The prevalence of depressive symptoms in the prepartum and postpartum period: a study of

low-income women in the Western Cape, South Africa

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# DECLARATION

I, the undersigned hereby declare that the work contained in this thesis is my own origional work, and has not previously, in its entirety, or in part, been submitted at any other university for a degree.

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K. Storkey                                                        Date
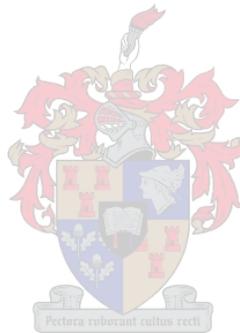
# ABSTRACT

This study aimed to determine whether low-income women residing in a rural community in South Africa experienced any significant difference in the prevalence rates of depressive symptoms postpartum as compared to depressive symptoms prepartum.

Thirty women between the ages of 16 and 38 were recruited during pregnancy from the local community clinic in Kylemore, South Africa. The women where assessed for elevated levels of depressive symptomatology using the Beck Depression Inventory (BDI) during pregnancy and again at three and six months postpartum. It was found that 18 (60%) of the women reported elevated levels of depressive symptomatology during the prepartum assessment, with 11 (37.9%) and 12 (48%) women reporting elevated levels of depressive symptomatology at the three months and six month postpartum assessment respectively.

It was further found that the sample from the current study did not experience any significant difference in the rate of depressive symptomatology from the prepartum assessment to either of the postpartum assessments. The results also suggests that a relationship exists between the levels of depressive symptomatology prepartum and the levels of depressive symptomatology postpartum, as those women who experienced high levels of depressive symptomatology during pregnancy continued to show high levels of depressive symptomatology at the postpartum assessments.

The findings from the current study thus suggest that the classification of postpartum depression as a unique and separate entity, that differs from depression occurring in women at other times and from depression as experienced by men, may be misleading. The term suggests a depression that develops following childbirth, while in the current study it seemed that when depressive symptoms were reported postpartum, they were also already apparent during pregnancy. The findings from the current study therefore suggest that the existence of postpartum depression as a distinct diagnosis or illness is problematic – a suggestion that has

frequently been suggested in the literature (Aderibigbe, Gureje, & Omigbodun, 1993; Chandran, Tharyan, Muliyil & Abraham, 2002; Cooper, Campbell, Day, Kennerly & Bond, 1988; Cox, Murray & Chapman, 1993; O'Hara, Zekoski, Phillips & Wright, 1990; Patel, Rodrigues, & DeSouza, 2002).
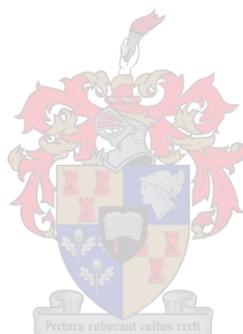
OPSOMMING

Die doelstelling van die huidige studie was om te bepaal of lae-inkomste vroue,

woonagtig in 'n semi-plattelandse gemeenskap in Suid-Afrika enige betekinisvolle

verandering in die voorkoms van depressiewe simptomatologie na geboorte ervaar het in

vergelyking met depressiewe simptome voor geboorte.

Dertig vroue tussen die ouderdome van 16 en 38 is gedurende swangerskap gewerf uit

die plaaslike gemeenskap, Kylemore, Suid Afrika. Die vroue is geduurende swangerskap vir

verhoogde vlakke van depressiewe simptomatologie geevalueer met die gebruik van die Beck

Depression Inventory (BDI). Evaluering het weer plaasgevind drie en ses maande na

geboorte. Daar is gevind dat 18 (60%) vroue verhoogde vlakke van depressiewe

simptomotologie tydens die voorgeboorte evalueering gerapporteer het, terwyl 11 (37.9%) en

12 (48%) vroue verhoogde vlakke van depressiewe simptomotologie tydens die drie maande

en ses maande na geboorte evalueering gerapporteer het.

Daar is verder gevind dat die steekproef van die huidige studie geen betekinisvolle

verskil tussen die koers van depressiewe simptomotologie van die voorgeboorte evalueering

tot enige van die twee nageboorte evalueerings aangedui het nie. Die resultate suggereer dat

'n verhouding bestaan tussen die vlakke van depressiewe simptomatologie voor geboorte en

die vlakke van depressiewe simptomatologie na geboorte, aangesien die vroue wat hoë

vlakke van depressiewe simptomatologie gedurende swangerskap ervaar het, ook tydens die

nageboorte evaluerings hoë vlake van depressiewe simptomatologie ervaar.

Die bevindings van die huidige studie stel voor dat die klassifikasie van nageboorte

depressie as 'n unieke en afsonderlike entiteit, wat verskil van depressie wat in vroue tydens

ander stadiums voorkom en van depressie soos ervaar deur mans, misleidend mag wees.

Die term insinueer 'n depressie wat ontwikkel onderstaande aan geboorte, terwyl dit in die

huidige studie wou voorgekom asof, wanneer die depressiewe simptome na geboorte

gerapporteer was, hulle reeds tydens swangerskap sigbaar was. Die bevindings van die huidige studie suggereer daarom dat die bestaan van nageboorte depressie as 'n onderskeie diagnosis of siekte problematies is – 'n vermoede wat dikwels in die literatuur voorgestel is (Aderibigbe, Gureje, & Omigbodun, 1993; Chandran, Tharyan, Muliyil & Abraham, 2002; Cooper, Campbell, Day, Kennerly & Bond, 1988; Cox, Murray & Chapman, 1993; O'Hara, Zekoski, Phillips & Wright, 1990; Patel, Rodrigues, & DeSouza, 2002).

# CONTENTS

B: Demographic questionnaire

C: Beck Depression Questionnaire

CHAPTER ONE: INTRODUCTION AND MOTIVATION

1.1    Introduction

The term "postpartum depression" frequently appears in both lay and academic literature and is readily used by women themselves (McMahon, Barnett, Kowalenko, Tennant & Don, 2001). Despite the fact that much has been written about postpartum depression as a clinical condition and that evidence exists to suggest that a substantial proportion of women experience depressive symptomology postpartum, the question remains as to whether postpartum depression is in fact brought on by childbirth and can therefore be viewed as a distinct diagnosis (Kruger & Smit, 2002; Najman, Andersen, Bor, O'Callaghan & Williams, 2000).

Postpartum depression, whatever its cause, occurs at a challenging time in a woman's life. The transition to motherhood, although a state to which a large proportion of women aspire, changes a woman's relationships, her body, her identity, her behaviour and her future life prospects (Nicolson, 1998). Motherhood is also a public experience and a social institution in that the role of the mother is a prescribed social role and identity (Andersen, 1983; Nicolson, 1998).

Although it is no longer motherhood alone that dictates the way that women spend their lives, motherhood is still viewed as a central component of female identity (Church & Sommerfield as in Nicolson, 1999). The meaning and significance attached to motherhood is not universal, but the social contexts in which women reside provide them with powerful ideologies of motherhood that have had an impact on their experiences of motherhood, mothering and mothers. Large discourses have been constructed around all moments in the reproductive cycle of women, specifically around pregnancy, birth and the early postpartum period (Kruger, 2005). The way in which pregnancy and childbirth are constructed in society contributes towards the construction of women's lives, producing women as carers and

nurturers rather than as achievers and providers. The majority of psychological research on pregnancy and childbirth maintains the idea of women as natural mothers, reinforcing the myth of motherhood as a powerful and magical role (Nicolson, 1999; Ussher, 1989), despite the fact that documented research of women's lives as mothers indicates otherwise (Boulton; Friedman; Gavron; Oakley; Richardson as in Nicolson, 1999).

It has been argued that the traditional ideologies of motherhood as natural and easy and as something which every women desires (Lee, 1997) still conceals the many different meanings that motherhood and mothering can have for individual women (Kruger, 2005). Despite an increasing amount of choice over whether and when to have children and despite research to the contrary (Lee), popular culture and psychological discourse still view women who choose not to have children as being deviant and selfish (Reading & Amatea, 1986) and those that are unable to conceive as being tragically unfulfilled (Ussher, 1992). Whilst women experience the pleasure and pain of giving birth and of caring for their children, of giving and receiving love, they can also experience social isolation and are no longer able or unwilling to put themselves first (Nicolson, 1999).
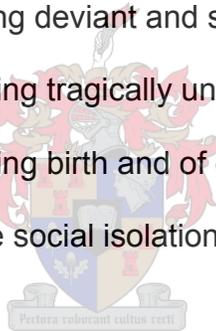
Despite women's subjective experiences, the majority of cultures still view motherhood as both natural and easy, something that every woman desires and the achievement of which results in the woman attaining true happiness and fulfillment. According to Amankwaa (2003), giving birth is often regarded as a tremendous physical and psychological event in a woman's life, signaling a time of great joy and extreme happiness. At the same time, however, other researchers regard childbirth as a crisis in women's lives, bringing about sadness and pain and placing them at increasing risk of psychological disorders (Bewley, 1999; Lee, 1997; Nicolson, 1999; Nonacs & Cohen, 1998). Cultural assumptions regarding motherhood therefore creates a striking contrast between the normal, happy mother and the pathological experience of postpartum depression (Lee).

The belief that childbirth can result in the mother experiencing a particular set of mental illness symptoms can be dated back to the writings of Hippocrates, Celsus, Galen and Esquirol (Zilboorg as in Najman et al., 2000). Although an interest in postpartum psychosis can be dated back to the early part of the 19th Century (Oates, 1988), it was not until the late 1950s, with the work of Gordon and Gordon, that mental health professionals began to take an interest in the less severe psychiatric disorders of the puerperium (O'Hara & Zekoski, 1988) and it was only in the early 1990s that postpartum mood disorders were accorded a separate category in either of the two major internationally based classification systems (Boath & Henshaw, 2001; Nicolson, 1999). The International Classification of Diseases (ICD-10) (WHO as in Boath & Henshaw; WHO as in Najman et al.) included a category for puerperal disorders, a category that can, however, only be used if the criteria for other psychiatric diagnoses are not fulfilled. The Diagnostic Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994) in turn, classifies postpartum depression as major depression, but includes the specifier '*with postpartum onset*' to describe episodes that begin within four weeks postpartum.

Whilst controversy exists around the relationship between postpartum and nonpostpartum depression in both research and practice, with some researchers and clinicians arguing that these diagnoses cannot be differentiated from one another and others insisting that postpartum depression is in fact a distinct diagnosis (Whiffen, 1992), many women continue to experience depression during the postpartum period.

1.2     Motivation for conducting current research study

In this thesis the controversy surrounding postpartum depression will be investigated in a particular way. There are several reasons as to why this controversy is important:

1.2.1   Lack of clarity surrounding the construct of postpartum depression

Despite the lack of a scientific model for postpartum depression, an implicit model has developed which is based mainly on a hormonal or biological understanding of the disorder (Nicolson, 1998). This tension between scientific 'proof' (or lack thereof) on the one hand and the implicit model on the other is very evident in the literature. For example, the research conducted to date has not found any consistency regarding the symptomatology, time of onset or duration of postpartum depression, yet postpartum depression is understood to be similar to depression occurring at other times (Smit, 2002). Given the problems with the diagnosis of postpartum depression, it is surprising that postpartum depression remains such a widely used construct (Kruger & Smit, 2002). Although women do experience depressive symptoms during the postpartum period, it is unclear as to whether they are at an increased risk for the development of depression during the postpartum period when compared to other stages in their lives (Kruger & Smit) and as to whether depression experienced during the postpartum period is in fact caused by childbirth (Najman et al., 2000).

The present study aims to determine whether a specific group of women experience any significant difference between the prevalence rates of depressive symptoms postpartum as compared to depressive symptoms prepartum. As such, it will add to a body of literature that is aimed at understanding whether postpartum depression can indeed be understood as a distinct and valid diagnosis.

1.2.2   Impact of maternal depression during the postpartum period

Researchers and clinicians contend that depression occurring during the postpartum period needs to be clearly defined and understood as it can have devastating effects not only on the mothers themselves, but also on their spouses/partners and their children (Beck & Gable, 2001a; Burke, 2003).

Beck (as cited in Beck & Gable, 2001a) described postpartum depression as a thief that robs women of the happiness and love they expected to feel towards their infant.

Mothers, in turn, describe postpartum depression as a living nightmare filled with persistent feelings of inadequacy, hopelessness (Godfroid & Charlot as in Petrou, Cooper, Murray & Davidson, 2002), uncontrollable anxiety, consuming guilt, obsessive thinking, loss and anger (Beck & Gable, 2001a). They have an increased propensity to terminate breastfeeding early (Cooper as in Petrou et al.) and to have difficulty with infant sleeping routines, infant crying and demands for attention.

Research has shown that the early experiences and emotional support provided by parents has a significant influence on the infant's behaviour and development (Susman, 1996) and that living with and being socialized by postpartum depressed mothers has significant long-term negative effects on the child's cognitive, emotional and social development (Beck & Gable, 2001a; Fuggle, Glover, Khan & Hayden, 2002; Petrou et al., 2002). These negative effects can manifest themselves as insecure attachment to the mother, impaired social functioning, cognitive deficits and behavioural disturbances at home and at school.

Research has further shown that depressed women have been found to have negative perceptions of both their babies and of their ability as a mother to feed and care for their babies appropriately (Fowles, 1998). They also have difficulty relating to their babies and often develop negative attitudes towards them, which at times results in them physically abusing their children (Susman, 1996) or committing filicide (Burke, 2003).

In addition to the impact that depressed mothers have on their children, depressed women have the potential to significantly impact on their partners' moods and research has shown that partners of depressed women are themselves at risk for mental health problems (Benazon & Coyne as in Burke, 2003). It has been further reported that spouses of depressed women report restrictions in social and leisure activities, a fall in family income, and a considerable strain on family relationships (Burke).

This section has highlighted the detrimental effects of maternal depression, specifically on children, partners and families. Although this is not the focus of the current research study, it does however highlight the importance of gaining an understanding of the causes and nature of depression during the postpartum period.

1.2.3   South Africa

A search of the available literature on depression after childbirth on the electronic database, PsychInfo, revealed that in the last fourteen years only six articles have been published on any aspect of depression after childbirth in South Africa. Of further importance is that whilst these studies looked at various aspects of depression during the postpartum period, including the effect of social support on postpartum depression (Trotter, Wolman, Hofmeyr, Nicodem & Turton, 1992), factors relating to postpartum depression (Spangenberg & Pieters, 1991), a comparison of puerperal psychosis and bipolar mood disorder (Oosthuizen, Russouw & Roberts, 1995), the effects of postpartum depression on the child (Emmanual, 1999), the methodological challenges of a mother-infant dyad intervention programme (Tomilison, Swartz & Landman, 2003) and the prevalence of postpartum depression and associated mother-infant relationships (Cooper, Tomilison, Swartz, Woolgar, Murray & Molteno, 1999), only two studies (Cooper et al.,1999; Spangenberg & Pieters) measured the extent to which postpartum depression exists in South Africa, whilst the other studies relied on international research on the existence of this disorder as a foundation for their research. A further critique of the research conducted in South Africa is that each of these studies assumed the existence of postpartum depression despite the problems associated with the diagnosis of the disorder (Kruger & Smit, 2002).

1.2.4   Conclusion

This section has highlighted the importance of gaining clarity regarding the concept of postpartum depression. It has highlighted:

1.  the fact that there is currently a lack of clarity regarding the construct;

2.  the fact that there is a paucity of available research on postpartum depression in South Africa; and

3.  the importance of gaining an understanding of the nature and causes of postpartum depression for the health of women, their children and their families.

## 1.3    Operationalization of goals

With the existence of competing ideas and a lack of clarity regarding the concept of postpartum depression, a need exists to resolve some of the competing analyses that relate to the entity of postpartum depression. According to Najman et al. (2000) there is a need to not only answer some of the important questions regarding the nature and duration of postpartum depression, but also to determine whether depression during the postpartum period is in fact precipitated by childbirth (or the change in lifestyle associated with caring for a child). Kruger and Smit (2002) state that as the need exists to answer questions relating to the prevalence of depressive symptomatology during the postpartum period, longitudinal studies that follow the same women over a period of time as well as cross-sectional studies that consist of control groups of non-childbearing women need to be conducted.

The present study is part of a larger study exploring the emotional experiences of a group of low-income women residing in a rural community in South Africa. The present study was specifically aimed at examining the controversy surrounding postpartum depression by determining whether low-income women residing in a rural community in South Africa experience any significant difference in the prevalence rates of depressive symptoms postpartum as compared to depressive symptoms prepartum. The secondary goals of the study were:

1.  To determine whether low-income women experience elevated levels of depressive symptoms prepartum;

2.	to determine whether low-income women experience elevated levels of depressive symptoms at three months postpartum; and

3.	to determine whether low-income women experience elevated levels of depressive symptoms at six months postpartum.
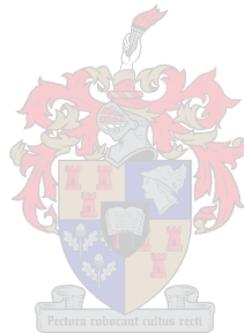
CHAPTER TWO: THEORETICAL AND METHODOLOGICAL ISSUES

2.1     Introduction

In this chapter, the theoretical and methodological issues related to the current study on depression during the postpartum period will be addressed. These are:

1.     the definitions of the key concepts used;

2.     issues related to research on depression during the postpartum period; and

3.     the various theoretical perspectives on depression during the postpartum period.

2.2     Defining postpartum depression

The spectrum of affective disorders following childbirth is traditionally divided into three categories in ascending order of severity: postpartum or "baby" blues, postpartum depression and postpartum psychosis (Beck, 2002; Boath & Henshaw, 2001; Knops, 1993; Lee, 1997; Najman et al., 2000; Nonacs & Cohen, 1998; O'Hara & Zekoski, 1988).

2.2.1   Postpartum/ "baby" blues

Postpartum/ "baby" blues is by far the most common and least serious of the three mood disorders (Boath & Henshaw, 2001; Knops, 1993; Lee, 1997; Najman et al., 2000; Nicolson, 2000; Nonacs & Cohen, 1998; O'Hara & Zekoski, 1988; Saltzberg, 2003; Stowe & Nemeroff, 1995) with an incidence of 50% to 80% (Saltzberg; Stowe & Nemeroff). It is characterized by a period of temporary moodiness that may include crying spells, sadness, irritability, impatience, restlessness, and fatigue (Boath & Henshaw; Fuggle et al., 2002; Knops; Lee). These symptoms usually begin within the first few days postpartum, last for up to ten days (Lee; Nonacs & Cohen; O'Hara & Zekoski) and usually disappear on their own (Susman, 1996). Postpartum blues has a minor functional impact (Susman) and is believed to be the result of fluctuation in hormonal levels following childbirth (Najman et al.).

2.2.2   Postpartum psychosis

Postpartum psychosis is the most severe and the most rare of the three postpartum mood disorders, with an incidence rate of 1% to 2% (Boath & Henshaw, 2001; Knops, 1993; Nonacs & Cohen, 1998; Saltzberg, 2003). Symptoms of psychosis generally occur within three days after childbirth (Knops) and include a loss of contact with reality (Saltzberg) and may include hallucinations, delusions (Boath & Henshaw) and rapid mood swings (Saltzberg). Postpartum psychosis differs from other psychotic conditions only in that the content of delusional thoughts and hallucinations are usually associated with childbirth or the baby, infanticidal intentions and behaviours may be present, and it has a somewhat more positive prognosis (Harding as in Lee, 1997).

2.2.3   Postpartum depression

Postpartum depression is the least well-defined postpartum mood disorder. Unlike "baby" blues and puerperal psychosis, which can be distinguished from depression outside of the puerperium, the evidence that postpartum depression is a distinct syndrome, or even related to reproduction, is unconvincing (Ussher as in Boath & Henshaw, 2001). Much debate has centred on whether postpartum depression is an 'atypical' disorder (Pitt as in Boath & Henshaw) or just depression occurring within the context of an incidental puerperium (Kumar & Robson, 1984; O'Hara, Zekoski, Phillips & Wright, 1990; Whiffen, 1992).

Controversy exists around the relationship between postpartum and non-postpartum depression in both research and practice (Whiffen, 1992). Whilst some researchers argue that postpartum depression is a distinct diagnosis, others argue that no differentiation can or should be made between depression occurring in the puerperium and depression occurring at other times. In order to gain a clearer understanding of the controversy surrounding postpartum depression, the various aspects of the disorder that have bearing on the definition and understanding of the concept, will now be discussed.

2.2.3.1 _Symptomatology_

According to the Diagnostic Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994), a major depressive episode is described as being a mood disorder that lasts for at least two weeks and represents a change from previous functioning. Symptoms must include either depressed mood or a markedly diminished interest or pleasure in activities present for most of the day and almost every day. Additional symptoms that may be present, depending on the severity of the disorder, include significant weight loss when not dieting or weight gain, a decrease or increase in appetite; insomnia or hypersomnia; psychomotor retardation or agitation; fatigue or loss of energy; feelings of worthlessness or excessive or inappropriate guilt; recurrent thoughts of death or suicide, or any suicidal behaviour and diminished ability to think or concentrate.

With regards to postpartum depression, the DSM-IV (American Psychiatric Association, 1994) has classified postpartum depression as major depression, but has included the specifier '*with postpartum onset'* to describe episodes that begin within four weeks postpartum.

Although it is widely believed by many clinical researchers, health care professionals and hence mothers that postpartum depression is a unique entity, different from depression at any other time of life, or depression that men, or women who are not mothers, might suffer (Nicolson, 2000), other researchers (Najman et al., 2000; Nonacs & Cohen, 1998) have argued that mood disturbances arising during the puerperium do not differ significantly from the affective disorders that are experienced at any other time of life as research has consistently shown that the symptom profile of postpartum depression is the same as depression occurring at other times. Common symptoms include depressed mood; sleep disturbance; appetite disturbance; tearfulness; rapid mood swings; irritability; despondency; anhedonia; poor concentration; fatigue; feelings of guilt and worthlessness; feelings of

inadequacy and inability to cope and suicidal thoughts (Amankwaa, 2003; Boath & Henshaw, 2001; Fuggle et al., 2002; Mauthner, 1998).

