSQ axis was 6, indicating a minimum PSQ score of 6 was required to keep the EPDS score to be below 10 (the cut-off point) at 34-36 weeks antenatal.

Figure 9 Linear relationship between Paternal Support score and EPDS score, at 34-36 weeks antenatal (N=298).



4.4.2 Antenatal Paternal Support score and EPDS score at 6-8 weeks postnatal

There was a significant correlation between the Paternal Support score at 34-36 weeks antenatal and EPDS score at 6-8 weeks postnatal. EPDS score reduced significantly as Paternal Support score increased to a score of 11. At Paternal Support score of 11 or above the correlation was non-significant, and there was not much further reduction in EPDS score. Tables 23 - 25 show the correlation between antenatal Paternal Support and EPDS scores at 6-8 weeks postnatal period. Figures 10 – 11 show the relationship.

Table 23 Correlation between antenatal Paternal Support score and EPDS score at 6-8 weeks postnatal (N=298)

Correlations

			Paternal support score at 34-36 weeks antenatal	EPDS score at 6-8 weeks postnatal
Kendall's tau_	Paternal support score at 34-36 weeks antenatal	Correlation Coefficie	1.000	-.089*
		Sig. (2-tailed)	.	.031
		N	298	298
	EPDS score at 6-8 weeks postnatal	Correlation Coefficie	-.089*	1.000
		Sig. (2-tailed)	.031	.
		N	298	298

*. Correlation is significant at the .05 level (2-tailed).

Table 24 Correlation between antenatal Paternal Support score <=10 and EPDS score at 6-8 weeks postnatal (N=78)

Correlations

			Paternal support score at 34-36 weeks antenatal	EPDS score at 6-8 weeks postnatal
Kendall's tau_t	Paternal support score at 34-36 weeks antenatal	Correlation Coefficie	1.000	-.276*
		Sig. (2-tailed)	.	.001
		N	78	78
	EPDS score at 6-8 weeks postnatal	Correlation Coefficie	-.276*	1.000
		Sig. (2-tailed)	.001	.
		N	78	78

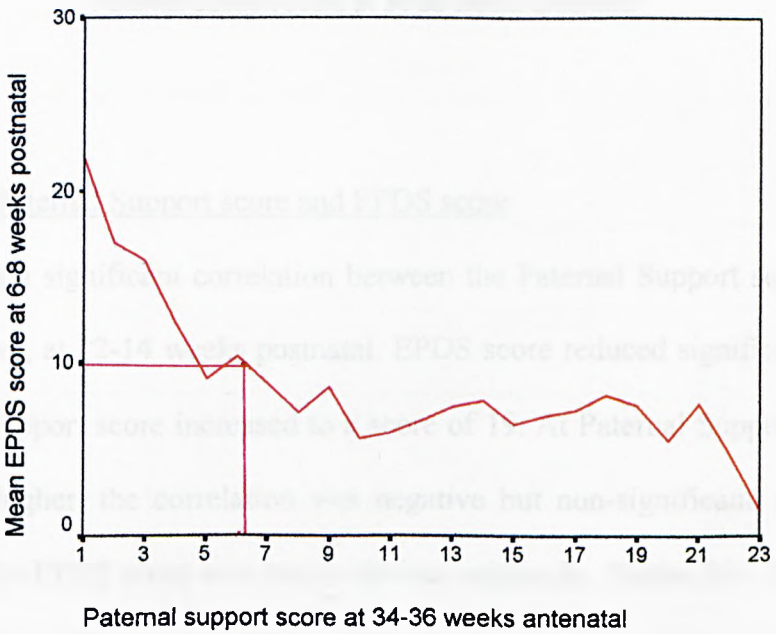
**. Correlation is significant at the .01 level (2-tailed).

Table 25 Correlation between antenatal Paternal Support score >=11 and EPDS score at 6-8 weeks postnatal (N=220)

Correlations

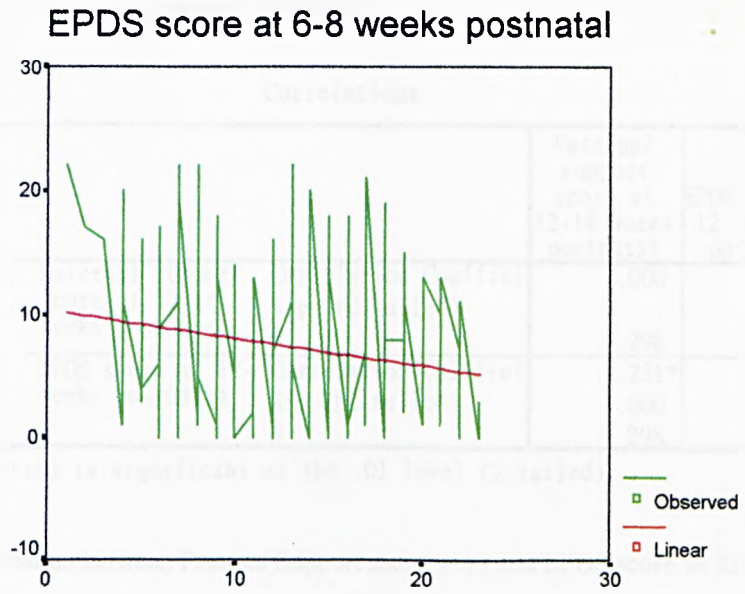
			Paternal support score at 34-36 weeks antenatal	EPDS score at 6-8 weeks postnatal
Kendall's tau_b	Paternal support score at 34-36 weeks antenatal	Correlation Coefficie	1.000	.000
		Sig. (2-tailed)	.	.996
		N	220	220
	EPDS score at 6-8 weeks postnatal	Correlation Coefficie	.000	1.000
		Sig. (2-tailed)	.996	.
		N	220	220

Figure 10 Relationship between antenatal Paternal Support score and EPDS score at 6-8 weeks postnatal (N=298).



In Figure 10 when EPDS=10 the point of intersection at PSQ axis was 6, indicating a minimum PSQ score of 6 was required to keep the EPDS score to be below 10 (the cut-off point) at 6-8 weeks postnatal.

Figure 11 Linear relationship between antenatal Paternal Support score and EPDS score at 6-8 weeks postnatal (N=298).



4.4.3 Postnatal Paternal Support score and EPDS score

There was a significant correlation between the Paternal Support score and EPDS score, at 12-14 weeks postnatal. EPDS score reduced significantly as Paternal Support score increased to a score of 19. At Paternal Support score of 19 or higher, the correlation was negative but non-significant, and the reduction in EPDS score was not as obvious relatively. Tables 26 - 28 show the correlation. Figures 12 – 13 show the relationship.

Table 26 Correlation between Paternal Support score and EPDS score, at 12-14 weeks postnatal (N=298)

Correlations

			Paternal support score at 12-14 weeks postnatal	EPDS score at 12-14 weeks postnatal
Kendall's tau_	Paternal support score at 12-14 weeks postnatal	Correlation Coeffici	1.000	-.231*
		Sig. (2-tailed)	.	.000
		N	298	298
	EPDS score at 12- weeks postnatal	Correlation Coeffici	-.231*	1.000
		Sig. (2-tailed)	.000	.
		N	298	298

**. Correlation is significant at the .01 level (2-tailed).

Table 27 Correlation between Paternal Support score <=18 and EPDS score, at 12-14 weeks postnatal (N=224)

Correlations

			Paternal support score at 12-14 weeks postnatal	EPDS score at 12-14 weeks postnatal
Kendall's tau_b	Paternal support score at 12-14 weeks postnatal	Correlation Coefficie	1.000	-.147*
		Sig. (2-tailed)	.	.002
		N	224	224
	EPDS score at 12-1 weeks postnatal	Correlation Coefficie	-.147*	1.000
		Sig. (2-tailed)	.002	.
		N	224	224

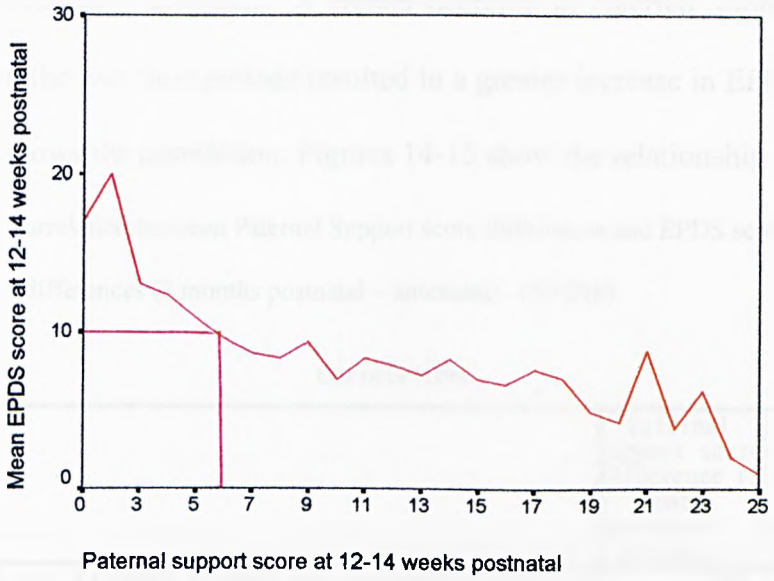
**. Correlation is significant at the .01 level (2-tailed).

Table 28 Correlation between Paternal Support score >=19 and EPDS score, at 12-14 weeks postnatal (N=74)

Correlations

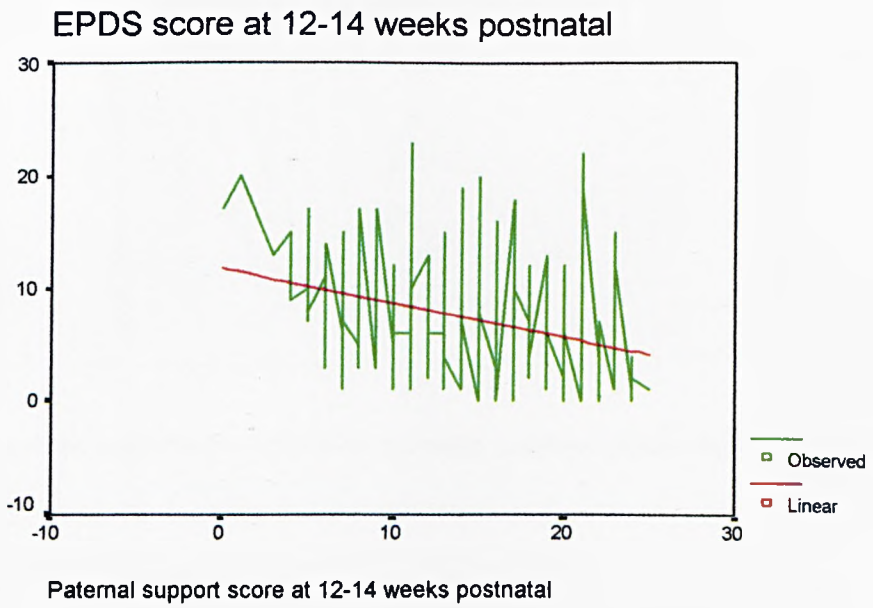
			Paternal support score at 12-14 weeks postnatal	EPDS score at 12-14 weeks postnatal
Kendall's tau_b	Paternal support score at 12-14 weeks postnatal	Correlation Coefficie	1.000	-.072
		Sig. (2-tailed)	.	.417
		N	74	74
	EPDS score at 12-1 weeks postnatal	Correlation Coefficie	-.072	1.000
		Sig. (2-tailed)	.417	.
		N	74	74

Figure 12 Relationship between Paternal Support score and EPDS score, at 12-14 weeks postnatal (N=298).



In Figure 12 when EPDS=10 the point of intersection at PSQ axis was 6, indicating a minimum PSQ score of 6 was required to keep the EPDS score to be below 10 (the cut-off point) at 12-14 weeks postnatal.

Figure 13 Linear relationship between Paternal Support score and EPDS score, at 12-14 weeks postnatal (N=298).



4.4.4 Paternal Support score differences and EPDS score differences

There was a significant correlation between the Paternal Support score differences and EPDS score differences at antenatal and postnatal periods (3 months postnatal – antenatal). A greater decrease in Paternal Support score in between the two time periods resulted in a greater increase in EPDS score. Table 29 shows the correlation. Figures 14-15 show the relationship.

Table 29 Correlation between Paternal Support score differences and EPDS score differences (3 months postnatal – antenatal) (N=298)

Correlations

			Paternal support score difference (3 months postnatal - antenatal)	EPDS score difference (3 months postnatal - antenatal)
Kendall's tau_	Paternal support sco difference (3 months postnatal - antenata	Correlation Coeffici	1.000	-.129*
		Sig. (2-tailed)	.	.002
		N	298	298
	EPDS score differenc (3 months postnatal antenatal)	Correlation Coeffici	-.129*	1.000
		Sig. (2-tailed)	.002	.
		N	298	298

**. Correlation is significant at the .01 level (2-tailed).

Figure 14 Relationship between Paternal Support score differences and EPDS score differences (3 months postnatal – antenatal) (N=298).