2.2.3.2 *Prevalence*

The incidence of a disorder refers to the number of new cases arising over a specific period of time, whilst the prevalence of a disorder refers to the number of cases present during a specified period of time (O'Hara & Zekoski, 1988). A distinction is made between point prevalence, which refers to the number of people who have a disorder at a specific point in time, and period prevalence, which refers to the number of people who have a disorder at any time during a specified period (Kaplan & Sadock, 1998). For researchers who study postpartum depression, the distinction between prevalence and incidence is important because of the need to distinguish between depressive episodes that arise before delivery and persist into the puerperium and those that arise during the puerperium (O'Hara & Zekoski).

There appears to be a lack of consensus amongst researchers regarding the prevalence of maternal postpartum depression, and although it is estimated that approximately 8% to15% of postpartum women in community samples experience clinically significant levels of depressive symptoms (Murray, 1992; O'Hara et al. as in Beeghly, Weinberg, Olson, Kernan, Riley & Tronick, 2002), some studies have shown that this rate may be significantly under reported. Whilst Dudley, Roy, Kelk & Bernard (2001) found postpartum prevalence rates of 47,5%, other researchers have found lower rates of 23.4% (Hobfoll, Ritter, Lavin, Hulsizer & Cameron, 1995), 27,5 % (Ballard, Davis, Cullen, Moham & Dean, 1994) and 24.5% (Areis, Kumar, Barros & Figueiredo, 1996).

The variation in prevalence rates amongst the different studies may be due to a number of factors, including the varying definitions of postpartum depression, the differences and problems associated with measurement and methodology as well as the difficulty in

determining specific periods of onset and duration (Smit, 2002). The prevalence rates of depression, and how they vary according to various definitions, will be discussed in detail in Chapter 3.

### 2.2.3.3 *Measurement*

Research on depression during the postpartum period has been plagued by measurement problems. A lack of agreement on the conceptual definition of postpartum depression is partially responsible, as many researchers have argued that there is no difference between depression occurring during the postpartum period and depression occurring at other times. As a result, measurement instruments developed to measure depression in the general population have also been used in research on postpartum women (Beck & Gable, 2001b; O'Hara & Zekoski, 1988). The Beck Depression Inventory (BDI), General Health Questionnaire (GHQ) and the Centre for Epidemiological Studies-Depression Scale (CES-D) are examples of standard depression symptom scales most often used.

The original BDI was developed by Beck, Ward, Mendelson, Mock and Erbaugh in 1961 with revised versions of the instrument, namely the BDI-IA and the BDI-II, appearing in 1979 and 1996 respectively (Beck, Steer & Brown, 1996). The various versions of the BDI consist of 21 multiple-choice items, which assess the intensity of the depression as experienced by the respondent. The 21 symptoms and attitudes, which can be rated on a scale of 0 to 3 include mood; pessimism; sense of failure; lack of satisfaction; guilt feelings; sense of punishment; self-dislike; self-accusation or self-criticalness; suicidal ideas; crying; irritability or agitation; social withdrawal; indecisiveness; distortion of body image (item dropped in BDI-II version and replaced with worthlessness); work inhibition (item dropped in BDI-II version and replaced with loss of energy); sleep disturbance; fatigability; loss of appetite; weight loss (item dropped in BDI-II version and replaced with concentration difficulty); somatic preoccupation and loss of libido (Beck et al., 1996). The BDI is scored by

adding the ratings given to each of the 21 items and the Centre for Cognitive Therapy has distributed the following guidelines for BDI cut-off scores for persons having an affective disorder: none or minimal depression is <10; mild to moderate depression is 10-18; moderate to severe depression is 19-29; and severe depression is 30-63 (Beck et al., 1988).

The GHQ is a self-report questionnaire designed by Goldberg in 1978 (Fernandez-Ballesteros, 2003) in order to detect psychiatric morbidity in general practice and medical outpatient settings. The scale has been proven to have good reliability and validity and has been widely used in research and clinical settings, including screening for postpartum depression (Lee, Yip, Chan, Tsui, Wong & Chung, 2003). The questionnaire was originally developed as a 60-item instrument but at present a range of shortened versions of the questionnaire, including the GHQ-30, the GHQ-28, the GHQ-20, and the GHQ-12, are available. The scale asks whether the respondent has experienced a particular symptom or behaviour recently and each item is rated on a four-point scale: less than usual, no more than usual, rather more than usual, or much more than usual (Montazeri, Harirchi, Shariati, Garmaroudi, Ebadi & Fateh, 2003).
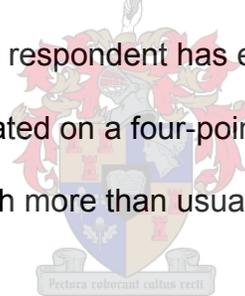
The CES-D is a widely used self-report scale designed by Radloff in 1977 (Fernandez-Ballesteros, 2003) to measure the levels of depressive symptomatology in the general population. Possible scores range from 0 to 60 with higher scores reflecting higher levels of depressive symptomatology in the past week (Boyd et al., Husaini et al. & Radolff as in Beeghly et al., 2002). The CES-D uses a cut-off of 16 or higher to indicate elevated levels of depressive symptomatology and a cut-off of 23 or higher to indicated very elevated levels of depressive symptomatology (McLennan, Kotelchuck & Hyunsan, 2001). The CES-D has been shown to have excellent psychometric properties in both clinical and epidemiological studies with diverse populations, including postpartum women (Boyd et al., Husaini et al. & Radolff as in Beeghly et al.).

Although some researchers have made use of general depression scales when screening for depression after childbirth, many researchers have argued that this is problematic (Beck & Gable, 2001b; O'Hara & Zekoski, 1988) due to the issue of symptomatic overlap between the postpartum period and depression. The assessment of general depressive symptomatology such as sleep disturbances, loss of interest in sex and decreased energy during the postpartum period is complicated by the changing physiological symptoms of early motherhood (Beck & Gable, 2001b; O'Hara & Zekoski).

In order to address the problems associated with the use of self-report general depression scales in postpartum depression research, Cox, Holden and Sagovsky (1987) developed one of the two self-report instruments specifically designed to screen for depression after childbirth. The Edinburgh Postnatal Depression Scale (EPNDS) is a 10-item self-report scale, which assesses various symptoms of depression, including the inability to laugh; inability to look forward to things with enjoyment; blaming oneself unnecessarily; feeling anxious, worried, scared or panicky; inability to cope; difficulty sleeping; feeling sad or miserable; crying and thoughts of harming oneself (Beck & Gable, 2001a). Cox et al. found that the EPNDS had a positive predictive value of 83%, sensitivity of 85%, specificity of 77%, a split-half reliability of 0.88 and a standardized alpha-coefficient of 0.87 to changes in the severity of depression over time. Cox et al. further found that women who scored above a threshold of 12/13 were most likely to be suffering from a depressive illness of varying severity.

Researchers have however been critical of the inclusion of anxiety symptoms in a scale developed specifically for measuring depression (Condon & Corkindale; Harris, Huckle, Thomas, Johns & Fung as in Smit, 2002). Brockington (1996) argued that some items do not measure what they propose to measure. For example, item seven on the scale - insomnia is

used as a measure for unhappiness, whilst items one and two compare current emotional states with pregnant states as a measure for depression.

Despite this critique, various studies have shown the validity of the EPNDS in detecting postpartum depression in both developed (Reighard & Evans, 1995) and developing countries (Fuggle et al., 2002), including South Africa (Lawrie, Hofmeyer, De Jager & Berk as in Smit, 2002).

More recently Beck & Gable (2001a & 2001b) developed the Postpartum Depression Screening Scale (PDSS), a 35-item, Likert response scale consisting of seven dimensions. The dimensions include sleeping/eating disturbances; anxiety/insecurity; emotional liability; cognitive impairment; loss of self; guilt/shame and contemplating harming oneself. A cut-off of 80 is recommended for major postpartum depression with sensitivity at 94% and specifity at 98%, whilst a cut-off of 60 is recommended for minor postpartum depression with sensitivity at 91% and specifity at 72%. According to Beck (2002) when compared to the EPNDS and the BDI, the PDSS outperformed both scales in positively identifying cases of postpartum depression.
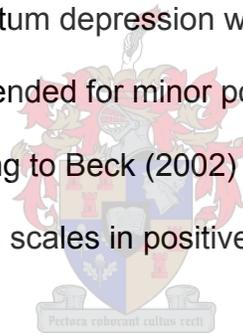
In addition to self-report measures, semi-structured and structured interviews are often conducted in order to allow for diagnostic judgments to be made regarding the presence or absence of postpartum depression. Two of the most commonly used semi-structured interviews in postpartum research are the Composite International Diagnostic Interview (CIDI) and the Schedule for Affective Disorders and Schizophrenia (SADS), whilst the revised Clinical Interview Schedule (CIS-R) is one of the most common structured interviews used in postpartum research.

The SADS is a semi-structured interview designed to yield diagnostic information about current and lifetime incidences of affective disorders and schizophrenia. The SADS is unique among rating scales in that it not only provides a detailed description of the features of the

current episodes of illness when they were at their most severe, but also provides a description of the level of severity of manifestations of major dimensions of psychopathology during the week preceding the evaluation, which can then be used as a measure of change. The SADS further includes a progression of questions and criteria, which provides information for making diagnoses; and a detailed description of past psychopathology and functioning relevant to an evaluation of diagnosis, prognosis, and overall severity of disturbance (Endicott & Spitzer, 1978).

The CIDI is a comprehensive, standardized instrument for assessment of mental disorders according to the definitions and criteria of ICD-10 and DSM-IV. It is intended for use in epidemiological and cross-cultural studies as well as for clinical and research purposes (World Health Organization, 2005, July 22).

The CIS-R is a standardized psychiatric interview for use in community and primary care studies. It consists of 14 domains that reflect non-psychotic morbidity, including somatic symptoms; fatigue; concentration; sleep; irritability; worry about physical health; depression; depressive ideas; worry; anxiety; panic; phobias; obsessions and compulsions (Nhiwatiwa, Patel & Acuda, 1998).

Most of the critique regarding the interview as an assessment technique is focused on the reliability of the diagnostic assessment (O'Hara & Zekoski, 1988). If women are identified as depressed and in need of treatment, based on the choice of measurement used, the implications for both clinicians and researchers is significant (Beck & Gable, 2001a). The need for rigorous assessment strategies in order to clearly differentiate normal from abnormal reactions to childbirth is therefore essential.

A further critique regarding choice of measurement instrument is based on the problem associated with cross-cultural measurement. The majority of measuring instruments used in research on postpartum depression were designed and validated by researchers in the

developed world for use on populations residing in the developed world. By using these instruments among populations residing in the developing world, researchers are neglecting the fact that the research participants in their studies have different cultural beliefs and either a different or no understanding of the concept of depression as understood by those in the developed world (Swartz, 1998).

*2.2.3.4 Onset*

A further consideration in assessing the existence and extent of depression after childbirth as a community health problem is the timing and onset of the depression (Najman et al., 2000). Although there is little consensus in the literature regarding the onset of postpartum depression, if the depression precedes the birth of the child and continues into the postpartum period, then it is considered to be misleading to categorize such pre-existing depression as a case of postpartum depression (Najman et al.). Although the DSM-IV (American Psychiatric Association, 1994), classifies postpartum depression as depressive episodes that begin within four weeks postpartum, researchers have argued that any depression occurring within five weeks (Cox, Murray & Chapman, 2003), three months (Verkerk, Pop, van Son & van Heck, 2003; Wisner, Perel, Peindl & Hanusa, 2004) or six months (Ingram, Greenwood & Woolridge, 2003) after the birth of a child can be classified as postpartum depression.

*2.2.3.5 Duration*

There are no conclusive findings as to the duration of the disorder. Although Najman et al. (2000) found that symptoms do generally not continue beyond a few weeks, Mauthner (1998) found that whilst most cases resolved within less than six months, some cases have been found to last up to four years.

The question that needs to be addressed when evaluating findings on the duration of postpartum depression is for how long after delivery can the presence of depressive

symptoms still be regarded as postpartum depression (Smit, 2002)? Clearly a woman who is still depressed four years after giving birth is qualitatively different from a woman whose depression has resolved within a few weeks or even months after giving birth? When comparing the course and recurrence of postpartum depression between women who experienced depression for the first time postnatally as compared to women for whom depression during the postpartum period was a recurrence of a pre-existing mood disorder, Cooper & Murray (1995) found that the former group of women experienced the disorder for a much shorter duration than those for whom the depression was a recurrence of a pre-existing illness. Although the reason for these findings is unclear, Brockington (1996) states that brief depression could be related to the puerperium while prolonged depression could be due to vulnerability factors in the childbearing population that is unrelated to childbirth.

### 2.2.3.6 *Timing of observations*

The timing of observations is another issue that has had an impact on research regarding the concept of postpartum depression. There has been considerable debate regarding the time at which the assessment of postpartum depression is made, with the period being covered by researchers varying between two days (Ghubash & Abou-Saleh, 1997), eight weeks (Johnstone, Boyce, Hickey, Morris-Yates & Harris, 2001), two to three months (Murray, 1992), six months (Cox et al., 1993) and one year (Beeghly et al., 2002) postpartum. Most studies on postpartum depression have used prospective designs in which women are recruited during pregnancy or shortly after delivery and followed through the postpartum period (O'Hara & Zekoski, 1988). The advantage of prospective designs is that subjects are more likely to report accurately on their current feelings and current events than on feelings or events that had occurred in the past. If assumed, predictive variables are measured prior to the measurement of the outcome variables and there is less chance that bias on the part of the subject or the investigator will colour the measurement of the predictor

variables. In retrospective designs, such bias however, works in favour of confirming the subjects' and investigators' hypothesis regarding the causes of depression during the postpartum period (O'Hara & Zekoski).

*2.2.3.7 Conclusion*

In the preceding section an attempt was made to highlight not only the difficulties associated with research on postpartum depression, but also the various factors that have bearing on the definition and understanding of the concept and the controversy surrounding the disorder as a distinct diagnosis.

2.3    Other important definitions

2.3.1   Developing and developed world

Epidemiological research suggests that there are high rates of postpartum depression and that women in developing countries are likely to suffer from higher rates of depression in the postpartum period than women in developed countries (Cooper et al., 1999). It is therefore important for the purpose of this study that a distinction be made between studies conducted in developed and developing countries.

There is no established convention for the designation of developed and developing countries or areas in the literature. In common practice, Japan in Asia, Canada and the United States in northern America, Australia, New Zealand and Europe are considered developed regions or areas (United Nations, 2005, August 10). The developing or non-developed countries therefore include those in Asia (excluding Japan), Africa, the Middle East and South America and are characterized by poverty, high birthrates, and economic dependence on the developed countries (Chaliand, 2005, August 10). For the purpose of this study the classification of developed and developing countries as outlined by the United Nations, will be utilized.

2.3.2   Depression versus depressive symptomatology

The term "depression" is used very loosely throughout the literature to refer to both a Major Depressive Episode, as defined by DSM-IV or ICD-10 criteria, as well as to depressive symptoms as indicated by a symptom checklist.

For the purpose of this research study, "depression" will refer to a Major Depressive Episode as defined by DSM-IV or ICD-10 criteria. It therefore refers to a period of at least two weeks where there is a depressed mood or the loss of interest or pleasure in nearly all activities and at least five additional symptoms. Additional symptoms that may be present, include significant weight loss when not dieting or weight gain, a decrease or increase in appetite; insomnia or hypersomnia; psychomotor retardation or agitation; fatigue or loss of energy; feelings of worthlessness or excessive or inappropriate guilt; recurrent thoughts of death or suicide, or any suicidal behaviour and diminished ability to think or concentrate (Kaplan & Sadock, 1998). Depressive symptomatology will therefore refer to any symptoms of depression that cause individual psychosocial impairment but do not meet with the diagnostic criteria for depression.

### 2.3.3  Longitudinal, cross-sectional and two phase screening research designs

Researchers have used various designs when conducting research on postpartum depression and depressive symptomatology. For the purpose of the current research study the following definitions are used to distinguish between the various designs. The longitudinal research design refers to designs in which a series of observations or measurements were made over an extended period of time and involved the collection of data at different points in time (Babbie, 1998). The cross-sectional research design refers to research based on observations representing a single point in time (Babbie, 1998), whilst the two phase design method refers to research studies where a population sample was screened at two different points in time in order to obtain a definite diagnosis of the potential cases as screened at the first assessment (Duncan-Jones & Henderson, 1978).

2.4     Theoretical perspectives on depression during the postpartum period

Although there are various perspectives, including anthropological and psychoanalytical models, on postpartum depression (Mauthner, 1999), the medical, biopsychosocial and feminist perspectives appear to be the most prominent theoretical perspectives on depression during the postpartum period (Beck, 2002; Mauthner, 1998 & 1999; Nicolson, 1998 & 1999). Whereas the medical model emphasizes individual characteristics that predispose women to becoming depressed after childbirth, the social science perspectives stresses external, psychosocial factors which act as stressors (Nicolson, 1998). The feminist perspective in turn emphasizes women's gendered subjectivities and the inequalities that women face in public and domestic spheres – inequalities that researchers believe lie at the root of postpartum depression (Mauthner, 2002). These three perspectives will be discussed below.

2.4.1  Medical model

Western societies are dominated by a medical approach to the interpretation of psychic pain. As the sociologist David Karp (Mauthner, 2002, p.4) wrote, in the western world there is a "culturally induced readiness to view emotional pain as a disease requiring intervention". Whether one chooses to accept or reject this medical view of mental illness, it forms the backdrop to the way of thinking about emotional pain. This model focuses on the physical processes, such as the pathology, the biochemistry and the physiology of an illness and does not take external, psychosocial factors into account in the cause and treatment of a disorder.

The medical model is the most dominant model in terms of academic, professional and lay understandings of postpartum depression. As with other disorders, the medical model views postpartum depression as a medical condition, it conceptualizes depression during the postpartum period as a disease or illness, with researchers focusing on describing, predicting, treating and preventing it (Mauthner, 1998 & 1999). Postpartum depression is viewed as a

pathological condition based on deficiencies pertaining to the individual mother (Beck, 2002) and is often seen as an irrational, inevitable response to the physiological or psychological changes that occur during childbirth (Nicolson, 1999). There are two basic perspectives from which to view research on the biological factors associated with postpartum depression. The first perspective views postpartum depression as sharing characteristics fundamental to depression occurring at other times and factors that are studied include cortisol as well as neurotransmitters and neurotransmitter precursors. The second perspective focuses more on the special features associated with postpartum mood disorders and potential hormonal dysfunction and biological factors of interest are those that show changes during pregnancy, such as oestrogens, progesterone and prolactin (O'Hara & Zekoski, 1988). Research based on the medical model therefore focuses on the task of uncovering the underlying causal or correlated biological factors (Mauthner, 1998) associated with depression after childbirth as researchers attempt to understand postpartum depression in an objective way (Mauthner, 1998; O'Hara & Zekoski).

The medical model has come under increasing attack within psychology, in particular by feminist, post-structuralist and constructionist academics (Mauthner, 1999).

The assumption that postpartum depression is caused by 'raging hormones' persists despite the lack of any evidence relating postpartum depression consistently to any physiological variable (Whiffen, 1992). The critique of this model is therefore based on the fact that there is little empirical support among researchers for a biological basis for depression in the postpartum period and the question is raised that if depression after childbirth is brought about because of hormonal changes, as suggested by this model, why is it that a significant number of women do not get depressed at this stage (Nicolson, 1999)?

A further critique of this model is its individualistic approach (Mauthner, 1999) as depression after childbirth is regarded as a pathological condition rooted in deficiencies

pertaining to the individual mother. Taking the individual as the basic unit of analysis excludes looking at the broader social, political, economical and structural contexts and the ways in which they intersect with the individual woman's circumstances.

Although the medical model offers only limited theoretical insight into the nature and dynamics of women's feelings of depression, it is important to recognize that in practice, elements of the medical perspective are valued by some women (Mauthner, 1998).

2.4.2  Biopsychosocial model

The biopsychosocial model of medicine is a way of looking at the mind and the body of a patient as two important systems that are interrelated. It  treats the biological, psychological and social issues as systems of the body and it states that the workings of the body can affect the mind, and the workings of the mind can affect the body (Engel, 1977).

According to the biopsychosocial model, the biological, psychological and social levels are dynamically interrelated and these relationships affect both the process and outcomes of care. It acknowledges the fact that psychosocial factors can cause a biological effect by predisposing the patient to risk factors. The biopsychosocial perspective involves an appreciation that disease and illness do not manifest themselves only in terms of pathophysiology, but may also simultaneously affect many different levels of functioning, from cellular to organ system to person to family to society (Engel, 1977).

In an attempt to depathologize the experience of childbirth and prevent a reductionistic understanding of postpartum depression, the biopsychosocial model has examined various factors that may play a role in the development of depression after childbirth (Smit, 2002).

Pregnancy and birth are often regarded as stressful life events and it has been suggested that the stressfulness of these events may lead to depression (Holmes & Rahe in O'Hara & Zekoski, 1988). Researchers have however found that the existence of additional

stressful life events during pregnancy and the postpartum period may play a causal role in the development of postpartum depression (Dudley et al., 2001; Johnstone et al., 2001).

The biopsychosocial model also regards the social context in which women function at the time of childbirth as having an important influence on their mental health status (O' Hara & Zekoski, 1988). Several studies have evaluated the role of social support in reducing the chances of postpartum depression. These studies have found that poor marital and social relationships (Murray 1992), single parenthood (Lane, Keville, Morris, Kinsella, Turner & Barry, 1997; Wickberg & Hwang, 1997; Zelkowitz & Milet, 1995) and a poor relationship with the maternal parents (Cutrona as in Smit, 2002) have all been associated with the development of postpartum depression.

Studies have also shown an association between both pregnancy and delivery complications (Campbell and Cohn, 1991) and parity (Kumar, Calheiros, Matos and Figueiredo, 1996) and a diagnosis of postpartum depression.

Although the literature shows that there is an association between postpartum depression and certain psychosocial variables, the nature of the relationship between social factors and postpartum depression has not been established (O'Hara & Zekoski, 1988). Whilst a breakdown of support structures may lead to postpartum depression, the possibility exists that postpartum depression may be responsible for the breakdown of these support structures. The biopsychosocial model therefore has a problem with linearity, as the model does not acknowledge that social factors have an impact on biological factors and vice versa.

A further critique of the biopsychosocial perspective on postpartum depression is based on methodological flaws associated with the research on psychosocial variables, including the criteria used to define and study postpartum depression (Smit, 2002) and the poor measurement of constructs (O'Hara & Zekoski, 1988).

The biopsychosocial perspective embraces a more liberal, broader view of the individual in context than the medical model as it conceptualizes the mother as a potential victim of social stressors. Although this model proposes the view that depression after childbirth is an understandable reaction to stress, it fails to identify how the experience itself varies between individuals (Nicolson, 2000).

2.4.3   Feminist model

In the social sciences, feminist research incorporates two distinct but complimentary goals. The first goal is a humanistic, value orientated one, where political change and commitment to social justice are primary. The second goal emphasizes reflexivity (of both researcher and subjects), subjective experience, cognitive structures, intuition, personal biographies and feelings. Incorporating these goals, the spirit of feminist research involves not only consciousness seeking, but a consciousness raising process as well (Pirie, 1988).

Feminist enquiry therefore involves the critical study of women, whilst attempting to change the broader society. It focuses on the social and political oppression of women and attempts to change the status quo through academic research and political advocacy. It examines the ideological, ontological and epistemological basis of claims to 'truth' (Burman & Parker; Burr; Busfield; Parker; Usher as in Smit, 2002) and attempts to show how ideology and power interact and influence race, class and gender to shape notions of 'other' and have become reified truths (Burman & Parker; Busfield; Foucult as in Smit).

Feminist academics argue that a medical disease model, in which depression after childbirth is seen as an individual pathology, is inappropriate because it obscures the social-political nature and contexts of women's distress. Divisions exist within feminist thinking with regard to postpartum depression. One strand of research is dominated by a structural approach in which postpartum depression is seen as a normal and understandable response to the oppressive conditions of motherhood within many societies. These researchers

highlight the wider structural conditions in which parents must raise their children and they link depression to women's inferior status in society and to structural conditions and constraints, including the medicalization of childbirth, poor provision of state-funded childcare, current labour market structures and policies, inadequate parental leave options, the loss of occupational status and identity, isolation, and gendered division of household labour. Given such conditions they argue that it is "normal" that mothers become depressed (Mauthner, 1998 & 2002).

This tradition of work has tended to emphasize the losses associated with motherhood as being responsible for the development of postpartum depression. According to this theory, becoming a mother entails a loss of self, occupational status and identity, autonomy, physical integrity, time, sexuality and male company. Postpartum depression is therefore seen as a form of bereavement – a grief response to these losses and above all, to the mother's lost identity (Mauthner, 2002).

A different strand of feminist research explores not only the structural and material conditions of women's lives, but also cultural attitudes towards motherhood, femininity and postpartum depression. These social constructionist researchers argue that structural approaches are overly deterministic and neglect women's agency and the ways in which they actively negotiate the social contexts in which they live (Mauthner, 2002).

Social constructionist feminists argue that "mental illness" should be seen as a label or a social construct, which serves to maintain an oppressive system, which reinforces sexual inequality and disempower women by defining them as mentally ill.

Social constructionists stress the relationship between meaning and power, with language as a sign system used by the powerful to label and define to the disadvantage of women and those less powerful (Foucault as in Haw, 2000). These theorists view gender as a social construct that is constituted in social interaction. They view mental disorders, such as

depression, as being created as discursive objects, which serve to decontextualize women's experience and subsequently reconstitute it as a symptom. They therefore examine mental disorders in order to elaborate how these problems are manifested in women's lives, to re-link them to experiences of oppression, discrimination and relative powerlessness and to uncouple them from psychiatric discourse, which locates the difficulty within the person (Haw).

It is thought that the social construction of motherhood as natural and fulfilling and of the mother-child relationship as immediately and unambiguously positive (Lee, 1997) may play an important role in the development of depression in new mothers. The ethic of care that places the mother as the central figure in the childrearing process may be an important contributing factor to the high rates of depression in the postpartum period amongst women. From this perspective, depression after childbirth occurs when women are unable to experience, express and validate their feelings and needs within supportive, accepting and non-judgmental interpersonal relationships and cultural contexts (Mauthner, 1999). Consequently, social constructionist researchers view depression after childbirth as a social construction, rather than a medical condition. They regard the label "postpartum depression", which suggests individual pathology and abnormality, not only as inappropriate but also as a form of social and medical control, and argue that it should be abandoned (Mauthner, 1998).

While feminist research has done a good job of mapping the cultural and structural restrictions of women's lives, there is still a need to explore the different ways in which individual women deal with the ideologies, meanings, practices and social conditions of motherhood. The tendency of some feminist researchers to assume that social structures and cultural discourses affect women in a uniform way, and to present women's responses to motherhood as homogenous and universally negative, leaves unanswered the question of why some women become depressed following childbirth and others do not (Mauthner, 2002).

2.4.4   Conclusion

The three theoretical perspectives that appear to be the most prominent perspectives on depression during the postpartum period (Beck, 2002; Mauthner, 1998 & 1999; Nicolson, 1998 & 1999) have been discussed in this section. An attempt has been made to provide a brief overview of these approaches, highlighting their limitations as well as their contributions to our understanding of depression during the postpartum period.

With regards to the controversy surrounding the definition of postpartum depression, the three perspectives take very different standpoints. Whilst the medical perspective is based on the understanding that postpartum depression is a medical condition brought on by the physiological changes that occur during childbirth, more specifically the hormonal changes that take place following labour (Mauthner, 1998 & Nicolson, 1999), the biopsychosocial model focuses on the various factors that may play a role in the development of depression after childbirth (Mauthner, 2002). The feminist constructionist perspective in turn, views postpartum depression as a social construction rather than a medical condition (Mauthner, 1998), whilst another strand of feminist researchers view postpartum depression as a normal and understandable response to the oppressive conditions of motherhood within many societies. Research studies that are founded in the medical model therefore assume the existence of the disorder and have therefore focused on describing, predicting, preventing and treating the illness. In comparison, those studies that are founded in the feminist perspective explore women's subjective experiences and assessments of their depression, including its time of onset, duration and its perceived contributing factors (Mauthner, 1999), whilst the biopsychosocial perspective conceptualizes the mother as a potential victim of social stressors (Nicolson, 2000).

The current study formed part of a larger study run by the Women's Mental Health Research Project (WMHRP) at the University of Stellenbosch, which is founded in the social

constructionist feminist perspective and aims to obtain a clearer understanding of the mental health and mental health needs of low-income women in one specific community, by focusing on the prenatal and antenatal period. However, the current study was conducted from a positivist empirical framework, and is based on the hypothesis that women do not experience any change in mood postpartum in comparison to their mood status prepartum. It aims to determine whether low-income women residing in a rural community in South Africa experienced any change in the prevalence rates of depressive symptoms postpartum as compared to the prevalence rate of depressive symptoms prepartum.
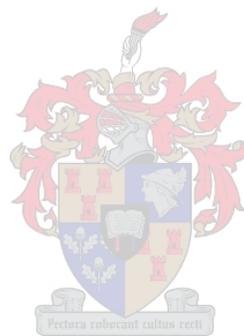
CHAPTER THREE: REVIEW OF LITERATURE

3.1     Introduction

This chapter will start with a brief overview of the rates of depression and depressive symptomatology in the general population. This will be followed by a review of the literature on the incidence and prevalence of depression occurring in the prepartum and postpartum period. In order to make accurate and meaningful comparisons, distinctions have been made between those studies conducted in developed countries and those studies conducted in developing countries. A further distinction is made, based on the study designs, between longitudinal studies, two-phase design studies and cross sectional studies.

3.2     Rates of depression amongst the general population

According to the World Health Organization (WHO) an estimated 121 million people worldwide suffer from depression. It is estimated that 5.8% of men and 9.5% of women will experience a depressive episode in any given year, and that women have a lifetime risk of major depression of 20% to 25% in contrast to men's risk of 7% to 12% (WHO, 2001). Although these figures may vary across different population groups, research has shown that among low-income women from ethnic and racial minority groups, rates of depression are higher than those of their white counterparts (Cunningham & Zayas, 2002).

3.2.1   Studies conducted in the developed world

Large-scale research studies have reported that up to 2.5% of children and up to 8.3% of adolescents in the United States suffer from depression. In addition, research has discovered that in a given year, between 1% and 2% of people over the age of 65 living in the community, i.e., not living in nursing homes or other institutions, suffer from major depression and about 2% have dysthymia (National Institute of Mental Health, 1999).

The findings by the National Institute of Mental Health (1999) were confirmed by Druss, Hoff and Rosenheck (2000) who assessed 7589 individuals (aged 17-39) drawn from a

nationwide sample for the prevalence of depression. The young adults, residing throughout the United States, were assessed using the Diagnostic Interview Schedule and the results showed that 312 (4.1%) of the sample met with DSM-III criteria for the diagnosis of current major depression.

Patten (2000) aimed to estimate the 12-month period prevalence of major depression amongst adults aged eighteen or older in Calgary, Canada. A sample of 2542 subjects were selected using random digit dialing and interviewed by telephone using the Composite International Diagnostic Interview-Short Form for Major Depression. A subset of this sample was recontacted and administered the full mood disorders section of the CIDI. Patten found that the estimated 12-month period prevalence of major depression was approximately 11%.

Aluoja, Leinsalu, Shlik, Vasar and Luuk (2004) made use of the Emotional State Questionnaire to estimate the prevalence of depressive symptomatology in the Estonian population. Interviewing a sample of 4677 Estonians (aged 15-79), Aluoja et al. found a prevalence rate for elevated levels of depressive symptomatology of 11.1%. Aluoja et al. further found that the prevalence rate of elevated levels of depressive symptomatology was more common in women (14.9%) than in men (6.7%).

Wilhelm, Mitchell, Slade, Brownhill and Andrews (2003) examined the current (30-day) prevalence and correlates of major depression in the adult population in Australia. Data were derived from a national sample of 10 641 people surveyed using the computerized version of the CIDI Version 2.1. Wilhelm et al. found that the total prevalence of DSM-IV Major Depression was 3.2% (males 2.4%, females 3.9% with the highest rate for females in mid life), which was similar to the ICD-10 rate at 3.3% (males 2.4%, females 4.2%).

Olsen, Mortenson and Bech (2004) aimed to determine the prevalence rate of depressive symptomatology in the Danish general population by using the Major Depression Inventory (MDI), a self-rating scale fulfilling the symptomatic criteria of the DSM-IV and ICD-

10 for a depressive disorder. The sample included 1205 (60% of original sample) Danes, aged 20-79, drawn randomly from the civil registration system in Denmark. Olsen et al. found a prevalence rate of 3.3% in terms of DSM-IV depressive symptomatology and 4.1% in terms of ICD-10 depressive symptomatology.

Michalak, Wilkinson, Hood, Srinivasan, Dowrick and Dunn (2002) aimed to determine the prevalence and risk factors for depression in a rural area of North Wales. One thousand two hundred and thirty nine people randomly selected from a health authority database underwent a two-phase screening method to identify depression. The first phase involved participants completing the BDI and in the second phase, those scoring above cut-off on the BDI underwent a detailed diagnostic interview (Schedules of Clinical Assessment in Neuropsychology). Michalek et al. found a prevalence rate of 6.1% for depressive disorders and 5.1% for major depressive disorder.

The prevalence rate of depression in the above studies range from 3.2% to 11% with women showing higher prevalence rates than their male counterparts. Similarly, the studies assessing depressive symptomatology show prevalence rates ranging from 3.3% to 11.1% and that, as with depression, depressive symptomatology is more common in women than in men.

3.2.2   Studies conducted in the developing world

Cho, Nam and Suh (1998) made use of the CES-D to assess the prevalence of depressive symptomatology in a nationwide sample of Korean adults (aged 20-59 years). Using a cut-off of 16 (probable depression), Cho et al. found the prevalence of depressive symptomatology to be 50.5% (23.1% amongst males and 27.4% amongst females) compared to a prevalence rate of 17.2% (6.8% amongst males and 10.4% amongst females) when using a cut-off of 25 (severe definite depression).

Bolton, Neugebauer and Ndogoni (1999) aimed to estimate the prevalence of Major Depressive Disorder among Rwandans five years after the 1994 genocidal civil war. The researchers interviewed a community-based random sample of adults in the rural parts of Rwanda using the Depression Subscale of the Hopkins Symptoms Checklist-25 and using an algorithm based on the DSM-IV symptom criteria. Of the 368 respondents interviewed, the prevalence of depression was found to be 15.5% compared with 17.9% for symptom depression.

Vorcaro, Lima-Costa, Baretto and Uchoa (2001) aimed to determine the prevalence of depression in a Brazilian community. The CIDI ws applied in a random sample of 1041 residents aged eighteen years and older and the researchers found a prevalence rate of depression of 7.5%.

Rumble, Swartz, Parry and Zwarenstein (1996) aimed to assess the prevalence of psychiatric morbidity amongst 481 randomly selected adults residing in a rural village in South Africa. Using the Self-Report Questionnaire and the Present State Examination (PSE), Rumble et al. found a prevalence rate of depressive symptomatology of 18%.

The studies conducted in developing countries show prevalence rates of depression ranging from 7.5% to 15.5% compared to the prevalence rates of elevated levels of depressive symptomatology, which range from 17.2% to 50.5%. As was the case in the developed world, women appear to be more at risk for both depression and elevated levels of depressive symptoms than their male counterparts.

3.2.3   Conclusion

The research on the prevalence rates of depression and depressive symptomatology indicate that people residing in the developing world appear to be more at risk for the development of depression and depressive symptomatology than those residing in the developed world. Variation in methodological factors such as sample size and measurement

instruments used prevents any definite conclusions from being drawn. What is however clear is that in both developed and developing countries, women are more at risk for the development of depression and depressive symptomatology than their male counterparts.

3.3    Rates of depression amongst pregnant women

Since clinical lore has long viewed pregnancy as a time of emotional well-being, little research has been conducted that has focused on the prevalence rates of depression during pregnancy. Although mood disorders are common amongst women and often emerge during the childbearing years, pregnancy has generally been viewed as a time of emotional well-being (Llewellyn, Stowe & Nemerhoff, 1997; Nonacs & Cohen, 2002). Depressive symptoms in pregnant women, such as fatigue and changes in sleep and appetite, can be difficult to distinguish from the normal experiences of pregnancy. As with the research on postpartum depression, the literature on the prevalence of depression during pregnancy is complicated by the various methodologies and procedures used (Altshuler, Hendrick & Cohen, 1998). A review of the current literature does however show that women experience clinically significant depressive symptoms during pregnancy.

3.3.1   Studies conducted in the developed world

Pajulo, Savonlahti, Sourander, Helenius and Piha (2001) evaluated 391 Finish women who were 14 to 37 weeks pregnant for the presence of depressive symptomatology. Using the EPNDS and a cut-off point of 12/13, Pajulo et al. found that 7.7% of the women were found to have elevated levels of depressive symptomatology.

Zayas, Cunningham, McKee and Jankowski (2002) assessed for depressive symptomatology, social support and life events amongst 148 African-American and Hispanic women with uncomplicated pregnancies. Using the BDI-II to assess for depressive symptomatology, Zayas et al. found that 51% of the women had elevated levels of depressive symptomatology.

Holcomb, Stone, Lustman, Gavard and Mostello (1996) made use of the BDI and the National Institute of Mental Health Diagnostic Interview Schedule to determine the prevalence of depression amongst a sample of 105 pregnant American women. Using the Diagnostic and Statistical Manual of Mental Disorders-III-R, Holcomb et al. found that 12 women (11%) met with the criteria for a diagnosis of depression.

De Tychey, Spitz, Briancon, Lighezzelo, Girvan, Rosati, Thockler and Vincent (2005) assessed 277 pregnant French women for elevated levels of depressive symptomatology between the 26th and 35th weeks of pregnancy. Using the EPNDS, the GHQ and Carver's coping scale, de Tychey et al. found a prevalence rate of depressive symptomatology of 19.1% amongst the women.

Hobfoll et al. (1995) assessed a sample of 192 low-income, inner-city American women for clinical depression during the 2nd and 3rd trimester of pregnancy. Using the SADS and a shortened version of the BDI, Hobfoll et al. found that eighty women (41.7%) met with the RDC criteria for either major or minor depression during either of the two prepartum assessments. The point prevalence estimates for the first and second prepartum assessments were 27.6% and 24.5% respectively.

Areias et al. (1996) conducted research on 54 first time mothers from various socio-economic backgrounds attending obstetric services in Operto, Portugal. Using the SADS and the Portuguese version of the EPNDS to assess the women during the sixth month of pregnancy, Areis et al. diagnosed 16.7% of the women as suffering from depression.

The prevalence rates of elevated levels of depressive symptomatology amongst pregnant women residing in developed countries ranged from 7.7% to 51%, whilst the prevalence of prenatal depression ranged from 11% to 41.7%. The variation in ranges of prevalence rates between the two groups could possibly be attributed to differences in

methodological issues, including timing of assessment, sample sizes and measuring instruments.

In comparison to the general population, the rates of both depression and depressive symptomatology appear to be far higher amongst pregnant women. Although this can possibly be attributed to methodological issues, it does suggest that pregnant women experience elevated levels of depressive symptoms as compared to their non-pregnant counterparts.

3.3.2   Studies conducted in the developing world

Chandran, Tharyan, Muliyil and Abraham (2002) made use of the CIS-R to assess the prevalence of depression amongst 359 low-income pregnant women living in a rural development block in Tamil Nadul, South India. The overall prevalence rate of prenatal depression was found to be 16%.

Lee, Chan, Sahota, Yip, Tsui and Chung (2004) aimed to assess the prevalence rate of depression amongst a group of Chinese women. At 38 weeks of pregnancy, 157 women were interviewed using the non-patient version of the Structured Clinical Interview for DSM-IV (SCID-NP). Among the 157 women interviewed, Lee et al. (2004) found that the 1-month prevalence rate for antenatal depression was 4.4% and concluded that a significant proportion of Chinese women suffer from psychiatric morbidity during pregnancy.

The prevalence rates for elevated levels of depressive symptomatology amongst pregnant women residing in developing countries was found to be 4.4%, whilst the prevalence rates for prenatal depression was found to be 16%. Although these rates are lower in comparison to the rates found for developed countries, due to the limited number of studies conducted in the developing world, as well as the differences in methodological issues amongst the various studies, it is difficult to draw meaningful conclusions. As was the case with research conducted in the developed world, the studies suggest that pregnant women

are more at risk for the development of depression and depressive symptomatology than men and non-pregnant women.

### 3.3.3  Conclusion

The research on depression indicates that in both developed and developing countries, pregnant women appear to be at greater risk for the development of depression than men and non-pregnant women.

Research has shown that women with histories of major depression appear to be at high risk for recurrent depression during pregnancy (Llewellyn et al., 1997). However, for about one third of the women who become depressed during pregnancy, it is their first episode of depression. Other risk factors for depression during pregnancy have been identified, including a family history of depression, marital discord, recent adverse life events and unwanted pregnancy (Llewellyn et al.).

### 3.4  Studies that assess the incidence and prevalence of depression during the postpartum period

In this section, studies that assess the incidence and prevalence of depression during the postpartum period will be discussed.

### 3.4.1  Studies conducted in the developed world

The majority of research on the prevalence of postpartum depression appears to have been conducted in the developed world. In this section 19 studies conducted in various countries, including the United States, the United Kingdom, Australia, Sweden, Switzerland, Austria, Portugal and Turkey will be discussed.

### 3.4.1.1  *Cross-sectional studies*

Zelkowitz and Milet (1995) undertook to estimate the prevalence of postpartum depressive symptomatology in a sample of Canadian women by means of telephonic screening. Over a period of 17 months, 1559 (75% of original sample) childbearing women

who were either married to or cohabiting with their partners and 60 single women were screened at six weeks postpartum. Using a cut-off of ≥ 12 for the EPNDS, the prevalence of depressive symptomatology was found to be 3.4% for women in a couple relationship and 6.2% for single women. In addition to single status, the researchers found that women who were not working, or those with lower occupational status were at greater risk for experiencing elevated levels of depressive symptomatology during the postpartum period. The researchers concluded that telephone screening for postpartum depressive symptomatology is feasible, and can aid in the identification of women at risk for elevated levels of postpartum depressive symptomatology.

Another study that made use of the EPNDS was that of Reighard and Evans (1995) who evaluated the use of the EPNDS as a screening tool for determining the incidence of postpartum depressive symptomatology in 181 females receiving their pre- and postnatal care in a rural maternity clinic in the United States. Women were administered the test when they came to the clinic for their postpartum visit and using a cut-off score of ≥ 12, 36 women (19.9%) received scores indicating the presence of elevated levels of postpartum depressive symptomatology. The researchers found that the results support the use of the EPNDS as a screening tool for elevated levels of postpartum depressive symptomatology, and conclude that the scale can be administered in a short period of time and scored immediately.