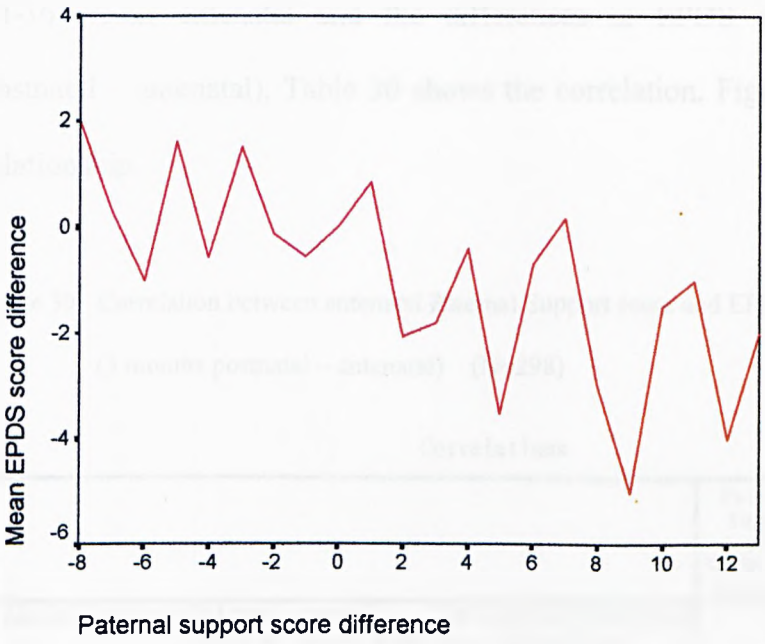
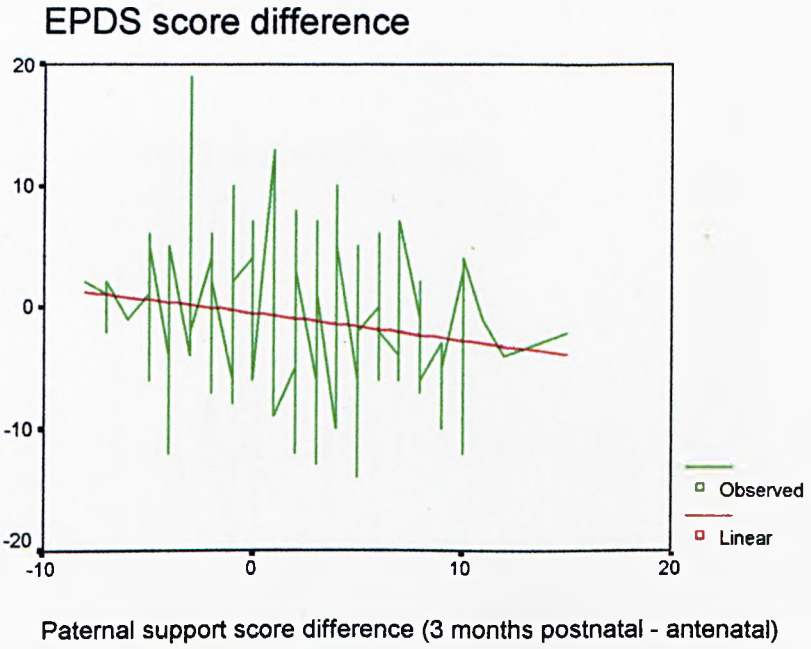


Figure 15 Linear relationship between Paternal Support score differences and EPDS score differences (3 months postnatal – antenatal) (N=298).



4.4.5 Antenatal Paternal Support score and EPDS score differences

There was non-significant correlation between the Paternal Support score at 34-36 weeks antenatal and the differences in EPDS score (3 months postnatal – antenatal). Table 30 shows the correlation. Figure 16 shows the relationship.

Table 30 Correlation between antenatal Paternal Support score and EPDS score differences (3 months postnatal – antenatal) (N=298)

Correlations

			Paternal support score at 34-36 weeks antenatal	EPDS score difference (3 months postnatal - antenatal)
Kendall's tau_b	Paternal support score at 34-36 weeks antenatal	Correlation Coefficie	1.000	.058
		Sig. (2-tailed)	.	.158
		N	298	298
	EPDS score differenc (3 months postnatal antenatal)	Correlation Coefficie	.058	1.000
		Sig. (2-tailed)	.158	.
		N	298	298

Figure 16 Relationship between antenatal Paternal Support score and EPDS score differences (3 months postnatal – antenatal) (N=298)

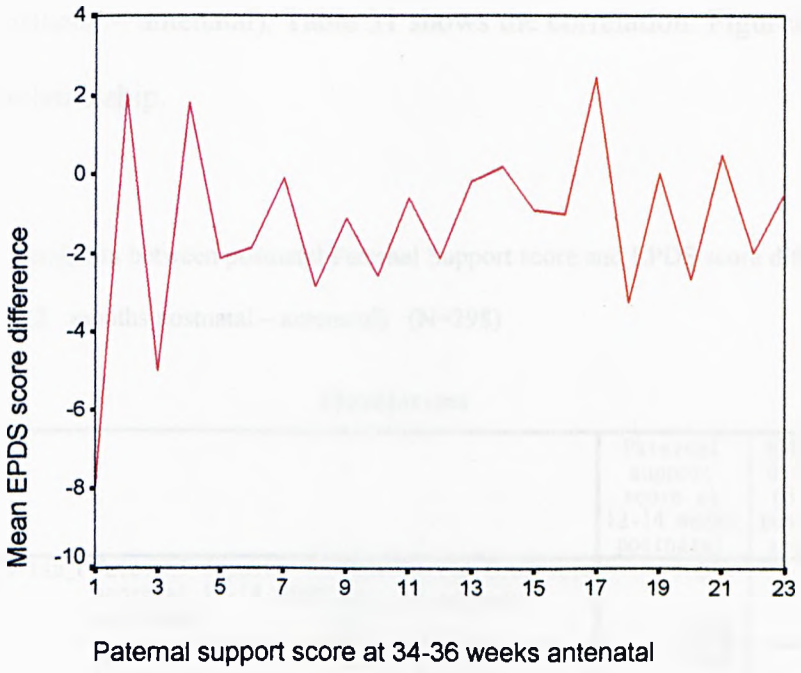
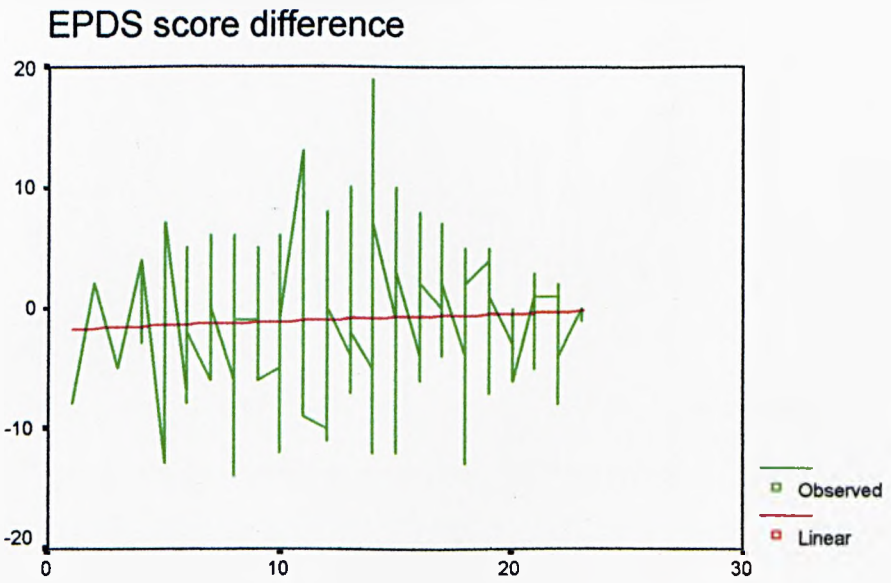


Figure 17 Linear relationship between antenatal Paternal Support score and EPDS score differences (3 months postnatal – antenatal) (N=298)



4.4.6 Postnatal Paternal Support score and EPDS score differences

There was a negative but non-significant correlation between the Paternal Support score at 12-14 weeks postnatal and the differences in EPDS score (3 months postnatal – antenatal). Table 31 shows the correlation. Figures 18-19 show the relationship.

Table 31 Correlation between postnatal Paternal Support score and EPDS score differences (3 months postnatal – antenatal) (N=298)

Correlations

			Paternal support score at 12-14 weeks postnatal	EPDS score difference (3 months postnatal - antenatal)
Kendall's tau_b	Paternal support score at 12-14 weeks postnatal	Correlation Coefficie	1.000	-.042
		Sig. (2-tailed)	.	.308
		N	298	298
	EPDS score differenc (3 months postnatal antenatal)	Correlation Coefficie	-.042	1.000
		Sig. (2-tailed)	.308	.
		N	298	298

Figure 18 Relationship between postnatal Paternal Support and EPDS score differences (3 months postnatal – antenatal)(N=298)

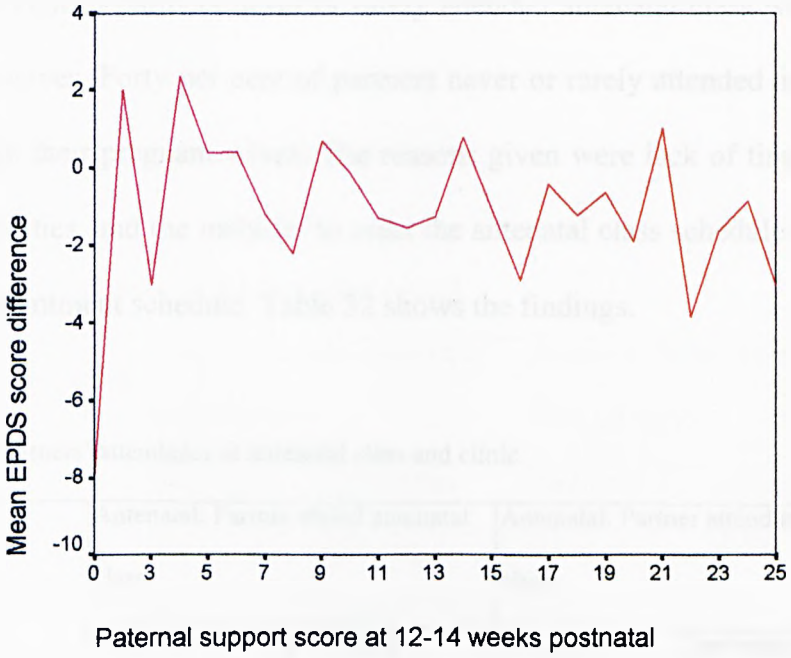
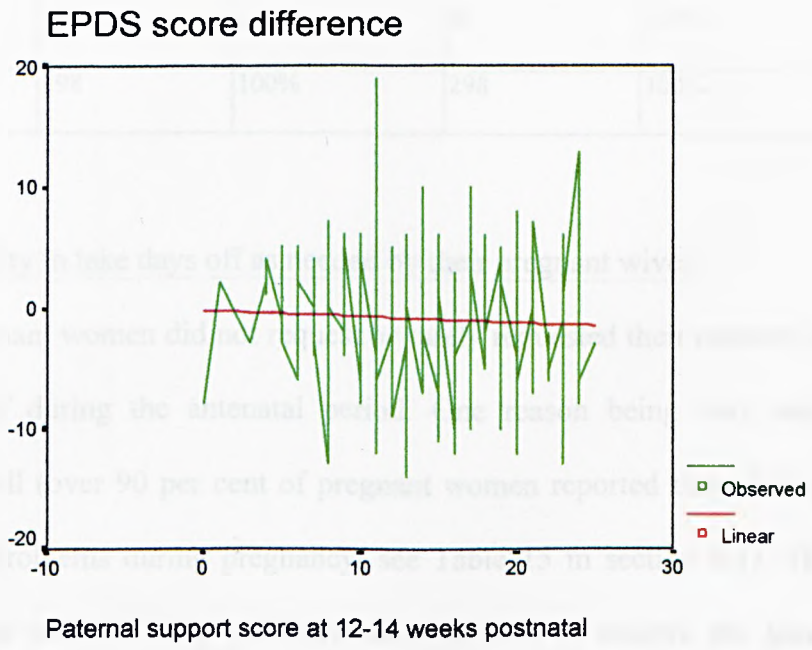


Figure 19 Linear relationship between postnatal Paternal Support and EPDS score differences (3 months postnatal – antenatal) (N=298)



4.5 REVIEW OF PATERNAL SUPPORT VALUES BY ITEM

4.5.1 Partners' attendance at antenatal class and clinics

Sixty per cent of partners never or rarely attended antenatal class with their pregnant wives. Forty per cent of partners never or rarely attended antenatal clinic with their pregnant wives. The reasons given were lack of time, work responsibilities, and the inability to meet the antenatal class schedule and the clinic appointment schedule. Table 32 shows the findings.

Table 32 Partners' attendance at antenatal class and clinic

	Antenatal: Partner attend antenatal class		Antenatal: Partner attend antenatal clinic	
	frequency	percentage	frequency	percentage
Never	148	49.7%	77	25.8%
Rarely	29	9.7%	45	15.1%
Occasionally	62	20.8%	112	37.6%
Very often	25	8.4%	41	13.8%
Every time	34	11.4%	23	7.7%
Total	298	100%	298	100%

4.5.2 Partners' ability to take days off as needed by their pregnant wives

A lot of pregnant women did not request or rarely requested their partners to take time off during the antenatal period. One reason being they were physically well (over 90 per cent of pregnant women reported they did not have health problems during pregnancy, see Table 15 in section 4.1). The second reason was that they preferred their partners to reserve the leave entitlement to after childbirth. The third reason was that the couple feared

that the partners might lose their job if they requested leave too often in the current economic climate. Partners were able to take leave occasionally or more often during the postnatal period (58 per cent) due to reservation being made as mentioned, when compared to the same at antenatal period (34 per cent). Table 33 shows the details.