Kumar et al. (1996) examined the point prevalence of elevated levels of depressive symptomatology in a representative and unselected sample of childbearing women living in a Portuguese city, who were tested between two and five months postpartum. As all mothers are encouraged to have their children vaccinated at three months of age, the researchers were able to make contact with the mothers when they took their children to be vaccinated. The women who agreed to participate in the study were asked to identify potential controls – i.e. close friends who were of similar age and non-childbearing for the past two years. The

118 mothers and controls were assessed using the Portuguese version of the EPNDS and the Zung self-rating depression scale. The majority of the group was assessed between 9 and 20 weeks postpartum and the point prevalence of elevated levels of depressive symptomatology, estimated by using a cut off score $\geq$ 13, was 16,1% in childbearing women compared to 7.6% in the control group, indicating a significant difference between the two groups. Although the search for associations was limited by the methodology of the study, the researchers observed that parity and lower occupational status significantly contributed to the risk of depression.

Righetti-Veltema, Conne-Perreard, Bousquet and Manzano (1998 & 2002) recruited an unselected sample of 480 Swedish women from the University Maternity Hospital (medium and low socio-economic conditions and high risk pregnancies) and 90 women from a private antenatal preparation centre (more favourable economic conditions and lower risk pregnancies) during their last trimester of pregnancy. At three months postpartum, these 570 women were assessed using the EPNDS in order to determine the prevalence of depressive symptomatology. Using a cut-off of $\geq$ 12, Righetti-Veltema et al. found that 58 mothers (10.2%) met with the criteria for elevated levels of postpartum depressive symptomatology. The researchers further found a variety of risk factors to be associated with elevated depressive symptomatology scores, including being non-European, having a low-income or having experienced more events that can be considered losses.

Dudley et al. (2001) made use of the EPNDS when investigating the psychological correlates of elevated levels of depressive symptomatology in fathers and mothers during the first postpartum year. All participants came from a socio-economically diverse area of Sydney and a wide variety of social and occupational groups were represented. The sample comprised of parents attending a mothercraft hospital for parents who had infants with feeding and settling difficulties, a daycare centre attached to the hospital and early childhood

centres. The EPNDS was used to access the severity of elevated levels of depressive symptomatology in parents from one to six months postpartum. One hundred and ninety three mothers completed the EPNDS and a total of 75 (47.5%) women and 45 (48.9%) fathers had an EPNDS score $\geq$ 13, indicating the presence of elevated levels of depressive symptomatology. Dudley et al. further found that while elevated levels of depressive symptomatology was not associated with past adverse natal experiences such as miscarriages or premature births, it was influenced by experiences that occurred during pregnancy and by infant related difficulties. The researchers further found that there was a moderate degree of correlation between maternal and paternal elevated levels of depressive symptomatology in this sample and highlighted the importance of considering the possibility of paternal depression.

Another study conducted in Australia was that of Johnstone et al. (2001) who made use of the EPNDS when examining the obstetric risk factors for elevated levels of depressive symptomatology during the postpartum period in an urban and rural community sample, with concurrent consideration of personality, psychiatric history and recent life events. A sample of 490 women, drawn from four hospitals in New South Wales, Australia were interviewed within one week of delivery and were mailed the EPNDS, to be completed at eight weeks postpartum. Using a cut off of $\geq$ 13 on the EPNDS, 64 women (13.1%) were identified as having elevated levels of depressive symptomatology at eight weeks postpartum. Several non-obstetric risk factors for the development of elevated levels of depressive symptomatology during the postpartum period were also reported, including socio-demographic (level of education, rented housing, receiving a benefit/pension), personality (those who described themselves as either nervy, shy, obsessional, angry or a worrier), psychiatric history (familial or personal history) and recent life events (health problems, arguments with partners, friends or relatives). The researchers concluded that the findings

emphasized the importance of psychosocial risk factors for elevated levels of depressive symptomatology during the postpartum period and suggested that most obstetric factors during pregnancy and birth do not significantly increase the risk for elevated levels of depressive symptomatology during the postpartum period.

Bugdayci, Sasmaz, Tezcan, Kurt and Oner (2004) aimed to determine the prevalence of depressive symptomatology at various times after delivery in women residing in the Turkish province of Mersin. Using a multistep, stratified (for age groups) cluster sampling method, Bugdayci et al. randomly selecting a sample of 1477 women (93.4% of women originally approached to participate in study), between the ages of 15 and 44 years, from various primary health care centres to participate in the study. Single women and pregnant women were excluded. The women were divided into various groups according to postpartum periods of 0-2 months, 3-6 months, 7-12 months and ≥ 13 months, leaving a total of 231 women in the first group, 328 women in the second group, 375 women in the third group and 513 women in the fourth group. Using a cut of score of ≥ 13 on the EPNDS, Bugdayci et al. found prevalence rates for depressive symptomatology of 29% at 0-2 months, 36.6% at 3-6 months, 36% at 7-12 months and 42.7% at ≥ 13 months postpartum. The researchers concluded that elevated levels of depressive symptomatology was substantial at all time points, but was at its lowest level before the second postpartum month and increased with time. Bugdayci et al. suggested that the decrease in intensive social and physical support given to mothers immediately after delivery might explain the increase in postpartum depressive symptomatology over time.

Beck and Gable (2001a & 2001b) conducted research in which 150 mothers from Connecticut, New England completed the Postpartum Depression Screening Scale (PDSS), the EPNDS and the BDI-II and were also interviewed by nurse psychotherapists within 12 months postpartum. Eighteen (12%) of the mothers were diagnosed with postpartum

depression, 28 (19%) with depressive symptomatology and 104 (69%) with no depression. Of the 18 women identified as suffering from major depression, 17 (94%) were identified by the PDSS, 14 (78%) by the EPNDS and 10 (56%) by the BDI-II, whilst 1(6%) woman was diagnosed with major depression, yet was not identified by any of the screening instruments. As the basis for the research conducted by Beck and Gable (2001a & 2001b) was to validate the use of the PDSS in screening for postpartum depression, the researchers were less interested in the implication of the results of the study on the women who were diagnosed with varying degrees of depression and were more interested in the fact that the 12% of mothers diagnosed with postpartum depression in their study was consistent with results reported in the literature (O'Hara & Swain as in Beck & Gable, 2001a).

Fowles (1998) found similar results to Beck and Gable (2001a & 2001b) when examining the relationship between postpartum depressive symptoms and maternal role attainment. A convenience sample of 168 primiparous women in their last trimester of an uncomplicated pregnancy and living with the father of their baby was recruited from community prenatal classes in central Illinois, and 136 women completed questionnaires 9 to 14 weeks after delivery. Presence of elevated levels of depressive symptomatology during the postpartum period was assessed using the EPNDS. Maternal role attainment was assessed using the Myself as Mother, My Baby and the Perceived Competence Scale. Scores for the EPNDS indicated that 10% of the sample scored $\geq$ 13, indicating the presence of elevated levels of depressive symptomatology. As anticipated, significant negative relationships were found between postpartum depressive symptoms and all six measures of maternal role attainment. Women with elevated levels of postpartum depressive symptomatology had more negative perceptions of their babies than either of themselves as mothers or in their ability to feed and care for their babies appropriately.

All the studies reviewed in this section made use of the EPNDS to assess the prevalence of postpartum depressive symptomatology. Despite this fact, the prevalence rates amongst the various samples of women assessed, range from 3.4% to 47.5%. Possibilities for this variation could include the timing of assessment (which ranged from one to thirteen months postpartum), sample sizes, variation in cut-off points and the variation in the socio-demographic statuses of the women. The studies also show that there are various sociodemographic and personality factors as well as psychiatric history and recent life events that contribute to the development of elevated levels of postpartum depressive symptomatology.

### 3.4.1.2   *Two phase design studies*

Campbell and Cohn (1991) examined the prevalence and correlates of postpartum depression in a sample of 1033 Caucasian, married, primiparous, middle-class mothers of full-term, healthy infants. The subjects were women who delivered infants at the major obstetrics facility in the Pittsburgh area during July 1986 and July 1990. At six to eight weeks postpartum a modified and shortened version of the SADS was administered telephonically and the women were diagnosed with a modified version of the Research Diagnostic Criteria (RDC). The reliability of the screening process was determined by comparing the diagnosis derived from the telephone interview with the diagnosis made independently by a home visitor, who administered a full SADS, within two weeks of the telephonic interview.

Of the 1033 women who were interviewed, 96 (9%) of the women were diagnosed as experiencing a clinically significant depressive reaction during the first two months postpartum. Of these 96 women, 36 women (38%) endorsed depressed mood with five or more symptoms, indicating major depression, whilst 30 women (31%) qualified for a diagnosis for probable major depression (sad mood and four symptoms) and 30 women (31%) received a diagnosis of minor depression (sad mood and three symptoms). Campbell and Cohn (1991)

found that although the depression rates for this sample of women were similar to rates reported in other studies of postpartum and non-postpartum women, many women who did not meet the criteria for depression reported some clinically significant symptoms, especially somatic symptoms, which are likely to reflect normal postpartum adjustment. Campbell and Cohn further found that educational level, paternal occupational level and pregnancy and delivery complications were associated with a diagnosis of postpartum depression.

Wickberg and Hwang (1997) recruited 1584 women from various health centres in Göteborg, the second largest city in Sweden, and Mölndal, a small town located in the immediate vicinity of Göteborg. The women were screened using the EPNDS at eight and twelve weeks postpartum in order to determine the prevalence of elevated levels of depressive symptomatology and the demographic factors associated with it. Of the 1874 women asked to participate in the study, 81 subjects (4.6%) declined, 138 (7.4%) completed only one EPNDS, and demographic information was not available for 71 women (3.8%). The point prevalence of elevated levels of depressive symptomatology, using a threshold of 11/12 on the EPNDS, was 12,5% at eight weeks and 8.3% at twelve weeks postpartum. The period prevalence for eight to twelve weeks postpartum was 4.5%. Wickberg and Hwang noted that the majority of cases (women with elevated levels of depressive symptomatology) remitted spontaneously within twelve weeks or less, suggesting that the elevated levels of depressive symptomatology may be as a result of adjustment difficulties experienced during the transition to parenthood. Wickberg and Hwang further found a significantly increased risk for elevated levels of depressive symptomatology among single women, but found that parity, maternal age and occupational status were not related to elevated levels of depressive symptomatology.

Another group of researchers who used the EPNDS to determine the prevalence of elevated levels of depressive symptomatology during the postpartum period in mothers and

fathers was Ballard et al. (1994). All mothers reporting to the Walsgrave maternity hospital in Coventry, who were either married to or cohabiting with the fathers of their children, were invited, together with their partners, to participate in the study. At six weeks and six months postpartum, the participants were sent the EPNDS and asked to complete and return the questionnaire to the researchers. In addition, the researchers randomly selected a control group of 155 parents of children between the ages of three and five from the computerized register of a general practice in Coventry. Each of these sets of parents was also sent the EPNDS through the post together with an explanatory letter and a self-addressed envelope.

Eighty-seven (56.1%) of the 155 sets of parents in the control group returned their questionnaires, whilst 178 (89%) of the 200 sets of parents in the test group returned questionnaires at the six week assessment and 148 (74%) of the test couples returned questionnaires at the six month assessment. Sixteen (18.4%) of the eighty-seven control mothers and five (5.7%) of the eighty-seven control fathers scored as depressive cases according to the EPNDS. In comparison, in the test group the prevalence rate of depression ascertained by the EPNDS and using a cut-off point of $\geq 13$, was 27.5% in mothers and 9% in fathers at six weeks postpartum and 25.7% in mothers and 5.4% in fathers at six months postpartum. Ballard et al. found that although mothers had significantly more depressive symptoms than fathers, the types of symptoms were very similar and that the prevalence of depressive illness was associated with unemployment and low socio-economic status in both partners.

Murray (1992) screened 646 (92% of original sample) first time mothers attending the postpartum ward of a maternity hospital in Cambridge for elevated levels of depressive symptomatology as well as depression after childbirth. Those identified as depressed, women with a previous history of depression and a control group were followed for up to eighteen months, when their infants were assessed on measures of cognitive, social and behavioural

development. At six weeks postpartum the women were sent the EPNDS, which yielded a 15.9% prevalence rate of postpartum depression amongst the women. All those women who were classified as suffering from elevated levels of depressive symptomatology were interviewed again at two to three months postpartum using the Standardized Psychiatric Interview (SPI) to identify major and minor episodes of depression. At the two to three month postpartum assessment the prevalence rate of depression amongst the women was found to be 11.1%. Murray found that various personal and social factors (such as unplanned pregnancy, complications or anxiety during pregnancy, poor marital or social relationships and dissatisfaction with housing) were found to be predictors for postpartum depression.

Another study conducted in the United Kingdom was that of Cox et al. (1993), who used the EPNDS and Goldberg's Standardised Psychiatric Interview to assess 232 women (92% of original sample) of lower social class from North Staffordshire within five weeks postpartum and again at six months after delivery. They were compared with a control group of women who were individually matched with the mothers for age, marital status and number of children, who were not pregnant nor had had a baby in the previous twelve months. The researchers found no significant difference between the postpartum (9.1%) and the control (8.2%) women at the first assessment within five weeks of childbirth. The six-month assessment yielded similar results, with the postpartum women showing a 13.8% prevalence rate of postpartum depression as compared to the prevalence rate of 13,4% as shown by the control group. These findings show that the prevalence rate of depression in postpartum women is similar to that found in nonpostpartum women.

Each study discussed in this section made use of the EPNDS to assess the prevalence of depressive symptomatology during the postpartum period. Despite this fact the prevalence rates of depressive symptomatology amongst the various samples of women ranged from 8.3% to 27.5%. Various diagnostic interviews were used to assess the prevalence of

postpartum depression and the findings show a variation in prevalence rated of between 9% and 11%. As in the case of the cross-sectional studies, the differences in prevalence rates could possibly be attributed to the timing of assessment, variation in sample sizes and sociodemographic statuses of the various samples of women.

### 3.4.1.3 *Longitudinal studies*

In the United States, women usually visit their obstetricians at six weeks postpartum and visit the baby's paediatrician four to six times during the first postpartum year for well baby visits. Tam, Newton and Parry (2002) aimed to determine the utility of screening women for elevated levels of depressive symptomatology at each well baby visit over the course of the first postpartum year. Subjects were recruited at their first well baby visit and asked to complete the EPNDS and the BDI at intervals consistent with their well baby visits during the course of the first postpartum year. Out of the 160 study packets distributed, only seven women (4.4%) agreed to participate in the study. Of the seven women studied, five (71.4%) women scored above threshold values at some point during the first postpartum year, but none of the five women agreed to participate in the second phase of the study, which included a structured clinical interview. Tam et al. (2002) hypothesized that the high prevalence of elevated levels of depressive symptomatology amongst the participants could possibly be due to the fact that the women who agreed to participate in the study had some interest in depression, either from previous experience or awareness that they were personally likely to experience it.

McMahon et al. (2001) aimed to compare maternal mood, marital satisfaction and infant temperament in 128 mothers (80% of original sample) admitted to the residential care unit of a family care centre in New South Wales, Australia and 58 first time mothers in a demographically matched group (similar demographic, obstetric history and perinatal variables) who were recruited from a private obstetric practice.

Mothers in the residential care unit completed the EPNDS when they entered the unit (mean age of infants = 11 weeks) whilst the comparison group completed the questionnaire when they were visited at home (mean age of infants = 18 weeks). In addition, the residential care group, but not the comparison group, were interviewed when their babies were four months old, using the CIDI, and both groups completed self-report questionnaires on anxiety and marital adjustment at the four-month home visit. Sixty-two percent of the residential care mothers interviewed at four months postpartum met with the DSM–IV criteria for depression, whilst 36% of the residential care mothers interviewed at eleven weeks postpartum and 6% of the obstetric unit mothers interviewed at eighteen weeks postpartum scored ≥ 13 on the EPNDS. Interpretation of these results is limited as mothers in the residential care unit completed the questionnaires when their babies were younger than those in the comparison group. These findings are consistent with other reports (Dudley et al., 2001 & Armstrong, Previtera & McCullam as in McMahon et al., 2001) in suggesting that mothers with infants with unsettled behaviour have a much higher rate of depressive symptomatology or more general psychological distress than mothers in comparison groups.

Lane et al. (1997) assessed the correlates and predictors of mood disturbance in 289 (78% of original sample) Irish mothers and their partners. On the third day postpartum mothers and at six weeks postpartum mothers and their partners were asked to complete the EPNDS and the Highs Scale. At the three-day assessment, 11.4% of the mothers obtained an EPNDS score of ≥ 13 and 18.3% a score of ≥ 8 on the Highs Questionnaire. At the six week assessment 11% of the mothers scored ≥ 13 on the EPNDS and 9% scored ≥ 8 on the Highs Scale, whilst the prevalence of paternal elevated levels of depressive symptomatology was 1%. The findings suggest that mood disturbance, both depression and elation, is common among mothers after childbirth, and that the two mood states are interrelated. The findings

further show that the mothers' mood state at three days postpartum was the best predictor of psychopathology at six weeks postpartum, suggesting that it is possible to identify mothers at risk for postpartum mood disturbance. Lane et al. further found that the factors associated with mood disturbance at three days and six weeks postpartum were identified at the antenatal intake and included unplanned pregnancy, single status, unemployment, lack of social status or school qualification.

Yonkers, Ramin, Rush, Navarete, Carmody, March, Heartwell and Leveno (2001) screened 802 Latina and African American women (90% of original sample) scheduled for their first postpartum visit at four community health clinics in Dallas County. The researchers assessed the women on a maximum of three occasions during the initial three to five week period. Only participants whose scores were above both of the thresholds for depressive symptoms during the initial assessment (339 women) were included in the second or third assessment. In order to affirm the researchers' assumption that women screening negatively at the three week postpartum assessment would not subsequently develop depression over the next month, the first 42 participants who screened negatively for depressive symptoms during the initial assessment were included in the second and third assessment.

The EPNDS and the Inventory of Depressive Symptomatology were used to evaluate depressive symptomatology; the Quality of Life in Depression Scale was used to evaluate quality of life and functional impairment and the Structured Clinical Interview for DSM-IV (SCID) was used to assign psychiatric diagnoses at the third assessment to women who still had elevated scores on either the EPNDS or the Inventory of Depressive Symptomatology at their second assessment.

While 293 (37%) women reported depressive symptoms at the time of the first visit, only 83 (28%) of these women continued to report depressive symptoms above threshold on one or both instruments during the second assessment. At the time of the third assessment,

only 67 (81%) of these women completed the questionnaires and 52 (78%) of the 67 women met with the DSM-IV criteria for major depressive disorder. Of interest to note is that 50% of these 52 women reported onset of depressive symptomatology prior to giving birth. Yonkers et al. (2001) found that the rate of major depressive disorder in the entire group during the first postpartum month ranged from 6.5% (if no women lost to follow up were depressed) to 8.5% (if all women lost to follow up were depressed). The onset of major depressive disorder was self-reported and the rate of postpartum onset ranged between 3.2% and 5.2%. The researchers further found that none of the women included in the second and third assessment, even though they had scored negatively for depressive symptoms at the initial assessment, subsequently developed depressive symptoms.

Yonkers et al. (2001) found that their hypothesis that the rate of postpartum major depressive disorder would be higher in a multi-ethnic, socio-economically disadvantaged group compared with rates reported in the literature among predominantly white, middle-class groups was not supported.

Beeghly et al. (2002) evaluated the stability and change of levels of postpartum depressive symptomatology over the course of the first postpartum year in a cohort of 106 first-time, working to upper-middle class mothers living in the United States. Using the CES-D, the mothers were interviewed telephonically at two months with follow-up interviews at three, six and twelve months postpartum. Depending on their score obtained on the CES-D during the initial interview, mothers were classified into two groups – normative or high. Of the 106 women (59.8% of selected sample), 46% were found to have elevated depressive symptomatology scores and 54% to have normative symptomatology scores at the initial two-month interview. The researchers found that the mothers classified in the high symptom group at the initial two-month postpartum interview continued to have higher CES-D scores than the mothers in the normative group at the three, six and twelve month follow up

interviews. These findings suggest that first-time; otherwise healthy mothers who report high levels of depressive symptomatology at two months postpartum, are at greater risk of continuing to experience elevated levels of depressive symptomatology later in the postpartum year.

The longitudinal studies show a variation in prevalence rates of postpartum depressive symptomatology of between 6% and 71.4%. As was the case with cross-sectional and two phase design studies, the variation in prevalence rates amongst the longitudinal studies could be attributed to a number of methodological factors.

### 3.4.1.4 *Summary of findings*

The studies conducted in the developed world show that the period of assessment for postpartum depression and depressive symptomatology ranged from three days to twelve months postpartum. The prevalence rate of depression during this time ranged from 9% to 78%, whilst the prevalence rate of elevated levels of depressive symptomatology ranged from 3.4% to 71.4%. It was further found that mothers with children with settling and feeding difficulties yielded far higher levels of postpartum depressive symptomatology than their counterparts. The research further shows that postpartum women experienced higher rates of depression and depressive symptomatology in the first few days postpartum than in the ensuing weeks and months, indicating the presence of postpartum blues rather than postpartum depression. The research also shows that the mothers classified in the high symptom groups early on in the postpartum year continued to have higher postpartum depressive scores later on in the year than those mothers classified in the low symptom group.

The research regarding the comparison of prevalence rates between postpartum women and their control counterparts is contradictory. Some researchers (see for instance Ballard et al., 1994; Kumar et al., 1996) found that postpartum women have higher depressive

symptomatology scores as compared to their control counterparts, indicating that mothers of newborns are more likely to suffer from elevated levels of depressive symptomatology than non-postpartum women of similar status. When measuring for the prevalence of depression between postpartum women and their control counterparts, Cox et al. (1993) found no distinction between postpartum women and their control counterparts, indicating that the prevalence rate of depression of postpartum women is similar to that found in nonpostpartum women. A comparison of the literature on antenatal and postpartum depression suggests that postpartum women experience greater levels of both depression and depressive symptomatology after childbirth than during pregnancy.