Table 33 Partners' ability to take days off as needed

	Antenatal: Partner able to take days off work		Postnatal: Partner able to take days off work	
	frequency	percentage	frequency	percentage
Never	54	18.1%	22	7.4%
Rarely	60	20.1%	70	23.5%
Occasionally	68	22.8%	103	34.6%
Very often	33	11.1%	71	23.8%
Every time	83	27.9%	32	10.7%
Total	298	100%	298	100%

4.5.3 Time spent together everyday by the couples

There was a higher percentage of couples who could spend more than 4 hours together during the postnatal period (60 per cent) than during the antenatal period (54 per cent). New mothers reported their partners would try to finish work and return home earlier to assist. Table 34 illustrates the findings.

Table 34 Time spend together everyday

	Antenatal: Time spend together everyday		Postnatal: Time spend together everyday	
	frequency	percentage	frequency	percentage
Less than an hour	12	4.0%	13	4.4%
1-2 hours	41	13.8%	35	11.7%
More than 2 hours	83	27.9%	73	24.5%
More than 4 hours	162	54.3%	177	59.4%
Total	298	100%	298	100%

4.5.4 Partners' company in the maternity ward at the time of their wives delivery

About half of the pregnant women did not wish their partners to stay with them in the maternity ward at the time of delivery. The reasons were the wives felt embarrassed, or the partners felt nervous about attending childbirth. In addition, the wives believed their partners would not be available at the anticipated time of childbirth. It is a Chinese tradition that men should stay away from childbirth, though this tradition is evolving. In the hospitals in Hong Kong, only partners who have attended antenatal classes are allowed to attend childbirth. This applies to normal deliveries only. Since 50 per cent of partners never attended antenatal classes (Table 32 in section 4.5.1), and about one-third of the deliveries were assisted (Table 15 in section 4.1), this meant that only about 30 per cent of the partners could stay in the maternity ward with their wives at the time of their deliveries. Table 35 has the findings.

Table 35 Partner's company in maternity ward at delivery

	Antenatal: wish partner in the maternity ward at delivery		Postnatal: partner in the maternity ward at delivery	
	frequency	percentage	frequency	percentage
Yes	155	52%	89	29.9%
No	143	48%	158	53%
No, Caesarean section	-	-	51	17.1%
Total	298	100%	298	100%

4.5.5 Partners' working hours per day

Overall the working hours per day for partners showed a decrease which was perhaps due to the reduced working capacity in Hong Kong as a result of economic downturn. Table 36 shows the details.

Table 36 Partners' working hours per day

	Antenatal: hours partner spend at work per day		Postnatal: hours partner spend at work per day	
	frequency	percentage	frequency	percentage
12 hours or more	47	15.8%	40	13.4%
More than 10 hours	95	31.9%	94	31.5%
More than 8 hours	105	35.2%	88	29.5%
8 hours	42	14.1%	63	21.1%
Less than 8 hours	9	3%	13	4.4%
Total	298	100%	298	100%

4.5.6 Partners' stress at work:

The responses in Table 37 suggested that there was increased stress at work for the partners in the postnatal period relative to the antenatal period.

Table 37 Partners' stress at work

	Antenatal: partner have stress at work		Postnatal: partner have stress at work	
	frequency	percentage	frequency	percentage
Over stressed	3	1.0%	3	1.0%
A lot of stress	49	16.4%	59	19.8%
Yes, but reasonable	216	72.5%	219	73.5%
No, not really	30	10.1%	17	5.7%
Total	298	100%	298	100%

4.5.7 Partners' ability to take leave at first-month after childbirth

Table 38 shows that 80 per cent of pregnant women had wished their partners to take leave to keep them company during the first-month after childbirth. At the postnatal period, only 49 per cent of the partners could occasionally or often take leave for the said purpose. Some new mothers reported that even though their partners could take leave and stay at home to help, due to their inadequate knowledge in baby care, the new mothers did not find them helpful in solving problems, nor alleviating their stress in this aspect.

Table 38 Partners' ability to take leave at first-month after childbirth

	Antenatal: wish partner to take leave		Postnatal: partner able to take leave	
	frequency	percentage	frequency	percentage
Yes	236	79.2%	-	-
No	62	20.8%	76	25.5%
Rarely	-	-	75	25.2%
Occasionally	-	-	82	27.5%
Often	-	-	65	21.8%
Total	298	100%	298	100%

4.5.8 Partners' participation in baby care

Because of having to go to work during the day, it was reported that more than 80 per cent of the partners did not wake up, or rarely, or occasionally woke up to help when the baby cried at night. The burden stayed with the new mothers who had to cope with the same problem (baby crying) during the day in addition to other baby care and household activities. Only 26 per cent of partners often or very frequently took part in looking after the baby. Table 39 shows the findings.

Table 39. Partners' participation in baby care activities.

	Postnatal: partner take part in looking after baby		Postnatal: partner wake up to help at night	
	frequency	percentage	frequency	percentage
No	27	9.1%	63	21.1%
Rarely	88	29.5%	80	26.8%
Occasionally	104	34.9%	101	33.9%
Often	67	22.5%	41	13.8%
Very frequently/always	12	4.0%	13	4.4%
Total	298	100%	298	100%

4.5.9 Sources and priority of support perceived by new mothers

Partners' support ranked top of the list and remained at the same first priority before and after childbirth. It was reported that the awareness/perception of social support during the postnatal period was seen as more important, in particular, the support from parents and parents-in-law (postnatal: 74.5 per cent v antenatal: 53.3 per cent), who have adequate knowledge and experience in baby care. Friends were playing the role of confidant for the new mothers, whose social activities had become limited due to being fully occupied by a needy baby. Table 40 illustrates the new mothers' perception on sources of support.

Table 40 Sources of support

	Antenatal: sources of support		Postnatal: sources of support	
	frequency	percentage	frequency	percentage
Health care professionals	57	19.1%	43	14.4%
Partner/husband	224	75.2%	231	77.5%
Own parents	110	36.9%	146	49.0%
Parents-in-law	49	16.4%	75	25.5%
Brothers & sisters	12	4.0%	57	18.8%
Other family members	5	1.7%	24	8.1%
Maid	3	1.0%	23	7.7%
Friends	23	7.7%	48	16.1%
Others e.g. social worker	10	1.4%	7	2.3%

4.6 REVIEW OF PATERNAL SUPPORT VALUES BY ITEM (continued)

4.6.1 Adequacy of support by partners

By reviewing the responses in Table 41, more new mothers felt that they had received 'not enough' or 'not quite enough' support from their partners at the postnatal period (23 per cent) than at antenatal period (14 per cent). It may be because the partners' knowledge in postnatal care was inadequate and also due to the new mothers having had higher expectations during the postnatal period than at any other times or during pregnancy, hence imposing extra stress to their partners.

Table 41 Adequacy of support by partners

	Antenatal: enough support from partner		Postnatal: enough support from partner	
	frequency	percentage	frequency	percentage
Not enough	19	6.4%	22	7.4%
Not quite enough	22	7.4%	48	16.1%
Moderately enough	169	56.7%	148	49.7%
Enough	88	29.5%	80	26.8%
Total	298	100%	298	100%

4.6.2 Reasons for inadequate support

The first reason for inadequate support was the partners had to go to work because they did not have legitimate paternity leave. The second reason was the partners did not have time to help. A third reason was the partner did not know how to help. This echoes the previous findings in Table 32 (section 4.5.1) that 50 per cent of the partners did not attend antenatal class due to work and time issues. The cultural resistance of Chinese men to take part in baby care was also reflected in the report (5.7 per cent). Table 42 lists the reasons.

Table 42 Reasons for inadequate support from partners/husbands

	Antenatal: reason for inadequate support		Postnatal: reason for inadequate support	
	frequency	percentage	frequency	percentage
Not willing to take responsibilities	2	0.7%	7	2.3%
Insufficient knowledge	19	6.4%	53	17.8%
Do not have time	33	11.1%	93	31.2%
Has to work	40	13.4%	132	44.3%
Marital relationship not good	10	3.4%	12	4.0%
Finding it troublesome to take care of the baby	-	-	17	5.7%
Other reasons e.g. finance issue	9	3.0%	16	5.4%

4.6.3 Feeling of depression

Table 43 shows that the same percentage of women (58 per cent) reported they had no feeling of depression at both antenatal and postnatal periods. There was a higher uncertainty recorded in the postnatal period, which is shown by the number of 'don't knows' (25 per cent). This deserves more attention and further investigation.

Table 43 Feeling of depression

	Antenatal: feeling of antenatal depression		Postnatal: feeling of postnatal depression	
	frequency	percentage	frequency	percentage
Yes, I feel so.	88	29.5%	49	16.4%
No, I don't feel so.	174	58.4%	171	57.4%
Don't know.	35	11.7%	60	20.1%
Don't know, don't know about postnatal depression	-	-	16	5.4%
Don't want to answer.	1	0.3%	2	0.7%
Total	298	100%	298	100%

4.7 COMPARISON OF PATERNAL SUPPORT RECEIVED BY THE DEPRESSED GROUP AND THE NON-DEPRESSED GROUP

A Chi-Square test was applied to the differences in antenatal paternal support received by the depressed women (those who had antenatal EPDS score >=10) and the non-depressed women (those who had antenatal EPDS score <10), to find out whether the differences were statistically significant. Similarly, the test was also applied to the differences in postnatal paternal support received by the postnatally depressed and postnatally non-depressed groups at 3 months after childbirth.

It was found that relative to the non-depressed individuals, the depressed women received less paternal support from their partners. The differences were statistically significant in the following support items (Appendix 10):

Antenatal: attend more antenatal class

Antenatal: attend more antenatal clinic

Antenatal: spend more time together with their wives everyday

Antenatal: work for less number of hours per day

Antenatal: have less stress at work

Antenatal: provide enough support to their wives

Postnatal: able to take days off work more frequently

Postnatal: spend more time together with their wives everyday

Postnatal: have less stress at work

Postnatal: participate more in looking after the baby

Postnatal: wake up more at night to help

Postnatal: provide enough support to their wives

The differences in other paternal support items between the depressed and the non-depressed groups also demonstrated the same trend, though they were statistically non-significant.

4.8 RESULTS SUMMARY

4.8.1 There was a significant correlation between Paternal Support scores and EPDS scores during antenatal and postnatal periods. Lower Paternal Support scores were associated with higher EPDS scores.

4.8.2 New mothers perceived paternal support to be more necessary during postnatal period than during the antenatal period. The mean Paternal Support score was higher at 14.8 postnatally, compared to 12.9 antenatally. Greater increases in Paternal Support scores (postnatal – antenatal) resulted in a greater decrease in EPDS scores (postnatal – antenatal) in between the antenatal and postnatal periods. The correlation between the differences was significant.

4.8.3 Figure 8 (section 4.4.1), Figure 10 (section 4.4.2) and Figure 12 (section 4.4.3) show that the minimum PSQ score required was 6 in order to keep the EPDS score to be below 10, which was the cut-off point to differentiate between the depressed and the non-depressed women in the study. The impact of paternal support on postpartum depression had a saturation point, beyond which, further enhancing the degree of paternal support may not have any more significant impact on EPDS score. At antenatal period, the saturation point of paternal support was at a score of 10 and above. At 6

weeks postnatal, the saturation point of paternal support was at a score of 11 and above. At 3 months postnatal, the saturation point of paternal support was at a score of 19 and above.

4.8.4 Partners' work responsibilities and lack of time to provide the new mothers with extra support were the top two complaints. Inadequacy in knowledge of postnatal care and baby care were also prime complaints on their partners by the new mothers. Therefore, support perceived to be practical and important came in the form of the partners being able to take leave from work to attend antenatal class and education programs in postnatal care and baby care; to have better communication with the new mothers (Misri, 2000), to prove to them that they were capable of providing them with extra support, and alleviating their stress in their transition to motherhood.

4.8.5 The depressed women (those who had EPDS score >=10) had received less paternal support during antenatal period and postpartum period relative to the non-depressed individuals (those who had EPDS score <10) at the same periods. The differences were found to be significant for the majority of the paternal support items (Appendix 10).

The next chapter will begin with a discussion of the findings of the study and its implications, followed by a recommendation of changes in antenatal and postnatal education for both pregnant women and their partners. It will describe the challenges faced by health care professionals, social workers and Chinese women in Hong Kong in seeking extra resources from the

Government and society to support the recommended changes. Finally, an appraisal of the study design and methodology will be brought forward together with a recommendation of future studies.

CHAPTER 5

DISCUSSION, RECOMMENDATION AND CONCLUSION

In Chinese culture, when a person is experiencing a life threatening or chronic illness, the spouse is the most likely caretaker and support provider, though other family members and friends can be helpful as well. Also, research studies have described support providers as consisting of friends and family, with support from the spouse being particularly important during illness and transitional periods (Norbeck and Anderson, 1989; Morgan, 1997; Misre, 2000). Pregnant women encounter new challenges in their own physical well being. In addition, they will enter into a postpartum stage where they must continue to deal with routine life situations, and taking on additional duties of the physical and emotional care of an infant. During pregnancy, Norbeck and Anderson (1989) found that a woman's spouse was the most important source of support. Stemp et al. (1986) found that maintaining intimate relationships enhances one's ability to cope with life stress. As discussed before, modern Hong Kong women have been transformed in the past decade by better education, increased participation in the work force and financial independence. Consequently, their expectation and perception of spousal support is evolving, particularly during transitional periods such as pregnancy and motherhood. The present study sought to examine the relevance of the involvement of a Chinese woman's partner to the development of postpartum depression, which had been demonstrated to have an estimated prevalence rate of 11 per cent in Hong Kong (Lee, 2001).

5.1 DISCUSSION OF FINDINGS

5.1.1 Paternal support was deemed necessary and important in reducing the risk of women having postpartum depression

As can be seen in Tables 20 (section 4.4.1), Table 23 (section 4.4.2), and Table 26 (section 4.4.3) there was a significant correlation between paternal support available and the level of depressive symptomatology in women during pregnancy and postpartum period. Less paternal support available to a woman (in the areas of day-to-day concerns, companionship and baby care) increased her risk of postpartum depression during the transition period to motherhood. In addition, it was necessary for paternal support to continue to a minimal postpartum period of 3 months when the depression symptoms were still above the cut off EPDS score of 9/10 for 32.2 per cent of the participants (Table 18 in section 4.3).

5.1.2 Paternal support was deemed necessary at both antenatal and postnatal periods, particularly in the first three months postpartum

Men in Hong Kong do not have legitimate paternity leave. In the light of the current economic turmoil, the unemployment rate in Hong Kong has risen from 5.7 per cent to a record high of 7.8 per cent in a twelve-month period. Husbands were in great fear of losing their jobs and would only reserve their already limited entitlement of annual leave (10-20 days in average) to the postpartum period or to a contingency, when their wives and the newborn baby were more prone to the needs of immediate and persistent assistance. This phenomenon of expecting and requiring more paternal support at postpartum is confirmed by the findings listed in Table 19 (section 4.3),

when the mean of paternal support at postpartum was two points higher than in the antenatal period. This finding also echoed the results illustrated in Table 29 (section 4.4.4) where there was a significant correlation between the Paternal Support score differences and EPDS score differences during antenatal and postnatal periods. The greater the decrease in paternal support, the greater the increase in risk of postpartum depression symptoms in between the two periods. Thus, when looking at the situation in Hong Kong, the study results suggest that more paternal support is necessary at the postpartum for a period of at least 3 months.

5.1.3 The type of paternal support deemed essential

Study findings (Table 42 in section 4.6.2) indicated that the reason most women felt they did not have enough support from their partners was due to their partners having to go to work and not having time to offer companionship and practical help at home. Therefore, the women were, most importantly, looking for their partners' presence in the household and the amount of time that they were available to provide extra assistance to them at home. In the telephone interviews, some women reflected that they wished their partners could take leave on a half-day basis and stay at home to support them during the first month postpartum period. Some women wished their husbands could finish work on time and return home to give them assistance in looking after the siblings. Unfortunately some women also reflected a problem that since their husbands did not have time to attend antenatal classes, they had neither sufficient knowledge nor experience to help. Such feedback was quantified in Table 42 (section 4.6.2) where

"insufficient knowledge" was one of the top three reasons cited by the participants as not having enough support from their partners. Thus knowledge and skills in antenatal care, postnatal care and baby care were the specific support items perceived to be essential by the participants. However, educating the partners how to provide extra support to their wives in easing their transition to motherhood was equally important. The timing in providing such education was vital in achieving maximal effectiveness.

5.1.4 The level of paternal support deemed necessary

The study reported that a minimum score of 6 for paternal support requirement was needed on the PSQ before and after childbirth in order to reduce the depressive symptomatology to a score below 10 on the EPDS. It also reported a saturation point for paternal support beyond which no matter how much paternal support was increased, there was no further significant impact on the depression symptoms assessed by EPDS. During the antenatal period, such a saturation point for paternal support was found to be at a score of 10 or above, whereas during the postpartum period, such a saturation point for paternal support was found to be at a score of 19 or above. These findings of saturation points echoes the findings in section 5.1.2 that more paternal support was required by the women at postpartum than during the antenatal period. In future when using the Paternal Support Questionnaires (PSQ) as a tool to measure paternal support, a cut-off point of 6 may be used to differentiate the "well-supported" group and the "not well-supported" group of women. The optimal levels of paternal support required is recommended

to be at a score of 9 or below, and 18 or below, during antenatal and postnatal periods respectively.

5.1.5 Identification of differences in paternal support received by the depressed and the non-depressed women.

The depressed group of women clearly received less paternal support from their partners at the antenatal stage and at postpartum relative to the non-depressed individuals during the same periods. The majority of the differences identified were statistically significant. This therefore adds synergy to the aforementioned findings that lower paternal support was associated with higher risk of prenatal and postnatal depression. It also calls for an increase in practical/instrumental support to the individuals who experience higher levels of depressed mood during perinatal period.

5.2 IMPLICATION OF RESULTS

This study found that increased paternal support, particularly during the first 3-month postnatal period, reduced the risk of postpartum depression in Chinese women in Hong Kong. Such findings have the following implication:

5.2.1 Recognition of a potential burden to the family and society

Research (Cox, 1993) has demonstrated that the highest risk period for developing depression is during the first 3-month postnatal period, and that 76 per cent of women who develop postpartum depression over a 6-month period report that their depression began less than 5 weeks after delivery. Based on an 11 per cent prevalence and an annual delivery rate of 60,000, it

is estimated that each year Hong Kong has about 3,600 new cases of major depression and 3,000 minor depression among new mothers (Lee, 2000). With the limited attention that postnatal psychological well-being has received from the Hong Kong medical profession and the general public, it has become increasingly clear that these incidents of depression may have escaped medical attention and therefore remained hidden in the community. According to the findings of the present study (Table 43 in section 4.6.3), 25 per cent of participants have little or no knowledge of depression, and may misunderstand the mental illness as poor adjustment to sleep deprivation, childbearing and parenthood (Lee, 2000). This undetected postnatal depression may have caused distress and personal suffering to the mother. Further, it may have had an adverse impact on her partner and children (Areias, 1996; Ballard, 1996; Murray, 1997a), eventually becoming a burden to the family and to society (Boath, 1996; Curham, 2000).

5.2.2 Timely management of the potential burden

With the effort of local researchers, epidemiological data on postpartum depression has been established in Hong Kong (Lee, 2001). This data has suggested that more resources should be invested to establish specialized health care and education services for pregnant women and their partners (Cheng, 1994; Lee, 2000; Lee, 2001). During interviews, many women reflected that when they felt depressed they would try to overcome their depression by several means, such as going for a walk, talking to friends, talking to their husbands (if they were around), or simply crying aloud. In Hong Kong, many partners have to be out of town very often because of

work. In fact it is not uncommon for pregnant women to be left alone at home for most of the time, which indeed causes strain, especially during first-time pregnancy. Currently, there are routine screening programs in several major hospitals to assess the depressive symptomatology of pregnant women. The positive experience with the Paternal Support Questionnaires (PSQ) in the present study has demonstrated that they can provide a useful dimension to antenatal and postnatal paternal support measurement. The questionnaires may also present an opportunity for clinic staff to begin discussing topics with women, such as marital relationships, which are sometimes difficult to raise. Consequently, with an early identification of women at potential risk of postpartum depression, especially those not receiving adequate paternal support from their partners, their referrals to social workers and community services providers for assistance could be made earlier. In this way a potential problem to the family may be effectively alleviated.

5.2.3 Paternal support as a reflection of marital relationship

The degree of paternal support available to a woman may reflect the quality of the marital relationship between her and her partner. As discussed in previous literature, marital relationship is one of the key risk factors to postnatal depression (Beck, 2001). Thus if marital difficulties are identified, it will be necessary to clarify the specific problems, and whether they contributed to, or were a consequence of, the postnatal depression. It is important to involve the spouse at this stage because he may be unaware of the specific problems, or he may be unaware that his wife is suffering from

postnatal depression. In Chinese culture it is not surprising to see that many partners do not appreciate how demanding it is to look after a child, and do not realize their sharing of household responsibilities would help to improve the relationships at home. Table 42 (section 4.6.2) shows that close to 6 per cent of partners found it troublesome to take care of the baby. In these circumstances, educating the husbands about postnatal depression and the role they may take in providing instrumental support may lead to an improvement in both the relationship and the depression. If marital problem is the consequence of postnatal depression both partners will need educational and social support, as well as reassurance that the relationship will improve when the depression disappears. Should this educational approach fail then more intensive marital therapy is necessary.

5.2.4 Consideration of providing paternity leave

In Scandinavian countries paternity leave is available routinely to fathers (Ballard, 1996). This is an extremely helpful benefit for couples, especially when one or both partners have postnatal depression (Morgan et al., 1997; Misri et al., 2000). However, paternity leave is still a very debatable issue in many countries. In Hong Kong, the prevalence estimate of postnatal depression is 11 per cent (Lee, 2001). The potential costs to the society by undetected postnatal depression may be enormous. In addition, the illness may cause distress and suffering to the mothers and their families. It is indeed necessary for the Government and employers, as well as men and their families to work together to find out the best possible arrangement for

enhancing paternal support to women during their perinatal periods, such as providing paternity leave to their partners.

5.2.5 Routine documentation of Paternity Support Questionnaires (PSQ)

To monitor depression symptoms in women during antenatal and postnatal periods, several major hospitals are running screening programs in their O&G department by using the validated Chinese EPDS. With the findings in the present study, it may be worthwhile to incorporate the PSQ in routine documentation. These screening services, however, are not based on incremental resources, and all team members provide service voluntarily. These services have proven to be welcomed by the mothers. Nursing officers, midwives and O&G consultants have demonstrated themselves to be very able and empathic counselors. To sustain the enthusiasm of these voluntary members and to maintain the effectiveness of these programs, extra resources are necessary to turn these programs into a mandatory component of obstetric care in Hong Kong.

5.2.6 Development of an obstetric care service

As indicated by epidemiological study (Lee, 2001), postnatal mental illness represents a large group of women in Hong Kong. Such findings suggest that more resources should be invested to establish specialized health care services for postpartum women. These women have different needs compared with other psychiatric patients in that any services or facilities designed for them have to take into consideration their baby. Therefore, there should be different in-patient care and daily routine. Professionals providing

these services have to have special skill sets and have to give high priority to the needs of the child. They may need to work closely with midwives, health visitors, obstetricians and child care social workers. A postnatal mental illness service must ensure that all women suffering from a psychiatric disorder associated with childbirth have access to a specialist service, a psychiatrist with a special interest in their condition, a specialist community nursing team and specialist mother and baby units should women require admission. Community psychiatric nurses are an essential part of a postnatal service. It may be worthwhile arranging community nurses to provide home visits to severely depressed women, which can be an alternative to admission, provided that the home environment is appropriate. In which case the women would probably perceive the community nurse as there for her and her baby, and would therefore treat her as a confidant. Community psychiatric nurses are an invaluable resource, especially if they know about the special emotional needs of postnatal women. The mother and baby unit would require the services of a liaison health visitor and supplementary services by pediatrician and child psychiatrist if and when necessary. Primary care teams should have specialist counselors working in the clinic. (Information source: Cox, 1994)

Some of these services are already available in key government hospitals and are provided by voluntary health care workers (staff). It is therefore important to recognize their effort and legitimize the services, so that they become a mandatory part of obstetric care services in all hospitals in Hong Kong.

5.3 RECOMMENDATION FOR FUTURE HEALTH CARE EDUCATION STRATEGY AND PLANNING IN REDUCING THE RISK OF POSTPARTUM DEPRESSION IN HONG KONG

Years ago, it was common for women to have a 'lying-in' period of a month to recover from the birth. Or for Chinese women to have traditional 'doing the month' privilege after childbirth. Today, when women do not have sufficient knowledge and information on the realities of parenting, and when they do not achieve the ideal of a joyfully coping mother, which is the image projected by the media, they may believe themselves to be inadequate. Unequal shares in parenting, short maternity leave, non-existing paternity leave, inadequate nursery provision or suitable childcare arrangements for working women are current issues in Hong Kong (Lee, 2000). Changing the social climate in Hong Kong is not easy, but helping women to recognize their own needs and to believe that these are valid, can empower them to lobby for change. Professionals and researchers in the field, the media, and indeed women themselves, all have a role to play in bringing about improvements in care, health education and changes in attitudes. As indicated in previous chapters, the awareness of postnatal depression in Hong Kong at present is far from ideal. Undetected postnatal illness can be a potential social and health problem to Hong Kong society. To remedy the issue the following are recommended educational activities on postnatal mental illness that hopefully would be incorporated into future education planning in Hong Kong.

5.3.1 Education of school children

Many children in Hong Kong today grow up in small nuclear families with little experience of the impact a baby can have on day-to-day life, both on a practical and emotional level, especially those children from a single-child family. 'Parentcraft' programs for teenagers of both sexes, including the practicalities of childrearing and family life, would be a useful addition to the school curriculum.