A number of factors were found to be associated with higher levels of depression and depressive symptomatology during the postpartum period, including low socio-economic status (Kumar et al., 1996), education level, pregnancy and delivery complications (Campbell & Cohn, 1991), poor marital or social relationships (Murray, 1992) and a psychiatric history of depression (Johnstone et al., 2001).

With regards to the fathers, the researchers found mixed results, with Dudley et al. (2001) finding that fathers had slightly higher levels of depressive symptomatology during the postpartum period as compared to their wives and Campbell and Cohn (1991) finding that fathers had far lower levels of depression rates during the postpartum period than their wives.

*3.4.1.5 Critique of studies*

The differences in prevalence rates amongst the various studies can be attributed to a number of factors, namely the timing of assessment which ranged from three days to one year postpartum; the variation in sample sizes which ranged from 7 to 1584 participants; the use of a various measuring instruments and the inclusion criteria for participation in each study.

Although there is little consensus in the literature regarding the onset of postpartum depression, if the depression occurs during the first few days postpartum and disappears within the first ten days postpartum (Lee, 1997; Nonacs & Cohen, 1998; O'Hara & Zekoski, 1988), then it is thought to be postpartum blues rather than postpartum depression. As a result those studies where the assessment was made within the first ten days after childbirth are possibly measuring for postpartum blues rather than postpartum depression, and it would therefore be inaccurate to classify these cases as postpartum depression.

The DSM-IV (American Psychiatric Association, 1994), classifies postpartum depression as depressive episodes that begin within four weeks postpartum and although researchers have argued that any depression occurring within the first six months after the birth of a child can be classified as postpartum depression (Ingram et al., 2003), one must question whether depression assessed at any stage during the postpartum year can be classified as postpartum depression if no prepartum assessment was made, so as to determine whether the onset was before or after the birth of the child.

The sample sizes of the various studies are another factor that could have contributed to the variation in prevalence rates of depression amongst the studies. For instance, Tam et al. (2002) and Ballard et al. (1994) both found five women in their samples to have elevated levels of depressive symptomatology but, because of the difference in sample sizes (7 versus 87), Tam et al. found a prevalence rate of 71.4% and Ballard et al. found a prevalence rate of 5.7%.

The measurement instruments used is another factor that could have contributed to the variation in prevalence rates amongst the studies as although the majority of the researchers made use of the EPNDS to measure for elevated levels of depressive symptomatology, different cut off scores (11/12, ≥12, ≥13) were used. Beck and Gable (2001a & 2001b), who made use of a variety of instruments to measure for postpartum depressive symptomatology,

found that the EPNDS does not identify all women who have elevated levels of depressive symptomatology.

The inclusion criteria for participants for each study is another factor that could have had an impact on the prevalence rate of postpartum depression, as it has been found that single status (Zelkowitz and Milet, 1995), low socio-economic status (Kumar et al., 1996) and pregnancy and delivery complications (Campbell & Cohn, 1991) all contribute to elevated levels of depressive symptomatology.

A further critique of the above-mentioned literature is that none of the studies measured prevalence rates of depression or depressive symptomatology prior to childbirth and very few studies compared the prevalence or incidence of depression in mothers to the general population. The question that therefore remains unanswered is whether it is in fact the delivery of a baby that is the cause of the postpartum elevated levels of depressive symptomatology scores in women or if there are other contributing factors?

### 3.4.2 Studies conducted in the developing world

In comparison to the developed world, in the developing world very few studies have been conducted that assess the prevalence of maternal depression during the postpartum period. The six studies discussed in this section were conducted in countries situated in Africa, Asia, the Middle East and South America.

### 3.4.2.1 *Cross-sectional studies*

One of the few studies to assess the prevalence of depression following childbirth in the developing world was that of Cooper et al. (1999), who aimed to determine the prevalence of postpartum depression and associated disturbances in the mother-infant relationship amongst women residing in the poor and overcrowded community of Khayelitsha, South Africa. A sample of 147 women, who had given birth within the previous two months, was recruited from the midwife obstetric units and baby health clinics in the area as well as by

door-to-door recruitment. Whilst maternal depression was assessed using the major depression section of the SCID, the interview also included details on current social circumstances, migration history, education and employment history, previous obstetric and medical history, availability of emotional and practical support from friends and family, and child care issues. Cooper et al. (1999) found the point prevalence of DSM-IV major depression to be 34,7% (18% onset postpartum and 17% onset sometime antenatally) and was associated with poor emotional and practical support from the partner and with intensive engagement with the infants. Of interest is that in 69% of the women with postpartum depression, the pregnancy was unplanned and 66% of the women said they had not had enough emotional support and 68% said they had not had enough practical support. The researchers concluded that the rate of postpartum depression was three times that found in British postpartum samples and was associated with disturbances in the mother-infant relationship. Although Cooper et al. (1999) found that social adversity was not a major risk factor for postpartum depression amongst the Khayelitsha women, the absence of social support from the women's partners was.

Spangenberg and Pieters (1991) assessed 81 women between two weeks and six months postpartum who were living within the geographical boundaries of the rural and urban areas of Stellenbosch, South Africa. In order to make the sample as homogenous as possible, only subjects who were married, Caucasian, biological mothers with a minimum of ten years' school education and with physically normal babies, were included in the study. Using the BDI, the researchers found that 27.2% of the women in this study experienced elevated levels of depressive symptomatology during the postpartum period.

Fuggle et al. (2002) conducted research on 48 Bangladeshi postpartum women residing in Bangladesh and England. The sample consisted of 22 women from Bangladesh who were between eight and twelve weeks postpartum and 26 women from London who were

between eight weeks and twelve months postpartum. The women completed the Bengali version of the EPNDS, the GHQ and a standardized interview about the degree of social support. Using a cut-off score of 12 for the EPNDS, the researchers found a prevalence rate for elevated levels of depressive symptomatology of 11,5% amongst the women, all of who lived in London. The GHQ identified four women as having elevated levels of depressive symptomatology, only one of whom was identified as having elevated levels of depressive symptomatology on both measures. According to Fuggle et al. these findings indicate that the Bengali version of the EPNDS has similar psychometric properties as other language versions of the scale; that the translation of the GHQ seemed less successful than that of the EPNDS; that there is a significant association between the EPNDS scores and social support and that the use of a screening instrument for elevated levels of depressive symptomatology may be acceptable and appropriate in the Bengali population.

Faisal-Cury, Tedesco, Kahhale, Menezes and Zugaib (2004) aimed to estimate the prevalence of elevated levels of depressive symptomatology during the postpartum period and its relationship with life events and patterns of coping. A sample of 172 women was recruited during pregnancy from the Obstetric Clinic of the São Paulo University Medical School in Brazil, but only 113 women (66%) completed the study. Subjects were mainly white, lower working class women, without a private health plan. Women who did not return for the assessment were similar to those who did return in all variables except regarding smoking habits as the study group had fewer smokers. On the tenth day postpartum, the women completed a Portuguese translation of the BDI to assess depressive symptomatology, scales of Pitt and Stein to assess puerperal blues, the Social Readjustment Rating Scale (SRRS) to evaluate the score of stressful life events during the previous twelve months, the Ways of Coping Questionnaire (WCQ) to measure coping styles in relation to pregnancy and a demographic questionnaire to obtain information on factors that could be associated with

elevated levels of postpartum depressive symptomatology. Faisal-Cury et al. found the prevalence rate of elevated levels of depressive symptomatology to be 15,9%, whilst rates for puerperal blues according to Pitt and Stein scales were 30.1% and 32.7% respectively. As 62% of the women classified as suffering from postpartum blues were negative for elevated levels of depressive symptomatology according to the BDI, the researchers concluded that there are two different groups of women: a group of women suffering from elevated levels of postpartum depression symptomatology and a group of women presenting blues symptoms. The researchers found that specific coping patterns (escape-avoidance, distancing) together with social problems (low educational and socioeconomic class, multiparity, greater number of children) appeared to play a role in the development of elevated levels of depressive symptomatology during the postpartum period.

The studies discussed in this section highlight the fact that a lack of both practical and emotional support as well as coping patterns and sociodemographic factors play a significant role in both the development of elevated levels of depressive symptomatology and postpartum depression. The variation in the prevalence rates of postpartum depression (34.7%) and elevated levels of depressive symptomatology (11.5%, 15.9% and 27.2%) between the studies could be attributed to the difference in the construct being measured, the measurement instruments used as well as the timing of the assessments, which ranged from ten days to twelve months postpartum.

### 3.4.2.2    *Two phase design studies*

Chaaya, Campbell, El Kak, Shaar, Harb and Kaddour (2002) recruited 538 women from maternity wards in nine hospitals in Beruit, the capital city of Lebanon, and the Beka's Valley, a rural area about 45km from the capital. The women were interviewed 24 hours and three to five months after delivery in order to determine the prevalence and determinants of elevated levels of depressive symptomatology amongst this group of women. Although all 538

women completed the initial interview four hours after delivery, only 396 (74%) women completed the second interview at three to five months postpartum. Data was collected through face-to-face interviews using structured instruments designed by the investigators, as well as the Arabic version of the EPNDS. Using a cut off of 12/13 in the EPNDS, Chaaya et al. found that 21% (16% in Beruit, 26% in Beka's Valley) of the 396 women were found to have elevated levels of postpartum depressive symptomatology. Of the 21% with elevated levels of postpartum depressive symptomatology, 12% had also experienced elevated levels of depressive symptomatology during pregnancy (self-reported), whereas a further 9% first developed elevated levels of depressive symptomatology in the postpartum period. The researchers further found that the risk factors most likely to predict elevated levels of depressive symptomatology during the postpartum period were prenatal depression or a history of chronic medical conditions.

Lee et al. (2003) screened for postpartum depression in a cohort of 220 (67% of women approached to participate) Chinese women of diverse socio-economic background. The women, who were recruited at a university-affiliated hospital in Hong Kong, were first interviewed at two days postpartum by means of a qualitative interview as well as the EPNDS, GHQ and BDI. At six weeks postpartum 145 (66%) of the participants returned for the follow-up and were interviewed by a psychiatrist, who together with the BDI, GHQ & EPNDS used the Structured Clinical Interview for DSM-III-R to establish a diagnosis. Participants were classified as cases or non-cases of postpartum depression at six weeks postpartum on the basis of their SCID diagnosis. According to the SCID results, 17 (12%) of the 145 women met the criteria for depression during the postpartum period. Lee et al. found that although elevated peridelivery depression scores are associated with an increased risk of postpartum depression, they cannot be used to accurately identify postpartum depression. They argued that the level of depression for early (within 48 hours of delivery) postpartum

depression may not be substantial enough to allow differentiation from ordinary adjustment and that some mothers only develop postpartum depression once they return home or they return to work. They therefore suggest that screening for postpartum depression should not be done within the first few days postpartum, but at a later stage.

The findings from the two-phase design studies show that the prevalence rates of elevated levels of postpartum depressive symptomatology and postpartum depression highlight that many women experience mood disturbances during the postpartum period. Unfortunately due to the fact that no prepartum measurements were taken it is impossible to determine whether the mood disturbances developed during the postpartum period or whether they were continuations of pre-existing antenatal illnesses.

### 3.4.2.3    *Longitudinal study*

Ghubash and Abou-Saleh (1997) assessed the prevalence and psychological correlates of elevated levels of depressive symptomatology during the postpartum period amongst 95 (71% of original sample) local women who were admitted to the postpartum ward of the New Dubai Hospital, Dubai, United Arab Emirates during the period from mid-July 1994 to the end of August 1994. All subjects were assessed during the postpartum period using the Self Report Questionnaire (SRQ) on day two, the EPNDS on day 7 and the Present State Examination (PSE) at $8 \pm 2$ weeks and $30 \pm 2$ weeks after delivery. The SRQ defined the prevalence of psychiatric morbidity on day two at 24.5%, the EPNDS defined the prevalence of elevated levels of depressive symptomatology on day 7 at 17.8% and the PSE defined the prevalence of elevated levels of depressive symptomatology at week $8 \pm 2$ at 15.8% and at week $30 \pm 2$ at 4.2%. Ghubash and Abou-Saleh noted that the rates of elevated levels of depressive symptomatology found in their study were similar to the rates obtained in other studies and that all the women with elevated levels of depressive symptomatoogy recovered

by eight months, when very few (4.2%) new occurrences were found, indicating the self-limiting nature of this condition.

### 3.4.2.4    *Summary of findings*

The studies conducted in the developing world shows that the period of assessment for postpartum depression and depressive symptomatology ranged from 24 hours to twelve months postpartum. The results further show that the prevalence rate of depression during this time ranged from 12% to 34.7% compared to the prevalence of depressive symptomatology, which ranged from 4.2% to 27.2%. The ranges in the rates of postpartum depression and elevated levels of depressive symptomatology can be attributed methodological issues, specifically the timing of the assessments, sample sizes and the measuring instruments used. In comparison to the findings from the literature on the prevalence of depression and depressive symptomatology in the antenatal period, it appears that women are more likely to experience more depressive symptoms during the postpartum period than antenatally.

A number of factors were found to be associated with higher levels of depression and depressive symptomatology during the postpartum period, including poor social support (Cooper et al., 1999; Fuggle et al., 2002), coping patterns and low educational and socioeconomic class, multiparity, greater number of children (Faisal-Cury et al., 1994), prenatal depression and a history of chronic medical conditions (Chaaya et al., 2002).

### 3.4.2.5    *Critique of studies*

The differences in prevalence rates amongst the various studies can be attributed to a number of factors. Firstly, the timing of assessment, which ranged from 24 hours to one year postpartum, secondly the sample sizes, which ranged from 22 to 538 participants, and thirdly the use of measuring instruments.

A number of the studies conducted assessments within the first ten days postpartum. As was discussed earlier, these findings could be an indication of the presence of postpartum blues, rather than postpartum depression and that the elevated levels of depressive symptomatology in the first few days and weeks postpartum may be as a result of the adjustment to motherhood, rather than due to the actual delivery.

As was discussed in the section on research conducted in the developed world, the sample sizes used in the various studies is another factor that could contribute to the variation in prevalence rates of depression amongst the studies.

The use of different measurement instruments is once again another factor that could contribute to the differences in prevalence rates amongst the various studies. Although a number of studies made use of the EPNDS to measure for postpartum depression, different cut off scores (12,12/13) were once again used and a variety of other instruments including the BDI, PSE, and GHQ were also used.

A further critique of the above-mentioned literature is that the researchers used assessment instruments that were designed by researchers in the developed world for use on populations residing in the developed world. By using these instruments among populations residing in the developing world, researchers are neglecting the fact that the research participants in their studies have different cultural beliefs and either a different or no understanding of the concept of depression as understood by those in the developed world (Swartz, 1998).

Of interest to note is that in the studies of Chaaya et al. (2002), and Cooper et al. (1999), although no assessment was made and the findings are therefore most likely based on the women's experiences as told to the researchers, the findings show that less than half of the cases of depression developed during the postpartum period and the rest developed prenatally.

The research further shows that an unplanned pregnancy, a lack of social support, or a disturbance in the mother-infant relationship are all factors that contribute to elevated levels of depression in the year postpartum.

As with the research conducted in the developed world, one needs to question the relevance of the postpartum depressive scores, as once again these studies do not assess the prevalence or incidence of depression prepartum or compare the scores obtained by the mothers with a control group, or the general population.

## 3.5    Studies that compare depression rates pre- and postpartum

In this section, studies that assess the incidence and prevalence of depression during both the pre- and postpartum period will be discussed. Once again, distinctions have been made between those studies conducted in developed countries and those studies conducted in developing countries.

### 3.5.1 Studies conducted in developed countries

De Tychey et al. (2005) assessed 277 pregnant French women in the prenatal period between the 26$^{th}$ and 35$^{th}$ weeks of gestation and again between the 4$^{th}$ and 8$^{th}$ week after delivery in order to assess the prevalence of depressive symptomatology. The women were aged between 19 and 40 years of age and were evaluated by psychologists at the hospital pre- and postpartum examination using the EPNDS, the GHQ and Carver's coping scale. Using a cut-off ≥ 12, de Tychey et al. found a prevalence rate of depressive symptomatology of 19.1% amongst the women at the prenatal assessment. This rate decreased significantly at the postpartum assessment and only 11.1% of the women were found to have elevated levels of depressive symptomatology at the postpartum assessment.

O'Hara et al. (1990) recruited 182 women from a public obstetrics and gynecology clinic and two private practices in Iowa, United States. Subjects were asked to provide names of acquaintances of similar demographic status who formed part of the non-childbearing

control group. The BDI, the depression subscale of the SCL-90-R, the Social Adjustment Scale (SAS), the Dyadic Adjustment Scale & the Visual Analogue Scale (VAS) were used to capture the multi-dimensional nature of depression. The questionnaires were sent to the participants who completed them before their initial interview during the second trimester and again during the third trimester of pregnancy. The RDC was used to establish diagnoses of depression during the second trimester of pregnancy and again during the first nine weeks postpartum. The BDI, SCL-90 and SAS were obtained again at three, six and nine weeks postpartum. No difference was found between rates of depression between the childbearing and non-childbearing subjects at the prepartum or postpartum assessment or between the rates of depression for childbearing women during the second trimester of pregnancy and postpartum. The researchers concluded that although there was a postpartum depression rate of 10.4%, the postpartum period was not characterized by an increase in nonpsychotic depression.

Another study conducted in the United States was that of Hobfoll et al. (1995), who assessed a sample of 192 low-income, inner-city American women for clinical depression twice during pregnancy ($2^{nd}$ and $3^{rd}$ trimester) and once at seven to nine weeks postpartum. Clinical depression was assessed at all three interviews using the SADS which had been adapted for use with pregnant and postpartum women, whilst diagnosis of current affective disorders was made based on the RDC. Interviewers rated participants on a 6-point scale for dysphoria and eight categories of depression symptoms and a shortened version of the BDI was administered. Eighty women (41.7%) met the RDC criteria for either major or minor depression during either of the two prepartum assessments. The point prevalence estimates for the first and second prepartum assessments were 27.6% and 24.5% respectively. Forty-five women experienced either a major or minor depression during the postpartum period, yielding a point prevalence estimate of 23.4%. Post hoc multiple range tests indicated that all

three groups differed significantly from each other at each of the three assessment points. Of the 80 cases diagnosed as experiencing prepartum depression, 24 (30%) remained depressed at the postpartum assessment, whilst twenty-one (46%) new cases of depression were reported at the postpartum assessment.

The high rates of depression during the first antepartum assessment, suggest that women may struggle to adjust to the physical and psychological impact of pregnancy. Although there was a weak relationship between antepartum and postpartum depression, the researchers found that there was a large amount of movement, with many new cases of depression and many women no longer being depressed postpartum. The researchers further found that the rates of depression from their study was more than twice those reported for middle class samples (Cutrona, Gotlib et al., O'Hara as in Hobfoll et al., 1995) suggesting that low socio-economic status is a significant risk factor for depression during pregnancy and the postpartum.

Areias et al. (1996) conducted research on 54 first time mothers from various socio-economic backgrounds attending obstetric services in Operto, Portugal. The women and 42 of the women's partners participated in a clinical interview (SADS) and completed the Portuguese version of the EPNDS during the sixth month of pregnancy and at 12 months after the birth, whilst a sub-sample (24 women and 12 men) was interviewed at 3 months postpartum. Of the 54 women, 25 (46.3%) met with diagnostic criteria for at least one previous episode of depression prior to their pregnancy. During pregnancy the period prevalence for depression amongst the women was 16.7%, with a further five women being diagnosed for other disorders in the absence of depression. In contrast, only 4.8% of the men received the diagnosis of depression and in a further five men another diagnosis was made in the absence of depression. In the first three months postpartum there were five women who were depressed during pregnancy who continued to be depressed postnatally and there were

12 new cases of depression amongst women who had not been diagnosed with depression during pregnancy, yielding a period prevalence of 31.5% and a significant increase in the prevalence rate as compared to the rate at the antepartum assessment. In 8 of these 17 women the depression persisted into the period 4 to 12 months postpartum and during this time there were a further 12 new cases, indicating a cumulative incidence during the first postpartum year of 49%. The pattern in the men was different as none of the men who were depressed during their partner's pregnancy continued to be depressed postnatally and the men had a prevalence rate of depression during the first 12 months after the birth of their children of 23.8%. The researchers concluded that the presence of maternal depression postnatally was associated with a personal lifetime history of depression prior to pregnancy and the presence of depression during pregnancy. The researchers further concluded that having a partner with a history of depression, correlated with the presence of postpartum maternal depression. In the men, the occurrence of depression was not associated with a personal history of depression, but was associated with the presence of depression during pregnancy and between naught and three months postnatally in their wives.

Verkerk et al. (2003) aimed to investigate the antenatal prediction of the occurrence of elevated levels of depressive symptomatology during the first postpartum year and the course of depression in populations at different degrees of risk. One thousand and thirty one women residing in the southern part of the Netherlands were screened during mid pregnancy for risk factors associated with depression and classified as either high risk (score > 11 on EPNDS, family or personal history of depression or poor relationship with parents during childhood) or low risk. Of the randomly selected women, 97 high risk and 87 low-risk women agreed to participate in the longitudinal study on postpartum depressive symptomatology and were assessed at eight months prepartum and again at three, six and twelve months postpartum. There was no demographic difference between the high risk and low risk women. In the high-

risk group, 22% of the women had elevated levels of depressive symptomatology prenatally and 25% of the women had elevated levels of depressive symptomatology during the first year postpartum. In comparison 2.3% of the low-risk group experienced elevated levels of depressive symptomatology prenatally and 5.7% experienced elevated levels of depressive symptomatology during the first postpartum year. At three months postpartum, significantly more high risk (17%) than low risk (1%) women had elevated levels of depressive symptomatology and whilst prevalence rates decreased after three months postpartum in the high-risk group, no significant fluctuations of prevalence rates were found in the low risk group. The researchers found that two risk factors were independently predictive of elevated levels of depressive symptomatology during the postpartum period, namely a personal history of depression, and high depressive symptomatology during mid-pregnancy. It was further found that women at high risk and low risk for elevated levels of depressive symptomatology during the early postpartum period can be detected during pregnancy and that the high-risk women were only at particular risk during the first three months postpartum.