5.3.2 Education of health professionals

An understanding of the concepts, potential causes and consequences of perinatal depression is an absolute requirement for all practicing doctors and essential learning for all medical students (Cox, 1994). When teaching undergraduates in general practice about anxiety and depression, students should be guided to look into issues like problem prevention, early intervention and steps to be taken to avoid recurrence of the problem. When teaching specifically about postnatal depression, attention should be directed to the needs of pregnant women and their partners. Since the detection of postnatal mental illness usually occurs in primary care settings, it is thus an ideal place to consider issues such as continuity of care, and to plan individualized care programs. Training programs should be provided to primary care teams on how to identify perinatal depression and its risk factors, in order to prevent the illness or to lower its risk. Health visitors should attend post-basic training courses in combination with developing their counseling skills. Health visitors should be equipped with information about the nature and effects of postnatal depression and its possible origins,

and the value of preventive strategies. All health professionals involved in the care of childbearing women, including hospital staff (obstetricians and midwives), should be given specific training in the psychological needs of perinatal women. Psychiatrists, psychologists, psychiatric nurses and social workers are likely to receive referrals of depressed women from primary care, thus they should also share the understanding of the nature of postnatal depression and factors which are associated with the origins and maintenance of the condition. Health professionals who wish to perform non-directive counseling to depressed women should receive extra training, because a counselor is a professional confidant who can provide social and emotional support. Additionally, health professionals should be encouraged to access up-to-date reading material on postpartum depression such as the Marcé Society Distance Learning Package (Marce Society, 2000), although input from an educator with specialist knowledge is also important. Finally, specialized study days, the media and an informed body of literature are all relevant sources of information.

5.3.3 Education of parents

Some parents comment that current antenatal preparation has only focused on the practical aspects of pregnancy, birth and basic infant care. Some fathers also complain of feeling 'left out', or that their own role is not clear (Nolan, 1994). Educators are recommended to conduct regular surveys with pregnant and postpartum women, as well as their partners, to identify their needs in antenatal and postpartum education (Ruchala, 2000). The teaching checklists should be reviewed periodically according to their update needs.

Health care educators in Hong Kong should be trained to work within a framework of adult learning styles. Within this framework, women and their partners should be encouraged to interact with the educators, and any feedback obtained should be used for program evaluation and future improvement of the service. Educators are also recommended to conduct education classes for men only to address the special needs of fathers during their transition to parenthood. Traditionally, Chinese fathers are conservative in expressing their emotions, particularly in transition periods such as during pregnancy, birth and at postpartum, therefore, classes are suggested to be in small groups so as to encourage the participants to share their emotions. In this way, educators can better identify the needs of the men involved and react to them. Nonetheless, educators should undergo continuing training to keep themselves competent in meeting the changing educational and informational needs of contemporary new mothers and fathers.

It is common to run formal hospital-based antenatal classes in Hong Kong, but they do not provide an ideal opportunity for women to get to know each other. To foster mutual postnatal support among new mothers, educators are recommended to consider running community-based antenatal classes that would have the advantage of promoting supportive social relationships.

In fact, in antenatal classes, educators are recommended to emphasize the importance of the Chinese tradition postpartum practice, 'peiyue care', and encourage women to arrange and select a 'peiyue' who is supportive and understanding. 'Peiyue' is perhaps one of the most practical indicators of

social support (Lee, 2000). Lastly, educators should be aware of Chinese cultural practices and give advice to new mothers on how to balance bio-medical approaches with folk traditions.

5.3.4 Education and social support in primary care

Routine antenatal and postnatal checks in health center settings can be used as opportunities to provide teaching and support programmes. There are telephone hot line services provided by nurses in O&G units in hospitals, which operate during office hours. The nurses handle incoming enquires on postpartum care and baby care from new mothers. These services are recommended to extend to the evenings for the convenience of new mothers who have returned to their workplace during the day. Primary care workers are recommended to put women in touch with each other who share a similar situation and to encourage 'befriending' of newcomers or women who have been at work and do not know their neighbors. Information exchange and supportive groups can be facilitated in antenatal clinic waiting rooms by the provision of a friendly atmosphere and tea and snacks. Mothers can share their experience in breastfeeding or feedings in general, or perhaps discuss the choice of infant milk formula or the cost-effectiveness in choosing a specific brand of diaper. The waiting room should also be a place where first-time parents can find explanatory leaflets such as the 'do's and don'ts' of making life easier during pregnancy and around the time of childbirth. The primary care team could provide an updated list of information for pregnant women and their partners about facilities that are available in their area. Short informative videos could be shown in small tutorial groups, and

a library of informative books could also be kept. Books on mental health and childcare are highly recommended.

The reasons why women become depressed vary with each individual, therefore it is unlikely that education, social support and all other preventive measures will ever be able to prevent all postnatal depressions. However, steps towards promoting the psychological well-being of women and their families should be taken as first priority. Education of the public, health professionals and the women and their partners, will all help to bring about change. Most importantly, we need to ensure that resources, both in terms of specialist personnel and suitable venues, are available to help depressed women to help themselves. However, in the light of the continuing economic downturn, the Government strives to reduce budget deficits. Freezing civil service head counts and cutting expenditure are the key measures being taken to achieve cost containment. Thus, how much more extra resources the Government is able to allocate to sustain or enhance perinatal care for women in Hong Kong is going to be a highly debatable issue.

5.4 ACCOMPLISHMENT OF THE OBJECTIVES OF THE STUDY

The objective of the study has been accomplished by providing confident findings to the following questions (section 3.2):

5.4.1 Are Hong Kong women who have less paternal support available to them at greater risk of postpartum depression?

It was found in the study population (containing low-to-middle income class Chinese women which represents the majority of the women population in

Hong Kong) that there was a significant correlation between Paternal Support scores and EPDS scores. Lower Paternal Support scores were associated with higher EPDS scores. Since EPDS has been a recommended screening scale for identifying high-risk group to postpartum depression, therefore, it can be concluded from the findings that Hong Kong women who have less paternal support available to them are at greater risk of postpartum depression. (Table 20 in section 4.4.1, Table 23 in section 4.4.2, Table 26 in section 4.4.3)

5.4.2 Are the timing, type and duration of paternal support relevant?

The findings of the study indicate that paternal support is more necessary during postpartum and for a period of at least three months. Women are, most importantly, looking for their partners' presence in the household, and hoping that they can provide instrumental/practical support to them. Specific support items such as knowledge and skills in antenatal/postnatal care and baby care are perceived to be essential by women. Therefore, the timing, type and duration of paternal support are relevant. (Table 19 in section 4.3, Table 29 in section 4.4.4, Table 42 in section 4.6.2)

5.4.3 Is there a minimum level of support necessary to minimize postpartum depression (which could therefore be encouraged by appropriate education to Hong Kong public and health care professionals)?

The findings of the study indicate that a minimum level of paternal support (a score of 6 on the PSQ) is necessary to minimize postpartum depression. This score level could therefore be encouraged by appropriate education to

Hong Kong public and health care professionals. In addition, the PSQ could be included as a routine documentation in obstetric care services. (Figure 8 in section 4.4.1, Figure 10 in section 4.4.2, Figure 12 in section 4.4.3)

5.5 APPRAISAL OF STUDY METHODOLOGY

As with many other research studies, the sampling frame, sample size and statistical power, study design and attrition, measuring scales and method of data collection were key factors to the reliability of the findings of the study. This study was designed to minimize methodological pitfalls.

5.5.1 Sampling frame

The Princess Margaret Hospital (PMH) was an ideal site to recruit a representative sample. It is the only public hospital serving the Kowloon West and New Territories South regions of Hong Kong. With a delivery rate of about 4,000 per year, it represents 8 per cent of the total number of births per year in Hong Kong. Hence, using the PMH booking clinic as a sampling frame, it was possible to capture all potential deliveries within the public health care network of Kowloon West and New Territories South regions, where over one-sixth of the local population was included (Census and Statistical Department, 2000). To avoid undue sampling bias, only minimal exclusion criteria were adopted in this study. There was no age limitation and single mothers or multiparous women were also included in the sampling frame. Nonetheless, as discussed in section 3.7.1, women who delivered at private hospitals would fall outside the sampling frame of this study. Most of the women who delivered in private hospitals belonged to the

middle to upper social class, and would have a higher household income than the majority of the participants in this study. Failing to recruit them into the study did not imply negligence of this population group, it was only due to practical difficulties.

5.5.2 Sample size and statistical power

The sample size of 298 women provided adequate statistical power to identify the correlation between paternal support and depressive symptomatology in the accessible target population.

5.5.3 Prospective, longitudinal design and attrition

The participants were recruited at third trimester in the antenatal clinic and followed up through 6 weeks postpartum to 3 months postpartum. Data was collected at three points in time. To reduce attrition, all participants were distributed with stamped addressed envelopes for them to return the completed questionnaires to PMH at 3 months postpartum. The Postpartum Depression Screening Team (PPD Team) had demonstrated their warm personality and caring attitude in the clinics, and I had proved myself to be a good listener/counselor at interviews which promoted trust and rapport. Thus, despite the fact it was a lengthy follow up period with three points of assessment, the retention rate (81 per cent) was satisfactory.

5.5.4 Measuring scales and method of data collection

The Chinese EPDS is a validated scale for measuring depression symptoms in women, it is simple to administer and quick to score, and has proved to be

an effective screening tool for perinatal depression by previous researchers (Cox & Holden, 1987; Cox & Holden, 1994; Lee, 1998; Beck & Garble, 2000). The reliability of the EPDS has been proven by Cox et al. in 1987 (α = .87)). The Chinese PSQ had also been validated in content and in face, its construction had gone through a thorough discussion with a panel of experts (health professionals and mothers), and had proved to be acceptable by participants due to its simplicity and appropriateness in content. The reliability of the PSQ in the study had also been demonstrated to be adequate (α = .61 for antenatal PSQ, α = .73 for postnatal PSQ).

Future researchers may raise concern about the independence of the two research instruments: PSQ and EPDS. It may be argued that depressed women subjectively believe that they have not been receiving adequate support from their partners, which may influence their score on the PSQ. To avoid this possible influence by subjectivity, the PSQ has been designed to contain dichotomous and quantified questions on practical/instrumental support rather than questions on feelings and emotions. In such a way, women can only complete the PSQ with factual answers. Examples are frequency in attending antenatal classes and clinics, taking part in baby care activities, the number of hours spent together, and other practical questions. It is unlikely that the answers to the PSQ could be influenced by the women's depressive symptomatology at the point of completion. Therefore, the independence of the PSQ and EPDS has been maintained. Moreover, paternal support in the study has been defined to be practical/instrumental support rather than emotional support.

Data collection was accomplished by a combination of self-reporting channels. They were face-to-face interviews, telephone interviews and postal survey. The objectives of such a combination were to increase sample size and to enhance the response rate at the various time points of assessment. Furthermore, the individual interviews had provided more qualitative feedback from participants, which I found to be very supportive to the quantitative findings of the study, and very useful in the writing up of the thesis.

5.6 LIMITATION

5.6.1 Generalization of the study results

As stated previously, the sampling frame of the study had not included the upper and some middle class women who chose to deliver in private hospitals. Furthermore only 10 per cent of all accessible women were approached for recruitment. This was because the antenatal clinics were very busy, and there was a high turnover of members of the PPD Team. The findings of this study may not be generalized to rural Chinese women because Hong Kong is an urbanized commercial city with relatively few rural Chinese women. About 10 per cent of the participants were lost at the 6 weeks postnatal check, and a further 9 per cent were lost at the 3 months postnatal follow up. This attrition rate is compatible with other prospective nursing studies of this scale. However, if home visit had been included as one of the channels of data collection, there may well have been an improvement in the attrition rate.

5.6.2 Channels of data collection

One of the practical issues was some women were unwilling to wait in the clinic for the distribution of the questionnaires, while some might have taken the questionnaires home and forgot about them. Thus I had to do plenty of telephone follow-ups. However, the telephone interviews did have some drawbacks. It was very difficult and time consuming to try to call the participants who returned to work after maternity leave, which was 6 weeks after birth. Some participants gave very quick feedback and answers to the questionnaires without thinking through the answer, simply because they wanted to end the interview as soon as possible. Also, Chinese verbalization of the questionnaires may have slight differences compared to the Chinese writing of the questionnaires, and these differences may have been exacerbated in the telephone interviews when compared to self-reporting by the participants in the clinic.

5.6.3 Exclusion of partners' feedback

The partners' input had not been included in the design of the PSQ, therefore, the PSQ had not been validated on men. The PSQ was originally designed for the wives and their partners to complete together. It was observed that most partners, even though they were accompanying their wives in the clinic, were not enthusiastic about participating in the completion of the PSQ. For those women who were followed up by telephone interview, it was almost impossible to find a couple at home who was willing to attend the telephone interview together. This was an obvious limitation. The exclusion of the partners' feedback in this study was due to practical difficulties and did not

imply negligence of their feelings. Nonetheless, it is hoped that in future the PSQ can be validated on men, its English version be validated in English speaking countries, and for it to be considered as routine documentation in antenatal and postnatal clinics.

5.7 RECOMMENDATION FOR FUTURE STUDIES

5.7.1 Study on paternal depression in Chinese fathers

There have been increasing research interests in Western societies on fathers' feelings, emotions and concerns during their transition to fatherhood (Chalmers, 1996; Ballard, 1996; Barclay, 1999). However, as very limited studies are available in this area on Chinese fathers, it is indeed worthwhile to perform studies on Chinese partners' emotional well being at this transition period. As indicated by researchers in the West, in order to help the partners to provide both timely and effective support to their wives, the emotional well-being of the partners has to be taken care of. At this stage of writing, a study on paternal depression in fathers in Hong Kong is in its planning stage. I am acting as a project advisor of the new study.