Cooper, Campbell, Day, Kennerly and Bond (1988) aimed to establish the prevalence and incidence of a psychiatric disorder during the first postpartum year and to determine the onset and course of the disorder and to describe its clinical features. The researchers recruited 483 women (67% of original sample) from an antenatal clinic and delivery-booking diary from the same hospital in Oxford. The women were assessed antenatally and subgroups of the full sample were assessed at three, six and twelve months postpartum. A structured interview was administered antenatally and psychiatric state was assessed both antenatally and postnatally using the GHQ, the PSE and the Montgomery and Asberg Depression Scale Rating. In terms of PSE criteria, the point prevalence of non-psychotic psychiatric disorder did not differ significantly and was found to be 6% antenatally, 8.7% at 3 months postpartum, 8.8% at 6 months postpartum and 5.2% at one year postpartum. These

prevalence rates were compared to the rate in the general population and were found to be no greater. The researchers therefore concluded that prevalence, incidence and nature of non-psychotic psychiatric disorders were no different during the first postpartum year as compared to disorders arising at other times.

The largest longitudinal study was conducted by Najman et al. (2000) amongst a group of women (n= 5365) attending a public obstetric unit in Queensland, Australia. Using the Delusional-Symptoms State Inventory (DSSI-D), the researchers assessed for symptoms of depression during pregnancy (mean gestation of 18 weeks) and again at three to five days, six months and five years postpartum. At the first postpartum assessment it was noted that although the majority of women (64.6%) experienced some depressed mood, the symptoms were not severe and did not generally continue beyond a few weeks. The researchers further found that despite the women's depressed mood, more women experienced a reduction rather than an increase in depressive symptoms from the time of the first clinical visit during pregnancy to the time of the second clinical visit at three to five days postpartum. Similar results were found for the period of the first postpartum assessment at three to five days postpartum to the second postpartum assessment at six months postpartum where only 4% of the women reported still being depressed. The period from the second clinical visit to the third visit at five years postpartum however revealed that the women experienced an increase in depressive symptoms during this period, showing that the levels of depression experienced by the women were highest either during pregnancy or at the five year follow up.

The prevalence rates for depression during pregnancy and the postpartum period in developed countries show that the rates range from 16.7% to 27.6% during the prepartum period and from 10.4% to 31.5% during the postpartum period. In comparison, the prevalence rates for elevated levels of depressive symptomatology during pregnancy and the postpartum range from 2.3% to 64.6% during pregnancy and from 4% to 25% during the postpartum

period. The variation in prevalence rates can be attributed to the variation in sample sizes, the measurement instruments used, the timing of the assessments and the socio-demographic statuses of the women in the various studies. Of importance to the current study is that whilst Areis et al. (1996) found a significant increase in the prevalence rate of depressive symptomatology from the prepartum to postpartum assessment, other researchers (de Tychey et al., 2005; Hobfoll et al., 1995; Najman et al., 1995) found a significant decrease and still others (Cooper et al., 1988; O'Hara et al., 1990) found no difference, suggesting that women may in fact not be at increased risk for depression and elevated levels of depressive symptomatology during the postpartum period.

### 3.5.2 Studies conducted in developing countries

Nhiwatiwa et al. (1998) conducted research amongst women during their eighth month of pregnancy and again at six to eight weeks postpartum in a peri-urban community in Zimbabwe. Using the Shona Symptom Questionnaire, a fourteen-item indigenous measure of non-psychotic psychological morbidity, the researchers identified a cohort of "high risk" women (those women who scored eight or more on the questionnaire). Using the Shona version of the Revised Clinical Interview Schedule (RCIS), a standardised psychiatric interview that reflects non-psychotic morbidity, all the women in the "high risk" group and a random sample of women from the "low risk" group were reviewed at six to eight weeks postpartum. The researchers found that 46% of the women identified as being at "high risk" and 9% of the women identified as being at "low risk" for the development of non-psychotic psychological morbidity developed psychological morbidity postpartum. Of the 500 women originally recruited for the study, Nhiwatiwa et al. found the prevalence rate of postpartum depression to be 16%.

According to the researchers, the findings show unequivocally that psychological morbidity is common both in the last trimester of pregnancy and in the early postpartum

period, and that a brief screening questionnaire in the eighth month of pregnancy is reasonably accurate in predicting mental disorder. Those women who have higher morbidity scores in late pregnancy are more likely to have a postpartum mental illness suggesting that the postpartum illness in this group may simply be a continuation of a more sever antenatal illness. Among women who have no antenatal morbidity, only a small proportion goes on to develop a postpartum illness de novo.

Aderibigbe, Gureje and Omigbodun (1993) evaluated 162 Nigerian women for psychiatric morbidity in the second trimester of pregnancy and again at six to eight weeks postpartum. Using the GHQ, a demographic and obstetric questionnaire and the Psychiatric Assessment Schedule (PAS), the authors found a significant difference between the prevalence rate of psychiatric morbidity at the two assessment points as 49 (30.2%) of the women were cases for prenatal morbidity compared to the 23 (14.2%) women who were cases for postpartum morbidity. Of the prenatal cases, only eight remained cases at the postpartum assessment, indicating that although there was an overlap, the women who showed elevated levels of depressive symptomatology prenatally were substantially different from those who showed elevated levels of depressive symptomatology postpartum.

Chandran et al. (2002) conducted research on low-income women, the majority of who were housewives with only 9% in paid employment. The aim of the research was to determine the incidence and risk factors for developing postpartum depression in a cohort of women living in a rural development block in Tamil Nadul, South India. Using the CIS-R, 359 women were assessed in the last trimester of pregnancy and again at six to twelve weeks after delivery. The assessment indicated an 11% prevalence rate amongst women with no previous history of depression. Of the 58 women who were depressed before delivery, 38 (65.5%) were still depressed at the postpartum assessment. Of interest to note is that the women who were depressed reported marital problems and husband's alcohol use. The

overall prevalence of depression rose slightly from 16% before delivery to 19,8% in the postpartum period, indicating no significant difference between the rates of depression at the two assessment points. Of the 71 women with postpartum depression, in 38 (54%) the onset was antenatal. The presence of depression in the last trimester of pregnancy was found to be a strong predictor of depression at the postpartum assessment.

Patel, Rodrigues and DeSouza (2002) conducted research to determine the natural history of depression in mothers who recently gave birth and to determine the risk factors on the occurrence and outcome of depression. The authors studied 270 pregnant mothers, recruited during their third trimester of pregnancy, from a district hospital in Goa, India and interviewed the women at recruitment, six to eight weeks and six months postpartum. All women were interviewed at recruitment with the GHQ and a semi-structured interview used to elicit demographic information, data regarding social support, quality of relationships and obstetric history. At six to eight weeks postpartum the mothers completed the EPNDS and answered questions on pregnancy, childbirth and infant behaviour. At the six-month follow up, the mothers were administered the EPNDS and the Brief Disability Questionnaire and answered questions regarding the use of health services over the previous three months.

At the prepartum assessment a total of 46% of the women were considered to have elevated levels of depressive symptomatology. A total of 252 of the mothers (92%) were re-examined at six to eight weeks postpartum and 59 (23%) of these mothers were considered to have elevated levels of depressive symptomatology. Of the mothers who did not have antenatal depression (N=146), 12 (8%) developed depression in the postpartum period. Thus, of the 59 women with postpartum depression, only 13 (22%) had depression that developed postpartum. A total of 235 (87%) of the 270 mothers were examined at six months postpartum, of these, 51 (22%) of the mothers were depressed.

Although Patel et al. (2002) found postpartum depression to be a common mental illness in Goa, India; it was usually a consequence of a pre-existing antenatal morbidity. The researchers further found maternal employment to be a predictor of postpartum depression, whilst the number of years of maternal education and paternal employment were found to be protective factors against elevated levels of depressive symptomatology in the postpartum period.

In this section, the prevalence rates for elevated levels of depressive symptomatology ranged from 30.2% to 46% during pregnancy and from 14.2% to 23% during the first six months postpartum. In comparison, the rate for depression during pregnancy was 16% and ranged from 16% to 19.8% during the postpartum period. As was the case with the studies discussed in the previous sections, the variation in prevalence rates can be attributed to differences in measuring instruments, timing of assessment and sample sizes of the various studies. It is once again important to note that whilst Chandran et al. (2002) and Nhiwatiwa et al. (1998) found no significant difference between the prevalence rates of depression during the prepartum and postpartum assessments, Patel et al. (2002) and Aderigbe et al. (1993) found significant decreases from the prepartum to the postpartum assessment, once again suggesting that depression and elevated levels of depressive symptomatology may in fact not be precipitated by childbirth.

3.5.3   Summary of findings

The studies that assess the prevalence of depression and elevated levels of depressive symptomatology during pregnancy and the postpartum show that psychological morbidity is common both during pregnancy and in the postpartum period. It further indicates that women at high-risk and low-risk for depression and elevated levels of depressive symptomatology during the postpartum year can already be identified during pregnancy and that women with a personal history of depression and with elevated levels of depressive

symptomatology during the second or third trimester of pregnancy are at increased risk for depression, suggesting that postpartum illness may simply be a continuation of a prepartum illness. Among women who have no prepartum morbidity, only a small proportion goes on to develop a postpartum illness de novo.

The results regarding the change in the prevalence rate of depression and elevated levels of depressive symptomatology postpartum as compared to prepartum is varied as some researchers found a significant increase during the postpartum period, others a significant decrease and still others no significant difference. Despite these differences the studies indicated that there is a large amount of movement between the pregnancy assessments and the postpartum assessments, as some women remained depressed from the prepartum to postpartum assessment, others were only depressed at the prepartum assessment and not at the postpartum assessment and still others were only depressed at the postpartum assessment and not at the prepartum assessment.

The research further found no difference between the rates of depression and depressive symptomatology between childbearing and non-childbearing subjects or between mothers and the general population, indicating that the prevalence; incidence and nature of non-psychotic psychiatric disorders are no different during the first postpartum year as compared to disorders arising at other times.

The following risk factors were found to be independently predictive of elevated levels of depressive symptomatology and depression during the postpartum period, namely a personal history of depression, high depressive symptomatology during mid-pregnancy, marital problems and low social economic status.

3.5.4   Critique of studies

As was the case with the studies that only assessed the postpartum prevalence rates of depression or depressive symptomatology, various methodological problems can be found

with the studies that assessed the rates both during the prepartum and postpartum period. Once again, the variation in prevalence rates of depression and depressive symptomatology during the postpartum period as well as during the prepartum assessment can possibly be attributed to differences in sample sizes, timing of assessments, measuring instruments used and the variation in socio-demographic statuses of the women.

3.6    <u>Conclusion</u>

From a methodological perspective, there appears to be problems with not only the prevalence rates, but also the measurement, onset, duration, symptomatology and timing of observations related to the research on depression during the postpartum period. Of interest to note however, is that these individual methodological problems are all partially due to one specific issue, namely the lack of clarity on the conceptual definition of postpartum depression.

The problem with the definition of depression after childbirth, is that whilst the other affective disorders related to childbirth, namely postpartum/ "baby" blues and postpartum psychosis are clearly defined and have been found to be related to the delivery of a child, postpartum depression as an unique entity has not.

Whilst the term "postpartum depression" implies a psychological condition that develops in the postpartum period and which is distinct from depression experienced by women during non-postpartum periods of their lives or from depression experienced by men, (Nicolson & Woollet as in Mauthner, 1999) a review of the above literature suggests that mood disturbances emerging during the puerperium may not differ significantly from the affective illnesses that occur in women at other times (see for instance Cooper et al., 1988; Cox et al., 1993).

The term further implies a phenomenon that develops after a woman has given birth, even though the literature indicates that there are similar, higher or lower rates of depression

during pregnancy (Aderibigbe et al., 1993; Chandran et al., 2002; Najman et al., 2000) when compared to the postpartum period. This is of great significance to both practitioners and researchers alike as although the literature is inconclusive regarding whether postpartum depression is in fact a distinct diagnosis, the research does suggest that women who suffer from depression in the postpartum period can already be identified during pregnancy, suggesting that depression during the postpartum period represent exacerbations or continuations of a pre-existing set of symptoms of depression.

A review of the literature further reveals that although a large body of research has been conducted on the prevalence of postpartum depression in the developed and to a smaller extent, the developing world, fewer studies that assess prevalence rates of depressive symptomatology prepartum as compared to postpartum have been conducted. Of greater significance for South African researchers, practioners and women is that whilst only two studies have assessed the prevalence rate of depression after childbirth amongst a group of South African women, no studies could be found that assess the rates of depressive symptomatology both prepartum and postpartum amongst South African women.

The current research study therefore aims to determine whether women experience any significant difference in depressive symptomatology postpartum as compared to prepartum. The current study aims to examine this trend by focusing on a group of low-income women residing in a rural community in Southern Africa. As such, the study may contribute to the debate regarding the construct of postpartum depression and whether there is in fact a distinct disorder that arises during the postpartum period.

CHAPTER FOUR: METHODOLOGY

4.1     Research goals

The current research was based on the hypothesis that women experience no significant difference in mood status postpartum in comparison to their mood status prepartum. The aim of this study was to determine whether low-income women residing in a rural community in South Africa experienced any significant difference in the prevalence rates of depressive symptoms postpartum as compared to depressive symptoms prepartum.

4.1.1   Secondary goals

1.     To determine whether low-income women experienced depressive symptoms prepartum.

2.     To determine whether low-income women experienced depressive symptoms at three months postpartum.

3.     To determine whether low-income women experienced depressive symptoms at six months postpartum.

4.2     Research method

4.2.1   Research design

This study formed part of a larger study run by the Women's Mental Health Research Project (WMHRP) at the University of Stellenbosch, which aims to obtain a clearer understanding of the mental health and mental health needs of low-income women in one specific community, by focusing on the prenatal and antenatal period. The study is conducted in the municipal area of Kylemore, in close co-operation with the Kylemore Clinic and the Department of Health's West Coast/Winelands regional office. The study consists of various stages. Whilst the first stage took the form of a situational analysis, the second stage consists of a qualitative and quantitative study in which women reporting to the Kylemore Clinic for prenatal and antenatal visits are interviewed on four different occasions by the same

interviewer: during pregnancy, one week postpartum, three months postpartum and six months postpartum. The third stage of the study will include the implementation and evaluation of different interventions and support strategies for both the women in the community as well as the community as a whole.

As part of the second stage of the larger study, the research study under discussion focused on data collected during the prenatal, three-month and six-month postpartum interviews. As a result only information that was of relevance to this specific study is discussed. This quantitative study falls within a positivist empirical framework and is a longitudinal panel study by design.

### 4.2.2 Setting

#### *4.2.2.1 Kylemore community*

This study focused on the women residing in the rural community of Kylemore, a poor, self-contained and long established 'coloured'[1] community approximately seven kilometers out of Stellenbosch. The residents of Kylemore are largely dependent on seasonal work in agriculture and many of them are unemployed. There are approximately 5000 residents, including three hundred and sixty five children under five years of age. At any time there are 15 to 20 pregnant women in the community.

### 4.2.3 Participants

As already mentioned, this study formed part of a larger ongoing qualitative study currently being conducted by the WMHRP at the psychology department at the University of Stellenbosch. All women attending the Kylemore Clinic for prenatal visits during the period March 2002 to December 2004 were asked to participate in the study. Due to miscarriages,

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[1] 'Coloured': term used in the (now repealed) South African Population Registration Act (1950) to describe persons of mixed origin. Though there is continuing controversy about the political problems surrounding use of the term, it remains descriptive of a wide range of South Africans of diverse origins who speak either English or Afrikaans as home language (Rumble et al., 1996).

stillbirths and participants who moved away from the Stellenbosch area, not all participants who agreed to participate in the study completed all four of the interviews. To date, a total of sixty-seven women have been recruited to participate in the study. Of these sixty-seven women, five women withdrew after the first (prepartum) interview as they miscarried during the latter stages of pregnancy, had stillbirths, abortions or moved to another town. Ten women withdrew during the first few months after the birth as they went back to full-time employment and therefore did not have the time to continue the interviews. Eleven women gave birth sooner than expected and were therefore interviewed for the first time after the birth of their baby and five women are participating in the study, but have not yet given birth and could therefore not be included in this study. Another six sets of questionnaires could not be used due to partial failure by the participants to accurately complete the questionnaires. Thus, the data presented in this study is based on that of thirty women. In order to increase the reliability of the findings, women were included in this study if they had completed the prepartum interview and at least one interview postpartum. Biographical details of the respondents are discussed below.

*4.2.3.1     Participants' demographic information*

*4.2.3.1.1     Age*

Table 1

*Age Distribution*

| Age | Frequency | Percentage |
|---|---|---|
| 15-20 | 7 | 23.3 |
| 21-25 | 10 | 33.3 |
| 26-30 | 5 | 16.7 |
| 31-35 | 7 | 23.3 |

| | | |
|---|---|---|
| 36-40 | 1 | 3.3 |
| Total | 30 | 100 |

Of the 30 women included in this analysis, the majority of the women (33.3%) were between the ages of 20 and 26 years at the time of recruitment. Whilst the women's ages ranged between 16 and 38 years, the average age of the women at the time of recruitment was 25 years.

*4.2.3.1.2 Relationship status*

Table 2

*Relationship status*

| Status | Frequency | Percentage |
|---|---|---|
| Married | 12 | 40 |
| Unmarried | 18 | 60 |
| Total | 30 | 100 |
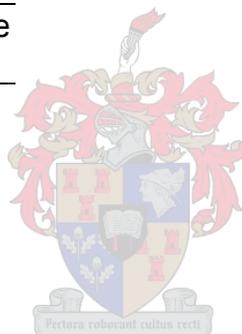
Although at the time of recruitment, 12 (40%) women were married and 18 (60%) women were unmarried, the relationship status of the participants often changed during the course of the interviews. Of the 18 women that were unmarried, 2 (11.1%) were engaged, 7 (38.9%) were in a relationship with the father of the baby, 1 (5.6%) was in a relationship with someone other than the father of the baby and 8 (44.4%) women did not have partners.

*4.2.3.1.3 Number of children excluding fetus*

Table 3

*Number of children*

| Children | Frequency | Percentage |
|---|---|---|

| | | |
|---|---|---|
| 0 | 17 | 56.7 |
| 1 | 7 | 23.3 |
| 2 | 6 | 20 |
| Total | 30 | 100 |

_____

For 17 (56.7%) of the participants their current pregnancy was to result in the birth of their first child, whilst for 7 (23.3%) women this would be their second child and for 6 (20%) women it would be their third child.

*4.2.3.1.4    Employment*

Table 4

*Employment status*

| Status | Frequency | Percentage |
|---|---|---|
| Full-time | 9 | 30 |
| Part-time | 5 | 16.7 |
| Scholars | 3 | 10 |
| Unemployed | 13 | 43.3 |
| Total | 30 | 100 |

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Of the 30 women in this study, 13 women (43.3%) were unemployed, 9 women (30%) were in full-time employment, 5 women (16.7%) were in part-time employment and 3 (10%) women were still scholars. Whilst many of the women worked as farm labourers, the other women worked as cleaners, waitresses, secretaries or general workers.

*4.2.3.1.5    Literacy*

Table 5

*Level of education*

| Level of education | Frequency | Percentage |
| --- | --- | --- |
| Primary | 3 | 10 |
| Secondary | 25 | 83.3 |
| Unknown | 2 | 6.7 |
| Total | 30 | 100 |

All but 2 (93.3%) of the women were literate, with 3 participants (10%) having primary school as their highest level of education, 25 participants (83.3%) having received some level of secondary education and 2 (6.7%) participants whose educational status was unknown.

*4.2.3.1.6 Bathroom in house*

Table 6

*Bathroom in house*

| Bathroom | Frequency | Percentage |
| --- | --- | --- |
| No | 6 | 20 |
| Yes | 23 | 76.7 |
| Unknown | 1 | 3.3 |
| Total | 30 | 100 |

Whilst the vast majority (76.7%) of the research participants had bathrooms in their homes, one-fifth of the respondents did not. This could be an indication of poor living conditions for some of the respondents.

*4.2.3.1.7 Electricity in house*

Table 7

*Electricity in house*

| Electricity | Frequency | Percentage |
|---|---|---|
| No | 2 | 6.7 |
| Yes | 27 | 90 |
| Unknown | 1 | 3.3 |
| Total | 30 | 100 |

Although the majority (90%) of respondents had electricity in their homes, 6.7% of the respondents did not, once again highlighting that some of the participants' living conditions were less than ideal.

*4.2.3.1.8        Religious affiliation*

Table 8

*Religious affiliation of participants*

| Affiliation | Frequency | Percentage |
|---|---|---|
| Anglican | 2 | 6.7 |
| Dutch Reformed | 3 | 10 |
| Eternal Faith Crusaders | 1 | 3.3 |
| Mount Herob | 1 | 3.3 |
| Old Apostolic | 13 | 43.3 |
| Pniel Congregation | 1 | 3.3 |
| St. John | 3 | 10 |
| No affiliation | 1 | 3.3 |
| Unknown | 5 | 16.7 |
| Total | 30 | 100 |

As Table 8 indicates 43.3% of the respondents are affiliated to the Old Apostolic church, indicating that this church appears to be dominant in the community. The fact that only one participant (3.3%) indicated no religious affiliation suggests that religion or belonging to a congregation plays a prominent role in this community.