Studies overseas (Lovestone, Kumar, 1993; Ballard et al., 1994) have demonstrated that fathers are more likely to be depressed if their partner is depressed. It is therefore worthwhile exploring in the local community the improvement in effectiveness of a treatment program offered to couples, instead of to the depressed wife only. Hence, evaluation and design of treatment programs for couples suffering from postnatal depression in Hong Kong are recommended.

5.7.2 Study on the relevance of the involvement of a woman's partner on the development of postpartum depression at 12 months after childbirth

The present study covered the Chinese women from third trimester antenatally to 3 months postnatally. Previous researchers (Gelder, 1978; Campbell, 1992) have indicated that postnatal depression may affect the mother and her family to a period as long as 12 months after childbirth. In order to benefit health care workers and new mothers, a similar study is warranted in future with the assessment period extended to a postpartum period of 12 months. Certainly, more effort and resources would be required for sample recruitment and in follow up in order to minimize the attrition rate. Nonetheless, replicating the findings of this study will increase our confidence in their validity.

5.7.3 Study on impact of in-law relationship on antenatal and postnatal depression

Lee et al shows in his study in 2001 that in addition to the marital relationship, postpartum psychological well being of Chinese women is determined by the relationship with the in-laws. It is suggested that the mother-in-law relationship is more prominent than the spousal relationship in determining postnatal depression. In contemporary Hong Kong families, "in-law syndrome" is grounded in the drastic social changes witnessed in the past decades. The new generation of women is more autonomous and liberal, the mother-in-law may find them to be not respectful enough whilst the daughter-in-law, brought up in modern and Western culture, may find the traditional expectation of a submissive and obedient daughter-in-law overbearing. Increased social contact inherent to the Chinese puerperium

therefore may generate conflicts, ranging from trivial rows on child rearing method, dietary preference, daily customs, to more open confrontations and fights for control and power within the family. In this study, the differences in "in-law" support received at postpartum period between the depressed and the non-depressed women, though non-significant, indicate that the "in-law" support/relationship may be a contributing factor to postpartum depression. What is the role of the partner in this dilemma? How is he going to be a middleman to smooth out the conflicts between his wife and his mother, if there is any? Can paternal support replace in-law support during perinatal period? If so, when and how? What kind of education and health care program is required by the partner/couple to make it happen? These questions can only be answered by future research projects in the area concerned.

5.7.4 Study to examine the most important content areas in antenatal education from the perspective of both educator and pregnant women

Ho and Holroyd recruited 11 Hong Kong mothers in their focus group study in 2002. These mothers reflected that they could not get from antenatal classes adequate preparation for baby care, and informational needs for self care. In addition, the classes were not preparing them for complex emotional problems. Although the findings of this study cannot be generalized due to its small sample size and other limitations, further studies are recommended to elucidate the findings. Also, the inclusion of husbands in future research should be considered. When new mothers and fathers have been given more opportunities to participate in decision-making about their educational needs,

they would be more motivated to attend antenatal and childbirth preparation classes.

5.8 CONCLUSION

To conclude, this study has achieved the stated objectives. There is a significant correlation between paternal support to Hong Kong Chinese women and their risk of depression during perinatal period. Hong Kong women who have less paternal support available to them are at greater risk of postpartum depression. This thesis argues that local government and employers need to consider ways of providing more benefits in terms of paternity leave to new fathers. In such a way that they will have time to receive education and training in antenatal care, postnatal care and baby care, and be therefore able to provide practical/instrumental support to their recently delivered wives.

The present study also shows that the quality of paternity support provided may be an indicator of the marital relationship between the couple. Paternal Support Questionnaire (PSQ) is a potentially useful tool to measure the degree and quality of paternal support received by women, and may be used as an indicator of marital relationship. Since marital satisfaction is a key predictive indicator of postnatal depression (Beck, 2001), by using the PSQ as a routine documentation, and taking a more proactive approach to any marital problems identified, the risks of postnatal depression may be reduced.

A strategic plan in education on postnatal depression in Hong Kong has been recommended. It includes education to health professionals, primary care providers, parents, and the young generation at school. A direction for future research has been suggested. It is also necessary to find out more about the emotions and feelings of Chinese partners (the fathers) during their transition to fatherhood so that new activities can be planned to address their emotional needs during the period. Educators are recommended to keep themselves competent with continuing training, and react to the new and changing educational needs of contemporary new mothers and their partners.

This study serves as an initial step in putting forward the relevance of the involvement of a woman's partner to the development of postpartum depression in Hong Kong. The findings of this study will be disseminated to local health professionals, social workers, parents, employers and government officials. It is hoped that a driving force will be established to lobby for more resources from local government in enhancing perinatal care to women and providing paternity protection to men in Hong Kong.

APPENDICES

Appendix 1 (English version)

Score_____

ANTENATAL PATERNAL SUPPORT QUESTIONNAIRE

Name_____Age___Expected date of delivery_____Today's date_____

As you will be delivering a baby shortly, we would like to know if you have received support from your partner. Please take the answer which comes closest to how you feel in the past 6 months. Your partner is welcome to help/participate in filling in the questionnaire.

1. Has your partner attended antenatal classes with you ?
   - Never ☐
   - Rarely ☐
   - Occasionally ☐
   - Very often ☐
   - Every time ☐

2. Has your partner attended the antenatal clinic with you ?
   - Never ☐
   - Rarely ☐
   - Occasionally ☐
   - Very often ☐
   - Every time ☐

3. When you feel you needed your partner's help in the past 6 months, was your partner able to take days off work to look after you ?
   - Never ☐
   - Rarely ☐
   - Occasionally ☐
   - Very often ☐
   - Every time ☐

4. How much time do you spend together everyday in the past 6 months ?
   - Less than an hour ☐
   - 1-2 hours ☐
   - More than 2 hours ☐
   - More than 4 hours ☐

5. Do you wish your partner to keep you company in the maternity ward when you are delivering the baby ?
   - Yes ☐
   - No ☐

6. How many hours does your partner spend at work per day in the past 6 months ?
   - Less than 8 hours ☐
   - 8 hours ☐
   - More than 8 hours ☐
   - More than 10 hours ☐
   - 12 hours or more ☐

7. Does your partner have stress at work ?
   - No, not really ☐
   - Yes but reasonable ☐
   - A lot of stress ☐
   - Over stressed ☐

8. Do you wish your partner take leave to keep you company at first-month after the baby is born ?
   - Yes ☐
   - No ☐

9. In the past 6 months, you received help/support from which of the following parties the most ? (Take as many boxes as you wish.)
   - Health care professionals ☐
   - Partner/husband ☐
   - Own parents ☐
   - Parents-in-law ☐
   - Brothers & sisters ☐
   - Other family members ☐
   - Maid ☐
   - Friends ☐
   - Others ☐

10. In the past 6 months, did you feel you have had enough support from your partner /husband ?
    - Not enough ☐
    - Not quite enough ☐
    - Moderately enough ☐
    - Enough ☐

11. If not enough, what do you think are the reasons ? (Take as many boxes as you wish.)
    - Not willing to take responsibilities ☐
    - Insufficient knowledge ☐
    - Do not have time ☐
    - Has to work ☐
    - Marital relationship not good ☐
    - Other reasons ☐
    - Please specify_____

12. Did you feel that you have had depression in the past 6 months ?
    - Yes, I feel so. ☐
    - No, I don't feel so. ☐
    - Don't know ☐
    - Don't want to answer ☐

得分 _____

產前伴侶支持量表

姓名 _____ 年齡 _____ 預產期 _____ 填表日期 _____

說明：因爲妳很快會生 BB，我們想了解妳的伴侶在過去六個月有沒有給妳足夠支持。請選擇一個最能反映在過去六個月內妳伴侶對你的支持程度。

1. 妳伴侶有冇陪妳上過產前講座？

從未 ☐
好少 ☐
間中 ☐
經常 ☐
每次 ☐

2. 妳伴侶有冇陪妳去做產前檢查？

從未 ☐
好少 ☐
間中 ☐
經常 ☐
每次 ☐

3. 在過去六個月，當妳需要伴侶幫助或陪伴時，伴侶有冇放假陪妳？

從未 ☐
好少 ☐
間中 ☐
經常 ☐
每次 ☐

4. 在過去六個月妳同伴侶每日有多少時間相處在一起？

少過一小時 ☐
一至兩小時 ☐
多過兩小時 ☐
多過四小時 ☐

5. 妳想唔想伴侶在產房陪產？

想 ☐
唔想 ☐

6. 在過去六個月妳伴侶平均每日工作幾多小時？

八小時以下 ☐
八小時 ☐
八小時以上 ☐
十小時以上 ☐
十二小時或以上 ☐

7. 妳伴侶在工作上有沒有壓力？

有 ☐
有，但是正常的 ☐
很大壓力 ☐
壓力過大 ☐

8. 產後坐月期間，妳想唔想伴侶請假陪妳呢？

想 ☐
唔想 ☐

9. 在過去六個月，妳得到邊個多D嘅支持同幫助呢？（可以多過一個選擇）

醫護人員	☐
伴侶	☐
自己父母	☐
老爺 / 奶奶	☐
兄弟姊妹	☐
其他家人	☐
菲傭	☐
朋友	☐
其他人	☐

10. 在過去6個月，整體而言，妳覺得丈夫對妳的支持夠唔夠呢？

唔夠	☐
唔係好夠	☐
一般夠啦	☐
夠	☐

11. 如果支持唔夠，妳認爲主要係乜嘢原因呢？（可以多過一個答案）

逃避責任	☐
知識不足	☐
冇時間	☐
要返工	☐
夫妻關係唔好	☐
其他原因	☐

請註明 ：_____

_____

_____

_____

12. 在過去6個月，妳有冇感覺到有抑鬱的問題？

有	☐
冇	☐
唔知	☐
唔想答	☐

Appendix 2 (English version)

Score_____

POSTNATAL PATERNAL SUPPORT QUESTIONNAIRE

Name_____Age____Date of delivery_____Today's date_____

As you have delivered a baby recently, we would like to know if you have received support from your partner. Please take the answer which comes closest to how you feel in the past 6 months. Your partner is welcome to help/participate in filling in the questionnaire.

1. When you feel you needed your partner's help in the past 6 months, was your partner able to take days off work to look after you ?
   - Never ☐
   - Rarely ☐
   - Occasionally ☐
   - Very often ☐
   - Every time ☐

2. How much time do you spend together everyday in the past 6 months ?
   - Less than an hour ☐
   - 1-2 hours ☐
   - More than 2 hours ☐
   - More than 4 hours ☐

3. Did your partner keep you company in the maternity ward when you were delivering the baby ?
   - Yes ☐
   - No ☐
   - No, because I had an elective Caesarean section ☐

4. How many hours does your partner spend at work per day in the past 6 months ?
   - Less than 8 hours ☐
   - 8 hours ☐
   - More than 8 hours ☐
   - More than 10 hours ☐
   - 12 hours or more ☐

5. Does your partner have stress at work ?
   - No, not really ☐
   - Yes but reasonable ☐
   - A lot of stress ☐
   - Over stressed ☐

6. Did your partner feel able to take leave to keep you company at first-month after the baby was born ?
   - No ☐
   - Rarely ☐
   - Occasionally ☐
   - Often ☐

7. Has your partner taken part in looking after the baby ? e.g. prepare formula, change diapers, bathing the baby.
   - No ☐
   - Rarely ☐
   - Occasionally ☐
   - Often ☐
   - Very frequently/Always ☐

8. When the baby cries at night, does your partner wake up to help ?
   - No ☐
   - Rarely ☐
   - Occasionally ☐
   - Often ☐
   - Very frequently/Always ☐

9. After your baby was born, you received help/support from which of the following parties the most ? (Take as many boxes as you wish.)
   - Health care professionals ☐
   - Partner/husband ☐
   - Own parents ☐
   - Parents-in-law ☐
   - Brothers & sisters ☐
   - Other family members ☐
   - Maid ☐
   - Friends ☐
   - Others ☐

10. In the past 6 months, did you feel you have had enough support from your partner /husband ?
    - Not enough ☐
    - Not quite enough ☐
    - Moderately enough ☐
    - Enough ☐

11. If not enough, what do you think are the reasons ? (Take as many boxes as you wish.)
    - Not willing to take responsibilities ☐
    - Insufficient knowledge ☐
    - Do not have time ☐
    - Has to work ☐
    - Marital relationship not good ☐
    - Feeling troublesome in taking care of the baby ☐
    - Other reasons ☐

    Please specify _____
    _____
    _____

12. Did you feel that you have had postnatal depression after the baby was born ?
    - Yes, I feel so. ☐
    - No, I don't feel so. ☐
    - Don't know ☐
    - Don't know, don't know much about PND ☐
    - Don't want to answer ☐

得分 _____

產後伴侶支持量表

姓名 _____年齡 ____新生孩子週歲 ____填表日期 _____

說明：因爲妳最近生了 BB，我們想了解妳的伴侶在過去六個月有沒有給妳足夠支持。請選擇一個最能反映在過去六個月內妳伴侶對你的支持程度。

1. 在過去六個月，當妳需要伴侶幫助或陪伴時，伴侶有冇放假陪妳？

   從未 ☐
   好少 ☐
   間中 ☐
   經常 ☐
   每次 ☐

2. 在過去六個月妳同伴侶每日有多少時間相處在一起？

   少過一小時 ☐
   一至兩小時 ☐
   多過兩小時 ☐
   多過四小時 ☐

3. 當妳生 BB 時，妳伴侶有冇在產房陪產？

   有 ☐
   冇 ☐
   有，因爲我是開刀生 BB ☐

5. 妳伴侶在工作上有沒有壓力？

   冇 ☐
   有，但是正常的 ☐
   很大壓力 ☐
   壓力過大 ☐

6. 產後坐月期間，伴侶有冇試過請假陪妳呢？

   冇 ☐
   極少 ☐
   間中 ☐
   經常 ☐

7. 伴侶有冇幫手湊 BB（例如開奶、換片、沖涼）？

   冇 ☐
   極少 ☐
   間中 ☐
   經常 ☐
   大部份 / 全部 ☐

4. 在過去六個月妳伴侶平均每日工作幾多小時？

八小時以下 ☐
八小時 ☐

八小時以上 ☐
十小時以上 ☐
十二小時或以上 ☐

8. 如果半夜 BB 哭，伴侶有冇起床幫手？

有 ☐
極少 ☐

間中 ☐
經常 ☐
大部份 / 全部 ☐

9. 生完 BB 之後，妳得到邊個多 D 嘅支持同幫助呢？（可以多過一個選擇）

醫護人員 ☐
伴侶 ☐
自己父母 ☐
老爺 / 奶奶 ☐
兄弟姊妹 ☐
其他家人 ☐
菲傭 ☐
朋友 ☐
其他人 ☐

11. 如果支持唔夠，妳認爲主要係乜嘢原因呢？（可以多過一個答案）

逃避責任 ☐
知識不足 ☐
冇時間 ☐
要返工 ☐
夫妻關係唔好 ☐
覺得湊仔好麻煩 ☐
其他原因 ☐
請註明 ：_____
_____
_____
_____

10. 在過去 6 個月，整體而言，妳覺得丈夫對妳的支持夠唔夠呢？

唔夠 ☐
唔係好夠 ☐
一般夠啦 ☐
夠 ☐

12. 妳生完 BB 之後有冇感覺到有產後抑鬱的問題？

有 ☐
冇 ☐
唔知 ☐
唔知，對產後抑鬱所知不多 ☐
唔想答 ☐

Appendix 3 (English version)

Score _____

Antenatal Depression Screening questionnaire

Name___ Age__ D.O.B._____ Today's date

HOW ARE YOU FEELING?

As you are pregnant, we would like to know how you are feeling now. Please tick the answer which comes closest to how you have felt in the past 7 days, not just how you feel today.

Here is an example, already completed:

I have felt happy:

(1) Yes, most of the time.

(2) Yes, some of the time. √

(3) No, not very often.

(4) No, not at all.

This would mean: "I have felt happy some of the time" during the past week. Please complete the other questions in the same way.

IN THE PAST SEVEN DAYS

1. I have been able to laugh and see the funny side of things:

(1) As much as I always could

(2) Not quite so much now

(3) Definitely not so much now.

(4) Not at all.

2. I have looked forward with enjoyment to things:

(1) As much as I ever did

(2) Rather less than I used to

(3) Definitely less than I used to

(4) Hardly at all

3. I have blamed myself unnecessarily when things went wrong.

(1) Yes, most of the time.

(2) Yes, some of the time.

(3) Not very often.

(4) No, never.

4. I have felt worried and anxious for no very good reason:

(1) No, not at all

(2) Hardly ever

(3) Yes, sometimes.

(4) Yes, Very often.

5. I have felt scared or panicky for no very good reason:

(1) Yes quite a lot.

(2) Yes, sometimes.

(3) No, not much

(4) No, not at all

6. Things have been getting on top of me:

(1) Yes, most of the time I haven't been able to cope at all.

(2) Yes, sometimes I haven't been coping as well as usual.

(3) No, most of the time I have coped quite well.

(4) No I have been coping as well as ever

7. I have been so unhappy that I have had difficulty sleeping:

(1) Yes, most of the time.

(2) Yes sometimes.

(3) Not very often.

(4) No, not at all.

8. I have felt sad or miserable:

(1) Yes, most of the time.

(2) Yes, quite often.

(3) Not very often.

(4) No, not at all.

9. I have been so unhappy that I have been crying;

(1) Yes, most of the time.

(2) Yes, quite often.

(3) Only occasionally.

(4) No, never.

10. The thought of harming myself has occurred to me:

(1) Yes, quite often.

(2) Sometimes.

(3) Hardly ever.

(4) Never.

Appendix 3 (Chinese version)

得分 _____

姓名：_____年齡: ____分娩日期：_____ 填表日期：_____

說明： 因爲您剛生了孩子，我們想了解一下您的感受，請選擇一個能反映您過去七天感受的答案。

注意：不只是您今天的感覺，而是過去七天的感受，例如：

我感到愉快 (1) 所有時候這樣
✓(2) 大部分時候這樣
(3) 不經常這樣
(4) 一點也沒有

選擇答案(2)表明在上一周大部分時間都感到愉快，請照同樣方式完成以下各題。

在過去七天內：

1. 我能看到事物有趣的一面，並笑得開心。
   (1) 同以前一樣
   (2) 沒有以前那麼多
   (3) 肯定比以前少
   (4) 完全不能

2. 我欣然期待未來的一切。
   (1) 同以前一樣
   (2) 沒有以前那麼多
   (3) 肯定比以前少
   (4) 完全不能

3. 當事情出錯時，我會不必要地責備自己。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 沒有這樣

4. 我無緣無故感到焦慮和擔心。
   (1) 一點也沒有
   (2) 極少有
   (3) 有時候這樣
   (4) 經常這樣

5. 我無緣無故感到害怕和驚慌。
   (1) 相當多時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

6. 很多事情衝著我而來，使我透不過氣。
   (1) 大多數時候我不能應付
   (2) 有時候我不能像平時那樣應付得好。
   (3) 大部分時候我都能像平時那樣應付得好。
   (4) 我一直都能應付得好。

7. 我很不開心，以致失眠。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

8. 我感到難過和悲傷。
   (1) 大部分時候這樣
   (2) 相當多時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

9. 我不開心到想哭。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 只是間中這樣
   (4) 沒有這樣

10. 我想過要傷害自己。
    (1) 相當多時候這樣
    (2) 有時候這樣
    (3) 很少這樣
    (4) 沒有這樣

Appendix 4 (English version)

Score _____

Postnatal Depression Screening questionnaire

Name___ Age__ D.O.B._____ Today's date

HOW ARE YOU FEELING?

As you have just delivered a baby, we would like to know how you are feeling now. Please tick the answer which comes closest to how you have felt in the past 7 days, not just how you feel today.

Here is an example, already completed:

I have felt happy:

(1) Yes, most of the time.

(2) Yes, some of the time. √

(3) No, not very often.

(4) No, not at all.

This would mean: "I have felt happy some of the time" during the past week. Please complete the other questions in the same way.

IN THE PAST SEVEN DAYS

1. I have been able to laugh and see the funny side of things:

(1) As much as I always could

(2) Not quite so much now

(3) Definitely not so much now.

(4) Not at all.

2. I have looked forward with enjoyment to things:

(1) As much as I ever did

(2) Rather less than I used to

(3) Definitely less than I used to

(4) Hardly at all

3. I have blamed myself unnecessarily when things went wrong.

(1) Yes, most of the time.

(2) Yes, some of the time.

(3) Not very often.

(4) No, never.

4. I have felt worried and anxious for no very good reason:

(1) No, not at all

(2) Hardly ever

(3) Yes, sometimes.

(4) Yes, Very often.

5. I have felt scared or panicky for no very good reason:

(1) Yes quite a lot.

(2) Yes, sometimes.

(3) No, not much

(4) No, not at all

6. Things have been getting on top of me:

(1) Yes, most of the time I haven't been able to cope at all.

(2) Yes, sometimes I haven't been coping as well as usual.

(3) No, most of the time I have coped quite well.

(4) No I have been coping as well as ever

7. I have been so unhappy that I have had difficulty sleeping:

(1) Yes, most of the time.

(2) Yes sometimes.

(3) Not very often.

(4) No, not at all.

8. I have felt sad or miserable:

(1) Yes, most of the time.

(2) Yes, quite often.

(3) Not very often.

(4) No, not at all.

9. I have been so unhappy that I have been crying;

(1) Yes, most of the time.

(2) Yes, quite often.

(3) Only occasionally.

(4) No, never.

10. The thought of harming myself has occurred to me:

(1) Yes, quite often.

(2) Sometimes.

(3) Hardly ever.

(4) Never.

得分 _____

姓名：_____年齡: ____分娩日期：_____ 填表日期：_____

說明： 因爲您剛生了孩子，我們想了解一下您的感受，請選擇一個能反映您過去七天感受的答案。

注意：不只是您今天的感覺，而是過去七天的感受，例如：

我感到愉快 (1) 所有時候這樣
✓(2) 大部分時候這樣
(3) 不經常這樣
(4) 一點也沒有

選擇答案(2)表明在上一周大部分時間都感到愉快，請照同樣方式完成以下各題。

在過去七天內：

1. 我能看到事物有趣的一面，並笑得開心。
   (1) 同以前一樣
   (2) 沒有以前那麼多
   (3) 肯定比以前少
   (4) 完全不能

2. 我欣然期待未來的一切。
   (1) 同以前一樣
   (2) 沒有以前那麼多
   (3) 肯定比以前少
   (4) 完全不能

3. 當事情出錯時，我會不必要地責備自己。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 沒有這樣

4. 我無緣無故感到焦慮和擔心。
   (1) 一點也沒有
   (2) 極少有
   (3) 有時候這樣
   (4) 經常這樣

5. 我無緣無故感到害怕和驚慌。
   (1) 相當多時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

6. 很多事情衝著我而來，使我透不過氣。
   (1) 大多數時候我不能應付
   (2) 有時候我不能像平時那樣應付得好。
   (3) 大部分時候我都能像平時那樣應付得好。
   (4) 我一直都能應付得好。

7. 我很不開心，以致失眠。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

8. 我感到難過和悲傷。
   (1) 大部分時候這樣
   (2) 相當多時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

9. 我不開心到想哭。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 只是間中這樣
   (4) 沒有這樣

10. 我想過要傷害自己。
    (1) 相當多時候這樣
    (2) 有時候這樣
    (3) 很少這樣
    (4) 沒有這樣

Appendix 5 (English version)

Score _____

Postnatal Depression Screening questionnaire

Name___ Age__ D.O.B._____ Today's date

HOW ARE YOU FEELING?

As you have just delivered a baby, we would like to know how you are feeling now. Please tick the answer which comes closest to how you have felt in the past 7 days, not just how you feel today.

Here is an example, already completed:

I have felt happy:

(1) Yes, most of the time.

(2) Yes, some of the time. √

(3) No, not very often.

(4) No, not at all.

This would mean: "I have felt happy some of the time" during the past week. Please complete the other questions in the same way.

IN THE PAST SEVEN DAYS

1. I have been able to laugh and see the funny side of things:

(1) As much as I always could

(2) Not quite so much now

(3) Definitely not so much now.

(4) Not at all.

2. I have looked forward with enjoyment to things:

(1) As much as I ever did

(2) Rather less than I used to

(3) Definitely less than I used to

(4) Hardly at all

3. I have blamed myself unnecessarily when things went wrong.

(1) Yes, most of the time.

(2) Yes, some of the time.

(3) Not very often.

(4) No, never.

4. I have felt worried and anxious for no very good reason:

(1) No, not at all

(2) Hardly ever

(3) Yes, sometimes.

(4) Yes, Very often.

5. I have felt scared or panicky for no very good reason:

(1) Yes quite a lot.

(2) Yes, sometimes.

(3) No, not much

(4) No, not at all

6. Things have been getting on top of me:

(1) Yes, most of the time I haven't been able to cope at all.

(2) Yes, sometimes I haven't been coping as well as usual.

(3) No, most of the time I have coped quite well.

(4) No I have been coping as well as ever

7. I have been so unhappy that I have had difficulty sleeping:

(1) Yes, most of the time.

(2) Yes sometimes.

(3) Not very often.

(4) No, not at all.

8. I have felt sad or miserable:

(1) Yes, most of the time.

(2) Yes, quite often.

(3) Not very often.

(4) No, not at all.

9. I have been so unhappy that I have been crying;

(1) Yes, most of the time.

(2) Yes, quite often.

(3) Only occasionally.

(4) No, never.

10. The thought of harming myself has occurred to me:

(1) Yes, quite often.

(2) Sometimes.

(3) Hardly ever.

(4) Never.