*4.2.3.1.9     Income*

Table 9

*Monthly income of participants*

| Income (ZAR) | Frequency | Percentage |
|---|---|---|
| 0 | 16 | 53.3 |
| 300-500 | 2 | 6.7 |
| 501-700 | 1 | 3.3 |
| 701-900 | 3 | 10 |
| 901-1100 | 1 | 3.3 |
| 1101-1300 | 1 | 3.3 |
| 1301-1500 | 3 | 10 |
| 1501-1700 | 1 | 3.3 |
| 1701-1900 | 0 | 0 |
| 1901-2100 | 0 | 0 |
| 2101-2300 | 0 | 0 |
| 2301-2500 | 1 | 3.3 |
| Unknown | 1 | 3.3 |
| Total | 30 | 100 |
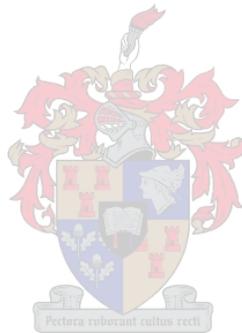
Table 10

*Monthly income of participants' household*

| Income (ZAR) | Frequency | Percentage |
|---|---|---|
| 500 -1000 | 1 | 3.3 |
| 1001-1500 | 2 | 6.7 |
| 1501-2000 | 7 | 23.4 |
| 2001-2500 | 4 | 13.3 |
| 2501-3000 | 0 | 0 |
| 3001-3500 | 3 | 10 |
| 3501-4000 | 1 | 3.3 |
| >4000 | 1 | 3.3 |
| Unknown | 11 | 36.7 |
| Total | 30 | 100 |

The poverty critical range as per adult equivalent per month in South African Rand (ZAR) is taken to be R640 (Woolard, 1998). Taking the monthly income of the respondents and their household into account, as well as the fact that there are at least two members in each household (see Table 11), one can conclude that a large percentage of the respondents live below the poverty line as set by the South African Government.

*4.2.3.1.10    Number of residence in house*

Table 11

*Number of people residing in participant's house*

| No. of people | Frequency | Percentage |
|---|---|---|
| 1 | 0 | 0 |

| | | |
|---|---|---|
| 2 | 2 | 6.7 |
| 3 | 5 | 16.7 |
| 4 | 7 | 23.3 |
| 5 | 3 | 10 |
| 6 | 4 | 13.3 |
| 7 | 5 | 16.7 |
| 8 | 2 | 6.7 |
| 9 | 0 | 0 |
| 10 | 0 | 0 |
| 11 | 1 | 3.3 |
| Unknown | 1 | 3.3 |
| Total | 30 | 100 |

According to the South African Government's paper on New Housing and Strategy for South Africa (1994), the average household size nationwide is 4.97 people. The low and progressively decreasing rates of formal and informal housing delivery in South Africa have resulted in a large increase in the number of households forced to share accommodation with other families, resulting in informal settlements, backyard shacks and overcrowded conditions in existing formal housing. As Table 10 shows, 53.3% of the women in this study lived in households that were above the average household size of the nation. This could once again be indicative of the poor living conditions and overcrowding to which many of the participants are subjected.

4.2.4   Measurement instruments

4.2.4.1 *Beck Depression Inventory*

4.2.4.1.1      *Introduction*

The BDI (see Addendum C) was designed by Beck, Ward, Mendelson, Mock and Erbaugh in 1961(Beck et al., 1996) to measure the presence and degree of depression in adults and children and has become one of the most frequently used general depression instruments in postpartum depression research (Beck & Gable, 2001b). Whilst some researchers (see for instance Cox as in Rodrigues, Patel, Jaswal & de Souza, 2003; Huffman, Lamour, Bryan & Pederson as in Lee, 1997) argue that depression rating scales such as the BDI may be inappropriate for use in postpartum research, as they may confound the symptoms of depression with the normal consequences of childbirth and caring for a new baby (e.g. changes in sleeping patterns, eating, weight and sexual activity), other researchers (see for instance Beck & Gable, 2001a; Lee, Yip, Chiu, Leung & Chung, 2001) have found the BDI useful in detecting postpartum depression. Lee found that the BDI not only has good concurrent validity with the EPNDS, it has good sensitivity and specifity in detecting depression in the early postpartum period. Despite the controversy surrounding the use of the BDI in postpartum depression research, at the time when this study was first implemented (first pilot began in 1997) the BDI was the only depression inventory that had been translated into Afrikaans and validated in an Afrikaans community. Since the commencement of the research study, other measuring instruments have become available, but in order to ensure continuity and validity of the findings, a decision was made not to change the measurement instruments during the course of the study (L.M. Kruger, personal communication, July 28, 2005).

### 4.2.4.1.2    *Composition of test items*

The BDI consists of 21 multiple-choice items, which assess the intensity of the depression, as experienced by the respondent. Each of the items corresponds to a specific category of depressive symptom or attitude, including mood, pessimism, crying, and irritability. Each of the categories describes a specific behavioural manifestation of depression

and consists of a graded series of four self-evaluated statements. The statements are ranked in order and weighted to reflect the range of severity of the symptom from neutral (score of naught) to maximum severity (score of three). The Centre for Cognitive Therapy has distributed the following guidelines for BDI cut-off scores for persons having an affective disorder: none or minimal depression is <10; mild to moderate depression is 10-18; moderate to severe depression is 19-29; and severe depression is 30-63 (Beck, Steer & Garbin, 1988). Although initially designed to be administered by trained interviewers, it is most often self-administered and takes 5 to 10 minutes to complete (Beck et al., 1988).

### 4.2.4.1.3    *Standardization*

The BDI has been extensively used in cross-cultural contexts (Steer, Beck & Garrison as in Park & Dimigen, 1995) and is one of the most frequently used general depression instrument in postpartum depression research (Beck & Gable, 2001a). The BDI has good internal consistency and convergent validity with psychiatrist's ratings of depression severity and with other self-report measures of depression (Beck et al., 1988).

In a study comparing the psychometric properties of the BDI with the EPNDS and the GHQ, Lee et al. (2001) found that the sensitivity of the BDI was 82%, specifity was 89%, positive predictive value was 50% and the negative predictive value was 95%.

### 4.2.4.1.4    *Reliability*

#### 4.2.4.1.4.1    Internal consistency

Based on a review of 25 studies that addressed the internal consistency of the BDI for psychiatric and non-psychiatric populations, Beck et al. (1988) found that for psychiatric populations the mean coefficient alpha was 0.86 and for non-psychiatric populations, the mean coefficient alpha was 0.81, indicating that the BDI has high internal consistency in both psychiatric and non-psychiatric populations.

#### 4.2.4.1.4.2    Stability

Reviewing the 10 studies that reported pre- and post-test administrations of the BDI, Beck et al. (1988) found that the range of the Pearson product-moment correlation coefficients for psychiatric patients ranged from 0.48 to 0.86 whilst the coefficients for non-psychiatric patients ranged from 0.60 to 0.83. Beck et al. (1988) further found that from the lower boundary of the non-psychiatric population's range these subjects displayed more stable BDI scores than the psychiatric patients and that the high correlations of non-psychiatric groups suggest that the BDI does demonstrate substantial stability over a week-long period.

4.2.4.1.5     *Validity*

Beck et al. (1988) reviewed 35 studies that reported correlations between the BDI and a variety of concurrent measures of depression. It was found that the BDI is not only related to clinical assessments of depression, but also demonstrated strong positive relationships with numerous other instruments measuring depression, including the Hamilton Psychiatric Rating Scale for Depression (HRSD), the Zung Self-reported Depression Scale, the MMPI Depression Scale and the Multiple Affective Adjective Checklist Depression Scale (MAACL-D).

It was further found that the construct validity of the BDI is strong, and that the BDI detects a number of hypothesized relationships between physiological, behavioural and attitudinal variables indicative of depression.

With respect to factor analytic studies, the BDI appears to be measuring a general second-order syndrome of depression, which suggests three highly inter-correlated factors reflecting negative attitudes, performance difficulties, and somatic complaints.

4.2.4.1.6     *Reliability and validity for use in South Africa*

The scale is easily administered and has been successfully used in South Africa on Xhosa speaking students (Lester & Akande, 1997) and on secondary school students residing

in the Western Cape (Seedat, Nyamai, Njenga, Vythilingum & Stein, 2004). Although no findings are currently available, researchers from the WMHRP at the University of Stellenbosch are investigating the validity and reliability of the BDI for use in low-income, rural communities in South Africa (A. Coertzen, personal communication, July 28, 2005).

*4.2.4.1.7      Translation*

The Afrikaans version of the BDI used in this study was translated in 1988, with permission of the Foundation for Cognitive Therapy and Research, by Professor A.T. Möller. The translation was done by means of the Brislin method of back translation, but was not standardized (A.T.M. Möller, personal communication, July 27, 2005). The questionnaire was administered in the current study in either English or Afrikaans, depending on the language of choice of the participant.

4.2.5  Procedure

4.2.5.1 <u>Introduction</u>

As previously mentioned this study formed part of a larger study, which focuses on how low-income women experience birth, pregnancy and early motherhood. Participants were assigned an interviewer who interviewed them on four different occasions. During the four interviews, the researcher conducted an open-ended interview with the participant, during which the woman's experience of pregnancy, birth, and early motherhood were discussed, with the interviewer focusing on topics such as current symptomology, relationships, sexuality, reproductive health, substance use, violence and religion.

In addition to the open-ended interview, during the first interview, each participant was asked to sign a consent form and complete a demographic form, the BDI and the GHQ. During the second, third and fourth interview the participants were required to complete the EPNDS in addition to the BDI and the GHQ.

4.2.5.2 <u>Interviewers</u>

Honours and masters students enrolled in the Psychology Department at the University of Stellenbosch conducted the interviews. All researchers underwent intensive selection and training sessions before they were permitted to conduct any interviews.

### 4.2.5.3 *Completion of questionnaires*

The interviews were conducted either at the local clinic, at the participant's home or at the research office in the Psychology Department at the University of Stellenbosch, depending on which was more convenient for the participant. All interviews were recorded to assist in the analysis process. The questionnaires were self-administered, unless the participant was illiterate, in which case the researcher read the questionnaires to the participant. Due to the nature of the dialect of the participants, even though the interview and questionnaires were conducted in the participant's home language, occasions were reported where the interviewer was required to elaborate or explain a term to a participant. Despite the presence of trained interviewers, who explained to the participants how to complete the questionnaires, there were many instances where a participant either failed to answer one or more questions on the questionnaire or chose more than one option as an answer for a specific question. As a result, six sets of questionnaires were inadmissible due to the failure of participants to accurately complete the questionnaires.

### 4.2.6 Data analysis

Paired-samples t-tests (also know as correlated t-tests) were used to test the research hypotheses, as it is the most appropriate method of analysis when working with data collected from each participant on various occasion or under different conditions (Brace, Kemp & Snelgar, 2000; Pallant, 2001).

Individual statistics of the individual scores at the various time periods was computed for the total sample. These statistics are reported in the following chapter. Statistical analyses were done using SPSS for Windows, version 9.0.

4.2.7   Ethical concerns

Ethical issues are of great importance in social science research as it involves the study of living persons. The University of Stellenbosch's ethical guidelines state that where individuals are the focus of research, "their right to decent treatment should be respected and in particular their right to privacy, their right to confidentiality of personal information, their right to informed consent and their right to the minimization of risks to which people could be exposed in the research process" (University of Stellenbosch as in Lesch, 2000).

Informed consent was obtained from the research participants (See Addendum A). The consent forms highlighted the following issues: the purpose of the research; the number of interviews to be conducted and what each interview would entail; confidentiality and specific measures to ensure confidentiality; participant's right to discontinue participation in the study at any stage and the availability of resources should the respondent have any personal problems during or after the completion of the research.

In order to ensure that the research process was a positive and ethically sound experience for all those involved, the research team also offered supervision and training to the interviewers.

CHAPTER FIVE: RESULTS

## 5.1 Prevalence of depressive symptomatology

### 5.1.1 Prepartum

Table 12

*Prevalence rates for mild and moderate to severe depression at the prepartum assessment*

|  | Mild depression | | Moderate to severe depression | | Total depression | |
| --- | --- | --- | --- | --- | --- | --- |
| Time | N | % | N | % | N | % |
| Prepartum | 10 | 33.3 | 8 | 26.7 | 18 | 60 |

Of the 30 women interviewed during pregnancy, 10 (33.3%) women met with the criteria for mild depression and 8 (26.7%) women met with the criteria for moderate to severe depression, indicating a 60% prevalence rate of depression during the prepartum period.

### 5.1.2 Three months postpartum

Table 13

*Prevalence rates for mild and moderate to severe depression at the three months postpartum assessment*

|  | Mild depression | | Moderate to severe depression | | Total depression | |
| --- | --- | --- | --- | --- | --- | --- |
| Time | N | % | N | % | n | % |
| 3 months postpartum | 5 | 17.2 | 6 | 20.7 | 11 | 37.9 |

Of the 30 women included in this study, scores are available for 29 of these women for the three-month postpartum assessment. The results indicate that five (17.2%) of the women met with the criteria for mild depression and six (20.7%) met with the criteria for moderate to

severe depression, indicating a 37.9% prevalence rate of depression amongst the women at the three month postpartum assessment point.

5.1.3   Six months postpartum

Table 14

*Prevalence rates for mild and moderate to severe depression at the six months postpartum assessment*

| Time | Mild depression | | Moderate to severe depression | | Total depression | |
|---|---|---|---|---|---|---|
| | N | % | N | % | n | % |
| 6 months postpartum | 4 | 16 | 8 | 32 | 12 | 48 |

Of the 30 women included in this study, scores are available for 25 of these women for the six-month postpartum assessment. The results indicate that four (16%) of the women met with the criteria for mild depression and eight (32%) with the criteria for moderate to severe depression, indicating a 48% prevalence rate of depression amongst the women at the six month postpartum assessment point.

5.2     Comparison of pregnancy BDI scores with BDI scores at three months postpartum

Table 15

*Differences between prepartum and three months postpartum scores on the BDI*

| | M | SD | t (28) | p | CI (95%) for MD |
|---|---|---|---|---|---|
| Prepartum | 12.93 | 8.97 | 2.201 | .036 | .21and 5.99 |
| Three months postpartum | 9.83 | 8.19 | | | |

A paired sample t-test was conducted to evaluate whether low-income women experience an increase in depressive symptoms at three months postpartum as compared to depressive symptomatology prepartum. The results (see Table 15) show that there was a

significant difference between the depressive symptomatology rates at three months postpartum (M = 9.83, SD = 8.19) as compared to the depressive symptomatology rates prepartum (M = 12.93, SD = 8.97), t (28) = 2.201, p <0.05, with the women showing a significant decrease from the prepartum period to the three month postpartum period.

5.3     Comparison of pregnancy BDI scores with BDI scores at six months postpartum

Table 16

*Differences between prepartum and six months postpartum scores on the BDI*

|  | M | SD | t (24) | p | CI (95%) for MD |
|---|---|---|---|---|---|
| Prepartum | 13.12 | 9.13 | .096 | .925 | .22 and 3.61 |
| Six months postpartum | 12.96 | 11.90 | | | |

A paired sample t-test was conducted to evaluate whether low-income women experience an increase in depressive symptoms at six months postpartum as compared to depressive symptomatology prepartum. The results (See Table 16) show that there was no significant difference between the rates of depressive symptomatology at six months postpartum (M = 12.96, SD = 11.90) compared to the rates of depressive symptomatology prepartum (M = 13.12, SD = 9.13), t (24) = 0.096, p > 0.05.

5.4     Case studies comparison

5.4.1   BDI scores indicating high depressive symptomatology at pregnancy vs. BDI scores at three months postpartum

Table 17

*Differences between high prepartum and three months postpartum scores on the BDI*

|  | M | SD | t(6) | p | CI (95%) for MD |
|---|---|---|---|---|---|
| High prepartum | 26.43 | 5.29 | 3.462 | .013 | 2.68 and 15.60 |
| Three months postpartum | 17.29 | 8.52 | | | |

A paired sample t-test was conducted to evaluate whether low-income women who had obtained a high BDI Score (≥ 19) prepartum, thus indicating high levels of depressive symptomatology, continued to experience increased levels in depressive symptomatology at three months postpartum. A significant difference was found between the high levels of depressive symptomatology at the prepartum assessment (M = 26.43, SD = 5.29) as compared to the rate of depressive symptomatology at the three month postpartum assessment (M = 17.29, SD = 8.52), t (6) = 3.462, p <0.05, with the women showing a significant decrease in depressive symptomatology from the prepartum assessment to the three month postpartum assessment.

5.4.2  BDI scores indicating high depressive symptomatology at pregnancy vs. BDI scores at six months postpartum

Table 18

*Differences between high prepartum and six months postpartum scores on the BDI*

|  | M | SD | t (5) | P | CI (95%) for MD |
|---|---|---|---|---|---|
| High prepartum | 27.50 | 4.51 | .086 | .935 | -9.66 and 10.33 |
| Six months postpartum | 27.17 | 13.23 | | | |

A paired sample t-test was conducted to evaluate whether low-income women obtaining a high BDI Score (≥ 19) prepartum continued to experience increased levels in depressive symptomatology at six months postpartum. The results (See Table 18) show that there was no significant difference between the high levels of depressive symptomatology at the prepartum assessment (M = 27.5, D = 4.51) as compared to the rate of depressive symptomatology at the sixth month postpartum assessment (M = 27.17, SD = 13.23), t (5) = 0.086, p >0.05.

5.4.3  BDI scores indicating high rates of depressive symptomatology at three months postpartum vs. pregnancy scores

Table 19

*Differences between high three months postpartum and prepartum scores on the BDI*

|  | M | SD | t (5) | p | CI (95%) for MD |
|---|---|---|---|---|---|
| High three months postpartum | 23.67 | 3.39 | .167 | .874 | -11.96 and 13.62 |
| Prepartum | 22.83 | 11.34 |  |  |  |

A paired sample t-test was conducted to evaluate whether low-income women obtaining a high BDI Score (≥19) at the three-month assessment, hence indicating high levels of depressive symptomatology, had experienced increased levels in depressive symptomatology at the prepartum assessment as well. The results (See Table 19) show that there was no significant difference between the high levels of depressive symptomatology at the three month postpartum assessment (M = 23.67, SD = 3.39) as compared to the level of depressive symptomatology at the prepartum assessment (M = 22.83, SD = 11.34), t (5) = 0.167, p >0.05.

5.4.4   BDI scores indicating high rates of depressive symptomatology at six months postpartum vs. pregnancy scores

Table 20

*Differences between high six months postpartum and prepartum scores on the BDI*

|  | M | SD | t (7) | p | CI (95%) for MD |
|---|---|---|---|---|---|
| High six months postpartum | 26.75 | 10.71 | 1.772 | .11 | -2.05 and 14.30 |
| Prepartum | 20.63 | 11.41 |  |  |  |

A paired sample t-test was conducted to evaluate whether low-income women obtaining a high BDI Score (≥ 19) at six months postpartum, had experienced increased levels in depressive symptomatology at the prepartum assessment. No significant difference was found between the high levels of depressive symptomatology at the six month

postpartum assessment (M = 26.75, SD = 10.71) and the level of depressive symptomatology

at the prepartum assessment (M = 20.63, SD = 11.41), t (7) = 1.772, p > 0.05.

## CHAPTER SIX: DISCUSSION AND CONCLUSION

6.1     <u>Introduction</u>

In popular literature the symptoms and causes of postpartum depression are routinely taken to be directly related to the physiology of childbirth, particularly the hormonal changes that take place following childbirth (Nicolson, 1998). The concept of postpartum depression is therefore tied to an implicit assumption that there is an elevation of depressive symptomatology in the postpartum period as compared to other stages in a woman's life.

Although women do experience depressive symptoms during the postpartum period (Kruger & Smit, 2002), it is becoming increasingly unclear as to whether they are at an increased risk for the development of depression during the postpartum period when compared to other stages in their lives (Kruger & Smit) and as to whether it is useful to think of depression during the postpartum period as precipitated by childbirth (Najman et al., 2002). The concept of postpartum depression has therefore become increasingly controversial in both research and practice.

The current research was based on the hypothesis that women experience no significant difference in mood status postpartum in comparison to their mood status prepartum. The aim of this study was to determine whether low-income women residing in a rural community in South Africa experienced any significant difference in the prevalence rates of depressive symptoms postpartum as compared to depressive symptoms prepartum.

In this chapter the results of the current study are discussed in terms of previous studies and available literature on depression during the prepartum and postpartum period.

6.2     <u>Prevalence rates of depression</u>

6.2.1  Prepartum assessment

The results from the current study show that 60% of the participants met with the criteria for elevated levels of depressive symptomatology during the prepartum period.

This is in comparison to other studies conducted in the developed world in which researchers found prepartum elevated levels of depressive symptomatology of 30.2% (Aderibigbe et al., 1993) and 46% (Patel et al., 2002) and prepartum depression rates of 16% (Chandran et al., 2002) and 4.4% (Lee et al., 2004). In comparison, studies conducted in developed countries found prevalence rates of depressive symptomatology during the prepartum period of 24.3% (Verkerk et al., 2003) and 19.1% (de Tychey et al., 2005) and prepartum depression rates of 41.7% (Hobfoll et al., 1995) and 46.3% (Areis et al., 1996). The fact that the prevalence rate of depressive symptomatology as determined by other researchers is lower than the rates found in the current study can possibly be attributed to the differences in the measuring instruments used, the construct being measured and the differences in the socio-economic statuses of the women in the current study and those residing in developed nations.

6.2.2   Three month postpartum assessment

The results from the current study show that 37.9% of the participants met with the criteria for elevated levels of depressive symptomatology at the three-month postpartum assessment period.

Although none of the available literature contains research from developing countries where the prevalence rate of depression was measured at three months postpartum, there is however data available from studies that were conducted in the developed world. In comparison to these studies the finding of the current study of a 37.9% prevalence rate of elevated levels of depressive symptomatology at the three month postpartum assessment is consistent the depression rate of 36% as found by McMahon et al. (2001), but is higher than the 8.3% prevalence rate of elevated levels of depressive symptomatology as found by Wickberg and Hwang (1997).