得分 _____

姓名：_____年齡: ____分娩日期：_____ 填表日期：_____

說明： 因爲您剛生了孩子，我們想了解一下您的感受，請選擇一個能反映您過去七天感受的答案。

注意：不只是您今天的感覺，而是過去七天的感受，例如：

我感到愉快 (1) 所有時候這樣
✓(2) 大部分時候這樣
(3) 不經常這樣
(4) 一點也沒有

選擇答案(2)表明在上一周大部分時間都感到愉快，請照同樣方式完成以下各題。

在過去七天內：

1. 我能看到事物有趣的一面，並笑得開心。
   (1) 同以前一樣
   (2) 沒有以前那麼多
   (3) 肯定比以前少
   (4) 完全不能

2. 我欣然期待未來的一切。
   (1) 同以前一樣
   (2) 沒有以前那麼多
   (3) 肯定比以前少
   (4) 完全不能

3. 當事情出錯時，我會不必要地責備自己。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 沒有這樣

4. 我無緣無故感到焦慮和擔心。
   (1) 一點也沒有
   (2) 極少有
   (3) 有時候這樣
   (4) 經常這樣

5. 我無緣無故感到害怕和驚慌。
   (1) 相當多時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

6. 很多事情衝著我而來，使我透不過氣。
   (1) 大多數時候我不能應付
   (2) 有時候我不能像平時那樣應付得好。
   (3) 大部分時候我都能像平時那樣應付得好。
   (4) 我一直都能應付得好。

7. 我很不開心，以致失眠。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

8. 我感到難過和悲傷。
   (1) 大部分時候這樣
   (2) 相當多時候這樣
   (3) 不經常這樣
   (4) 一點也沒有

9. 我不開心到想哭。
   (1) 大部分時候這樣
   (2) 有時候這樣
   (3) 只是間中這樣
   (4) 沒有這樣

10. 我想過要傷害自己。
    (1) 相當多時候這樣
    (2) 有時候這樣
    (3) 很少這樣
    (4) 沒有這樣

EDINBURGH POSTNATAL DEPRESSION SCALE

Today's Date Baby's age D.O.B.

Mother's age Baby's place in family: 1 2 3 4 5 6 7

HOW ARE YOU FEELING?

As you have recently had a baby, we would like to know how you are feeling now. Please underline the answer which comes closest to how you have felt in the past 7 days, not just how you feel today.

Here is an example, already completed:

I have felt happy:

Yes, most of the time.

Yes, some of the time.

No, not very often.

No, not at all.

This would mean: "I have felt happy some of the time" during the past week. Please complete the other questions in the same way.

IN THE PAST SEVEN DAYS

1. I have been able to laugh and see the funny side of things:

As much as I always could

Not quite so much now

Definitely not so much now.

Not at all.

2. I have looked forward with enjoyment to things:

As much as I ever did

Rather less than I used to

Definitely less than I used to

Hardly at all

3. I have blamed myself unnecessarily when things went wrong.

Yes, most of the time.

Yes, some of the time.

Not very often.

No, never.

4. I have felt worried and anxious for no very good reason:

No, not at all

Hardly ever

Yes, sometimes.

Yes, Very often.

5. I have felt scared or panicky for no very good reason:

Yes quite a lot.

Yes, sometimes.

No, not much

No, not at all

6. Things have been getting on top of me:

Yes, most of the time I haven't been able to cope at all.

Yes, sometimes I haven't been coping as well as usual.

No, most of the time I have coped quite well.

No I have been coping as well as ever

7. I have been so unhappy that I have had difficulty sleeping:

Yes, most of the time.

Yes sometimes.

Not very often.

No, not at all.

8. I have felt sad or miserable:

Yes, most of the time.

Yes, quite often.

Not very often.

No, not at all.

9. I have been so unhappy that I have been crying;

Yes, most of the time.

Yes, quite often.

Only occasionally.

No, never.

10. The thought of harming myself has occurred to me:

Yes, quite often.

Sometimes.

Hardly ever.

Never.

Scoring

Individual items are scored 0 to 3 and are totalled to give an overall score. A score of 12+ indicates the likelihood of depression, but not its severity.

Name **ID no.** **File no.**

VARIABLES 變更事項

School qualification 教育程度

- ❑ Yes 是
- ❑ No 否

Employed 在職人仕

- ❑ Yes 是
- ❑ No 否

Planned pregnancy 有計劃地懷孕

- ❑ Yes 是
- ❑ No 否

Past psychiatric history
過去精神病紀錄

- ❑ Yes 有
- ❑ No 冇

First child 第一個孩子

- ❑ Yes 是
- ❑ No 否

Antenatal care 產前護理(講座)

- ❑ Yes 有
- ❑ No 冇

Delivery 生產過程

- ❑ Unassisted 無需協助
- ❑ Assisted 需要協助

Obstetric complication 產科複雜症

- ❑ Present 有
- ❑ Absent 冇

Feeding method 喂哺方法

- ❑ Breast 母乳
- ❑ Bottle 奶粉

Healthy baby 健康嬰兒

- ❑ Yes 是
- ❑ No 否

Easy to manage 容易應付

- ❑ Yes 是
- ❑ No 否

Mother's health during pregnancy
母親在懷孕其間的身體健康狀況

- ❑ Problems 有問題
- ❑ No problems 冇問題

Sudden family changes during pregnancy
懷孕期間的家庭狀況變化

- ❑ Yes 有
- ❑ No 冇

Appendix 8 (English version)

Serial Number _____

Consent Form

Name :

ID number :

Phone number :

Address :

You are invited to take part in a study designed to determine which factors might be important in the development of postnatal depression in women in Hong Kong.

Researcher has discussed with Ms _____ , and
(woman)

Mr. _____ (optional) of the followings:
(partner)

1.Nature of the study
2.Content of postnatal depression questionnaire
3.Content of paternal support questionnaires
4.Authorize the researcher to use the data for research and publication
5. Right to withdraw anytime during the study and treatment will not be affected.
6. Confidentiality of personal details and privacy

_____ _____
Woman Partner (optional)

_____ _____
Researcher Witness

_____
Date

編號 _____

同意書

姓名：

身份証號碼：

聯絡電話：

聯絡地址：

現在邀請閣下參與一項研究-調查丈夫或伴侶的參與和支持對女性產後抑鬱症發展的影響。

_____女士和_____先生*已瞭解以下各點 ：

1. 研究調查的本意。
2. 產前／後問卷內容。
3. 產前／後伴侶支持量表內容。
4. 閣下授權及同意研究員發佈是次調查結果。
5. 閣下可以隨時退出是次研究，而對閣下正在接受的治療將不會有任何影響。
6. 一切個人資料會保密處理，及研究員必須遵守私隱條例守則。

_____ _____太太

伴侶

_____ _____

研究員 見證人

_____

日期

* 可選擇不填寫

Appendix 9

DATA SHEET

SHEET NO _____

Name	ID No	File No	Telephone No	Baby's exp date of birt		Baby's act date of birth		SCORES							
				Month	Date	Month	Date	AN EPDS	AN Paternal	6 wk-pn EPDS	3 mon-pn EPDS	3 mon-pn Paternal	EPDS (3mon-a	PS (3mon-an)	

Differences in paternal support received by the depressed women and the non-depressed women

Table 44a Partners attended antenatal class for depressed and non-depressed women

Count

		EPDS score at 34-36 weeks antenatal		
		>=10 (depressed)	<10 (non-depressed)	Total
antenatal : partner attended antenatal classes?	never	56	92	148
	rarely	13	16	29
	occasionally	29	33	62
	very often	2	23	25
	every time	14	20	34
Total		114	184	298

Table 44b Chi-Square test for partners attended antenatal class for depressed and non-depressed women

	Value	df
Pearson Chi-Square	12.257[a]	4
Likelihood Ratio	14.600	4
N of Valid Cases	298	

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.56.

Table 45a Partners attended antenatal clinic for depressed and non-depressed women

Count

		EPDS score at 34-36 weeks antenatal		
		>=10 (depressed)	<10 (non-depressed)	Total
antenatal : partner attended the antenatal clinic?	never	32	45	77
	rarely	25	20	45
	occasionally	40	72	112
	very often	10	31	41
	every time	7	16	23
Total		114	184	298

Table 45b Chi-Square test for partners attended antenatal clinic for depressed and non-depressed women

	Value	df
Pearson Chi-Square	10.296[a]	4
Likelihood Ratio	10.338	4
N of Valid Cases	298	

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.80.

Table 46a Time spent together with partners everyday at antenatal for depressed and non-depressed women

Count

		EPDS score at 34-36 weeks antenatal		
		>=10 (depressed)	<10 (non-depressed)	Total
antenatal : time spend together everyday	less than an hour	6	6	12
	1-2 hours	28	13	41
	more than 2 hours	30	53	83
	more than 4 hours	50	112	162
Total		114	184	298

Table 46b Chi-Square test for time spent together with partners everyday at antenatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	20.265[a]	3
Likelihood Ratio	19.822	3
N of Valid Cases	298	

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 4.59.

Table 47a Time partners spend at work everyday at antenatal for depressed and non-depressed women

Count

		EPDS score at 34-36 weeks antenatal		
		>=10 (depressed)	<10 (non-depressed)	Total
antenatal : hours partner spend at work per day	12 hours or more	20	27	47
	more than 10 hours	38	57	95
	more than 8 hours	34	71	105
	8 hours	20	22	42
	less than 8 hours	2	7	9
Total		114	184	298

Table 47b Chi-Square test for time partners spend at work everyday at antenatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	4.562[a]	4
Likelihood Ratio	4.634	4
N of Valid Cases	298	

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.44.

Table 48a Partners' stress at work at antenatal for depressed and non-depressed women

Count

		EPDS score at 34-36 weeks antenatal		
		>=10 (depressed)	<10 (non-depressed)	Total
antenatal : partner have stress at work	over stressed	2	1	3
	a lot of stress	28	21	49
	yes, but reasonable	76	140	216
	no, not really	8	22	30
Total		114	184	298

Table 48b Chi-Square test for partners' stress at work at antenatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	10.993[a]	3
Likelihood Ratio	10.790	3
N of Valid Cases	298	

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.15.

Table 49a Partners' antenatal support for depressed and non-depressed women

Count

		EPDS score at 34-36 weeks antenatal		
		>=10 (depressed)	<10 (non-depressed)	Total
antenatal : enough support from partner/husband	not enough	12	7	19
	not quite enough	11	11	22
	moderately enough	64	105	169
	enough	27	61	88
Total		114	184	298

Table 49b Chi-Square test for partners' antenatal support for depressed and non-depressed women

	Value	df
Pearson Chi-Square	8.421[a]	3
Likelihood Ratio	8.265	3
N of Valid Cases	298	

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.27.

Table 50a Partners able to take days off work at postnatal for depressed and non-depressed women

Count

		EPDS score at 12-14 weeks postnatal		
		>=10 (depressed)	<10 (non-depressed)	Total
postnatal : partner able to take days off work	never	11	11	22
	rarely	26	44	70
	occasionally	38	65	103
	very often	15	56	71
	every time	6	26	32
Total		96	202	298

Table 50b Chi-Square test for partners able to take days off work at postnatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	11.652[a]	4
Likelihood Ratio	11.983	4
N of Valid Cases	298	

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.09.

Table 51a Time spent with partners everyday at postnatal for depressed and non-depressed women

Count

		EPDS score at 12-14 weeks postnatal		
		>=10 (depressed)	<10 (non-depressed)	Total
postnatal : time spend together everyday	less than an hour	6	7	13
	1-2 hours	18	17	35
	more than 2 hours	27	46	73
	more than 4 hours	45	132	177
Total		96	202	298

Table 51b Chi-Square test for time spent with partners everyday at postnatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	11.573[a]	3
Likelihood Ratio	11.242	3
N of Valid Cases	298	

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 4.19.

Table 52a Partners' stress at work at postnatal for depressed and non-depressed women

Count

		EPDS score at 12-14 weeks postnatal		
		>=10 (depressed)	<10 (non-depressed)	Total
postnatal : partner have stress at work	over stressed	2	1	3
	a lot of stress	24	35	59
	yes, but reasonable	67	152	219
	no, not really	3	14	17
Total		96	202	298

Table 52b Chi-Square test for partners' stress at work at postnatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	5.482[a]	3
Likelihood Ratio	5.456	3
N of Valid Cases	298	

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .97.

Table 53a Partners taking part in looking after the baby at postnatal for depressed and non-depressed women

Count

		EPDS score at 12-14 weeks postnatal		
		>=10 (depressed)	<10 (non-depressed)	Total
postnatal : partner taken part in looking after the baby	no	15	12	27
	rarely	36	52	88
	occasionally	29	75	104
	often	15	52	67
	very frequently/always	1	11	12
Total		96	202	298

Table 53b Chi-Square test for partners taking part in looking after the baby at postnatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	16.772[a]	4
Likelihood Ratio	17.159	4
N of Valid Cases	298	

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.87.

Table 54a Partners waking up to help at night at postnatal for depressed and non-depressed women

Count

		EPDS score at 12-14 weeks postnatal		
		>=10 (depressed)	<10 (non-depressed)	Total
postnatal : partner wake up to help at night	no	25	38	63
	rarely	31	49	80
	occasionally	28	73	101
	often	10	31	41
	very frequently/always	2	11	13
Total		96	202	298

Table 54b Chi-Square test for partners waking up to help at night at postnatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	6.943[a]	4
Likelihood Ratio	7.159	4
N of Valid Cases	298	

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.19.

Table 55a Partners' support at postnatal for depressed and non-depressed women

Count

		EPDS score at 12-14 weeks postnatal		
		>=10 (depressed)	<10 (non-depressed)	Total
postnatal : enough support from partner/husband	not enough	17	5	22
	not quite enough	24	24	48
	moderately enough	41	107	148
	enough	14	66	80
Total		96	202	298

Table 55b Chi-Square test for partners' support at postnatal for depressed and non-depressed women

	Value	df
Pearson Chi-Square	36.719[a]	3
Likelihood Ratio	35.576	3
N of Valid Cases	298	

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.09.

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