The differences in prevalence rates can once again not only be attributed to the differences in the socio-economic statuses between the women in the current study and those living in developed nations, but can also be attributed to differences in the measuring instruments used. Whilst the current study made use of the BDI to assess levels of depressive symptomatology, Wickberg and Hwang (1997) made use of the EPNDS. Whereas the EPNDS was specifically designed to determine the prevalence of depressive symptoms during the postpartum period, the BDI was designed to assess for general depressive symptoms and includes questions on sleep disturbances, loss of interest in sex and weight loss, factors that are all associated with the changing physiological symptoms of early motherhood (Beck & Gable, 2001b; O'Hara & Zekoski, 1988).

Of interest to note however is that despite measuring for a different construct to the current study (depression versus depressive symptomatology), the postpartum prevalence rates of the two constructs was similar. This could be due to the fact that the women in McMahon's study had infants with settling and feeding difficulties and it has been found that these mothers have a much higher rate of depressive symptomatology or more psychological distress than mothers in comparison groups (Dudley et al., 2001 & McMahon et al., 2001).

6.2.3   Six month postpartum assessment

The results from the current study show that at the time of the sixth month assessment, 48% of the participants in the current study met with the criteria for elevated levels of depressive symptomatology. These findings are higher than the 4.2% found by Ghubash and Abou-Saleh (1997) and the 22% found by Patel et al. (2002) who also conducted their research in developing countries. As was the case with the prepartum assessment results, the significant difference in the findings of the various researchers could be due to the use of different measuring instruments; as whilst the current study made use of the BDI to assess

the levels of depressive symptomatology, Patel et al. made use of the EPNDS and Ghubash and Abou-Saleh made use of the PSI.

The prevalence rates as found in the studies conducted in the developed world are higher than the rate as found by the current study. Whilst the current study found a prevalence rate of depressive symptomatology of 48%, Cox et al. (1993) found a rate of 13,8%, Cooper et al. (1988) a rate of 8.8% and Najman et al. (2000) a rate of 4%. As was the case with the prepartum and three-month postpartum results, these differences could not only be due to the different socio-economic statuses of the women in the current study as compared to those in the developed world, but is most probably due to the difference in measurement instruments used and constructs measured. As previously mentioned, the current study made use of the BDI to assess the prevalence of depressive symptomatology, whereas Najman et al. made use of the DSSI-D and Cox et al. the EPNDS to assess the prevalence of depressive symptomatology, Cooper et al. (1988) made use of the PSE to assess for the prevalence of a psychiatric disorder.

6.2.4   Conclusion

It is difficult to draw conclusions regarding the reason for the current study's findings of higher depressive symptomatology rates at all three assessment points in comparison to the findings of the majority of the other studies conducted in the developing world as well as those conducted in the developed world. This difficulty is due to a number of factors, including the variation in the timing of assessments both during the prepartum period and the year following childbirth; variation in measuring instruments used as well as the socio-demographic statuses of the various samples of women. An analysis of the qualitative data collected from the larger study may reveal more about this.

6.3 <u>Comparison of pregnancy BDI scores with BDI scores at three months postpartum</u>

The results from the current study indicate that low-income women from a rural community in Southern Africa experience a decrease in the prevalence rates of depressive symptomatology at three months postpartum (M = 9.83, SD = 8.19) when compared to the prevalence of depressive symptomatology at the prepartum assessment (M = 12.93, SD = 8.97), t (28) = 2.201, p <0.05.

This is in contrast to the findings of Chandran et al. (2002) and Cooper et al. (1988) who found no significant difference in the prevalence rates of depression between childbearing women during the second and third trimester of pregnancy and the first three months postpartum.

The findings of the current study is also in contrast to the work of Areias et al. (1996) who found an increase in depression and Verkerk et al. (2003) who found an increase in depressive symptomatology, in the first three months postpartum as compared to prepartum. However, both Areias et al. and Verkerk et al. asserted that the presence of depression and depressive symptomatology during the first three months postpartum was associated with a personal lifetime history of depression prior to pregnancy, the presence of depression during pregnancy or having a partner with a history of depression.

6.4 Comparison of pregnancy BDI scores with BDI scores at six months postpartum

The findings from the current research study indicate that the women in this study did not experience a significant difference in the prevalence of depressive symptomatology prepartum (M = 13.12, SD = 9.13) as compared to the prevalence of depressive symptomatology at six months postpartum (M = 12.96, SD = 11.90), t (24) = 0.096, p > 0.05.

This is consistent with the findings of Cooper et al. (1988) and Patel et al. (2002), but is in contrast to the findings of Najman et al. (2000) who found that from the first assessment during pregnancy to the second assessment at five days postpartum to the third assessment

at six months postpartum women continued to experience a decrease in the presence of depressive symptomatology.

## 6.5    Case studies

### 6.5.1   BDI scores indicating high depressive symptomatology at pregnancy versus BDI scores at three months postpartum

The current research showed that the women in this study who experienced high levels of depressive symptomatology during pregnancy showed a significant decrease in the prevalence rate of depressive symptomatology at the three months postpartum assessment as compared to the prevalence of depressive symptomatology at the prepartum assessment.

This is in contrast to the findings as reported by Areias et al. (1996), Chandran et al. (2002) and Nhiwatiwa et al. (1998) who noted that the presence of depression during pregnancy was a strong predictor for the presence of depression during the first three months postpartum. Verkerk et al. (2003) found similar results with regard to depressive symptomatology and the researchers noted that women identified at high risk (those having elevated depressive symptomatology scores during pregnancy) were more likely to develop elevated levels of depressive symptomatology or depression during the postpartum period than those identified during pregnancy as being at low risk.

### 6.5.2   BDI scores indicating high depressive symptomatology at pregnancy versus BDI scores at six months postpartum

The current investigation found no significant difference between the scores of those women who had high depressive symptomatology scores prepartum as compared to their scores at the six-month postpartum assessment, indicating that those women who reported high levels of depressive symptomatology prepartum continued to report high levels of depressive symptomatology at six months postpartum.

Similar findings were reported by Areias et al. (1996), who found the presence of depression during pregnancy and Verkerk et al. (2003) who found the presence of depressive symptomatology during pregnancy to be a strong predictor for the presence of depression and depressive symptomatology during the first six months postpartum.

This once again indicates that the presence of high levels of depressive symptomatology during the postpartum period is associated with the presence of high levels of depressive symptomatology during pregnancy and that it is not the birth of a child that results in the mother experiencing depressive symptomatology during the postpartum period, but rather the presence of a pre-existing antenatal illness.

6.5.3   BDI scores indicating high depressive symptomatology at three months postpartum versus pregnancy scores

The current research showed no significant difference between the scores of the women who reported experiencing high levels of depressive symptomatology at three months postpartum as compared to the presence of depressive symptomatology during pregnancy, indicating that those women who had high depressive symptomatology scores at the three month postpartum assessment had already shown high levels of depressive symptomatology at the prepartum assessment.

Similar findings were reported by Areias et al. (1996), Chandran et al. (2002) and Nhiwatiwa et al. (1998) who, as previously mentioned, found that women who have higher levels of depression at the three month postpartum assessment are likely to have shown high levels of depression at the prepartum assessment. Verkerk et al. (2003) reported similar findings with regard to depressive symptomatology. This once again suggests that postpartum mental illness is a continuation of a pre-existing prenatal mental illness, rather than something that is brought on by childbirth. It once again highlights the relevance of a

screening questionnaire during pregnancy to determine whether a woman is at risk for developing a postpartum mood disorder.

6.5.4   BDI scores indicating high depressive symptomatology at six months postpartum versus pregnancy scores

The current study found no significant difference between the scores of the women who reported experiencing high levels of depressive symptomatology at the six month postpartum assessment as compared to the levels of depressive symptomatology reported during pregnancy, indicating that those women who had high levels of depressive symptomatology at six months postpartum already showed high levels of depressive symptomatology at the prepartum assessment.

Similar findings were reported by Areias et al. (1996) and Verkerk et al. (2003) who, as previously mentioned, found the presence of depression and depressive symptomatology during pregnancy to be a strong predictor for the presence of depression and depressive symptomatology during the first six months postpartum, once again indicating that it is not the birth of a child, but rather the presence of a pre-existing illness that results in the mother experiencing elevated levels of depressive symptomatology during the postpartum period.

6.6   Implications

This study aimed to determine whether low-income women in a rural community in South Africa experienced any significant difference in the prevalence rate of depressive symptomatology during the first six months postpartum as compared to the prevalence rate of depressive symptomatology prepartum. This study is based on the assumption that postpartum depression is not brought on by childbirth and is therefore not the unique entity that it has come to be known as.

Firstly, the results show that the women in the current study experienced higher levels of depressive symptoms during the prepartum assessment and during both of the postpartum assessments than the women in the majority of other studies that were discussed.

Secondly, it was found that the sample from the current study experienced a decrease in the rate of depressive symptomatology from the prepartum assessment to the three-month postpartum assessment, but did not experience any significant difference from the prepartum assessment to the six-month postpartum assessment.

Thirdly, the results showed that a relationship exists between the levels of depressive symptomatology prepartum and the levels of depressive symptomatology at six months postpartum, as those women who experienced high levels of depressive symptomatology during pregnancy continued to show high levels of depressive symptomatology at the six-month postpartum assessment.

Fourthly, the results showed that no relationship exists between the levels of depressive symptomatology prepartum and the levels of depressive symptomatology at three months postpartum, as those women who experienced high levels of depressive symptomatology during pregnancy showed a decrease in the levels of depressive symptomatology at the three-month postpartum assessment

With regards to the controversy surrounding the construct of postpartum depression, these findings seem to suggest that it is not the birth of a child that leads to a woman experiencing elevated levels of depressive symptomatology postpartum, but rather that elevated levels of depressive symptomatology during the postpartum period is a continuation of a pre-existing set of depressive symptoms, and vice versa. Other researchers have reported similar findings (see for instance Chandran et al., 2002; Cooper et al., 1988; Patel et al., 2002).

These findings are important as they address various aspects that contribute to the controversy surrounding the construct of postpartum depression.

Firstly, it addresses the controversy surrounding the prevalence rates of postpartum depression or elevated levels of depressive symptomatology during the postpartum period. When the prevalence rates of the current study were compared to similar studies, the current study highlighted the impact that factors such as sample size and sociodemographic variables have on the variation in prevalence rates amongst the various studies.

Secondly, the current study addresses the controversy surrounding the onset of postpartum depression. By measuring the rates of depressive symptomatology both during the prepartum and postpartum period, the findings from the current study show that whilst there was a significant difference between the prepartum and three-month postpartum prevalence rates of depressive symptomatology, no significant difference was found between the prevalence rates of depressive symptomatology between the prepartum and six month postpartum assessments. These results indicate that elevated levels of depressive symptomatology postpartum are a continuation of the elevated levels of depressive symptomatology present prior to childbirth, therefore making it misleading to categorize such pre-existing symptoms of depression as cases of postpartum depression.

Due to the fact that the current study only recruited women once they were already pregnant, it is unclear whether the onset of depressive symptomatology was as a result of the pregnancy or if the onset occurred prior to pregnancy.

A number of issues regarding the controversy of postpartum depression as a distinct diagnosis are not addressed in the current study. Firstly, the current study does not address the question as to whether depression during the postpartum period is different from depression at any other time of life, or depression that men, or women who are not mothers, might suffer. This question, is however currently being investigated by researchers as part of

the larger study being conducted by the WMHRP at the psychology department at the University of Stellenbosch. Secondly, the current study assumes the validity of the BDI for measuring depressive symptomatology in low-income, coloured women residing in a rural community in South Africa. Researchers (see for instance Beck & Gable, 2001b; O'Hara & Zekoski, 1988) have argued that the use of general depression scales during the postpartum period is problematic due to the issue of symptomatic overlap between the postpartum period and depression. This question regarding the validity of the BDI for use in low-income men and women residing in a rural community in South Africa is another study that is currently being conducted by researchers at the WMHRP.

The findings of the current study indicate that depression during the postpartum period is a continuation of a pre-existing, possibly antenatal, illness. This is in agreement with the findings of other researchers (Chandran et al., 2002; Cooper et al., 1988; Nhiwatiwa et al., 1988; O'Hare et al., 1990; Patel et al., 2002) who found that women with histories of depression or elevated levels of depressive symptomatology during pregnancy appear to be at high risk for depression during the postpartum period. Other risk factors for depression during the postpartum period include a personal history of depression (Areis et al., 1996; Verkerk et al., 2003), low social economic status (Kumar et al., 1996), education level, pregnancy and delivery complications (Campbell & Cohn, 1991) and poor marital and social relationships (Murray, 1992).

The fact that depression during the postpartum period appears not to be related to the birth of a child, but rather to a pre-existing illness, does not imply that it is not an area for concern. The fact remains that having women experience depression during the postpartum period has lasting implications and consequences on not only the women themselves, but also on their infants, their spouses and the rest of their families. Prenatal screening of women would give an indication of those who are suffering from depression as well as those who are

at high risk for developing depression during the postpartum period and therefore assist in providing them with the necessary support and care.

As the prevalence rates of depressive symptomatology at all three points of assessment in the current study were higher than those found by researchers in both the developed and developing world, factors associated with these high rates need to be investigated and addressed. This will be done in the analysis of the qualitative data.

To conclude, the findings from the current study indicates that the classification of postpartum depression as a unique and separate entity, that differs from depression occurring in women at other times and from depression as experienced by men, may be misleading. The term suggests a depression that develops following childbirth, and as was found by the current study, this is clearly not the case. The findings from the current study therefore suggest that the existence of postpartum depression as a distinct diagnosis or illness is problematic – a suggestion that has frequently been suggested in the literature (Aderibigbe et al., 1993; Chandran et al., 2002; Cooper et al., 1988; Cox et al., 1993; O'Hara et al., 1990; Patel et al., 2002).

## 6.7    Limitations of the current study

The greatest limitation of the current study is the number of research participants that were included in the study. A study that included a larger sample of participants would possibly be more representative of the population under investigation and provide more accurate and detailed findings as to the prevalence rate of depressive symptomatology during the prepartum and postpartum period amongst this population. However, the study also once again highlights how difficult it is to get reliable data in a longitudinal community study in South Africa.

A further limitation of this study was the use of the BDI as the measuring instrument.

Although the BDI has become one of the most frequently used general depression instruments in postpartum depression research (Beck & Gable, 2001b) and it has successfully been administered in South Africa on Xhosa speaking students (Lester & Akande, 1997) and on secondary school students residing in the Western Cape (Seedat et al., 2004), the validity of the BDI for use on low-income 'coloured' women has yet to be determined. A further problem regarding the use of the BDI, is its suitability for detecting depressive symptomatology amongst postpartum women due to due to the issue of symptomatic overlap between the postpartum period and depression. The assessment of general depressive symptomatology such as sleep disturbances, loss of interest in sex and decreased energy, during the postpartum period is complicated by the changing physiological symptoms of early motherhood (Beck & Gable, 2001b; O'Hara & Zekoski).

6.8      Suggestions for further research

Two areas of research that require attention in South Africa are currently being investigated by researchers from the WMHRP at the University of Stellenbosch, namely the validity and reliability of the BDI for use in low-income, rural communities in South Africa (A. Coertzen, personal communication, July 28, 2005) and research aimed at determining the prevalence rate of elevated levels of depressive symptomatology in a rural community in South Africa (B. Westwood, personal communication, July 21, 2005).

The current study question is (to the researcher's knowledge) the first study conducted in South Africa to assess the prevalence rates of depressive symptomatology during both the prepartum and postpartum period in women. Further research is needed to gain a deeper understanding of the changes in levels of depressive symptomatology amongst these women during the prepartum and postpartum period. Not only does this research need to be conducted amongst various cultural and ethnic groups in South Africa, but amongst the various groups in other countries as well.

Although the current study only made use of the quantitative data available on the participants, it is suggested that an analysis of the available qualitative data should also be done. As qualitative research enables researchers to gain an understanding of how women themselves make sense of their experiences, such a study will enable researchers to gain an understanding of how women themselves make sense of their situation and to explore the factors that contribute to the women's distress or resilience during this stage in their lives. In this way the relevant support strategies that are needed to assist women who are currently suffering from depressive symptomatology pre- or postpartum, as well as the intervention strategies that are required in order to prevent other women from experiencing depressive symptomatology during the prepartum and postpartum period, can be implemented. Furthermore, according to Smit (2002) gaining an understanding of women's own explanatory models will enable researchers to examine how women interact with healthcare systems when distressed and what they expect to gain from such an interaction. It will also prevent researchers from imposing pre-conceived assumptions and notions while professing to do otherwise. As is suggested by Smit (2002) this is of particular importance in South Africa where the assumptions of a white, middle-class culture has largely dominated method and inquiry. These assumptions have resulted in skewed representations and misperceptions about the 'other' in the past and needs to be addressed if mental healthcare intends to provide for the needs of all women during the postpartum period.

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Addendum A

# CONSENT FORM

Dear Participant

We would hereby like to invite you to participate in a research study that assesses how women experience pregnancy, birth and motherhood. We are interested in understanding the possible positive and negative aspects of this experience and which factors contribute to it. We hope that this research will contribute to more effective psychological support of pregnant women and mothers.

If you are willing to participate in this study, we would like to conduct four interviews with you. The interviews will last between one and two hours and will be tape-recorded. Female researchers, who are senior psychological students, will conduct the interviews. The interviews will be conducted at your home or the University of Stellenbosch, or any other place that is convenient for you, at a time that suites you.

During the interviews, questions will be asked regarding your experiences of pregnancy, birth and motherhood. We will ask questions as to the impact that these experiences have had on you, your relationships and your work. In other words we want to understand what it is like for you to be pregnant and what it is like for you to be a mother.

We trust that the interviews will be interesting and relevant to each person that takes part in this research study. Some of the questions that will be asked will be of a personal nature and could bring up unpleasant memories. Please note that the interviews can be ended at any time and that during the interviews you can refuse to answer certain questions. Participants have the right to withdraw their participation from the research study at any time. If you withdraw from the study you can request that any data that has been collected on you, including the tape recordings and transcriptions of the interviews, be destroyed, and it will be done.

To ensure the confidentiality of the research material, no names will be placed on the interview forms. Each participant shall be asked to choose a codename and a list will be compiled to indicate which participant corresponds with which codename. This list will be kept in a locked cupboard in an office at the Psychology Department. Only members of the research team will have access to the data, including the tapes and transcriptions, which will also be kept in the locked cupboard. All information will therefore be kept confidential.

Reports on the study, including any published work, will not include any real names. Descriptions of individuals will be disguised so that they are not recognizable to anybody else who reads the reports. As information collected on women's lives is so valuable, the tapes will be kept as long as the researcher continue to work in this field. As soon as the

researcher has completed this study, the tapes as well as the list that contains the names and codenames of the participants will be destroyed.

If you find that the questions that are asked during the interviews bring up painful or unpleasant memories, and you would like to speak to someone about your feelings, we have a list of service organizations you can contact. We can also assist you in receiving help if you would like psychological support.

If you are interested in participating in the research study, please read the following statement and sign below.

**I understand that participation in this study is completely voluntary and I am aware of the possible risks, advantages and inconveniences of my participation in the study. I understand that I can ask questions, can refuse to answer questions and that I can end an interview at any stage. I understand that if I have any questions or problems regarding this study, I can contact the head researcher, Dr Lou-Marie Kruger on 808-3460.**


_____                                                    _____
Signature of participant                                                              Date


_____                                                    _____
Signature of interviewer                                                              Date

Addendum A

# VORM VIR OORWOë TOESTEMMING

Beste Deelnemer

Hiermee wil ons u graag versoek om deel te neem aan 'n naarvorsingstudie wat ondersoek instel na hoe vroue swangerskap, geboorte en moederskap ervaar. Ons stel daarin belang om meer te verstaan oor moontlike positiewe en negatiewe aspekte van hierdie ervaring en watter faktore daartoe bydra. Ons hoop dat hierdie navorsing sal bydra tot meer effektiewe sielkundige ondersteuning van swanger vroue en moeders.

Indien u bereid is om aan hierdie studie deel te neem, sal ons graag vier onderhoude met u wil voer. Die onderhoud sal tussen een en twee ure duur. Die onderhoud sal op band opgeneem word. Vroulike narvorsers, wat senior studente in Sielkunde is, sal die onderhoud voer. Die onderhoud sal gevoer word of by u woonplek of by die Departement Sielkunde aan die Universiteit van Stellenbosch, of enige ander plek wat vir u geskik is, op 'n tyd wat u pas.

Tydens die onderhoud sal vrae gestel word oor u ervarings van swangerskap, geboorte en moederskap. Ons sal vrae vra oor watter impak hierdie ervarings op u en u verhoudings en werk gehad het. Ons wil met ander woorde verstaan hoe dit vir u is om verwagtend te wees en hoe dit vir u is om 'n moeder te wees.

Ons vertrou dat die onderhoud interessant en nuttig sal wees vir elkeen wat aan hierdie studie deelneem. Sommige van die vrae wat gestel word, sal egter hoogs persoonlik wees, en kan onaangename herinneringe oproep. U moet asseblief kennis neem dat die onderhoud te enige tyd kan beëindig, en dat u tydens die onderhoud kan weier om spesifieke vrae te beantwoord. Deelnemers het die vryheid om hulle deelname te enige tyd te beëindig. Indien u van die studie ontrek, kan u vra dat al die data wat oor u versamel is, dit sluit die bandopnames en die transkripsies van die bande in, vernietig word, en dit sal gedoen word.

Om die vertroulikheid van die narvorsingsmateriaal te verseker, sal geen name op die onderhoude of vorms geplaas word nie. Elke deelnemer sal gevra word om 'n kodenaam te kies, en daar sal 'n lys saamgestel word om aan te toon watter deelnemer met watter kodenaam ooreenstem. Die lys sal in 'n toegesluite kas in 'n kantoor by die Departement Sielkunde gebêre word. Slegs lede van die narvorsingspan sal toegang hê

tot enige van die data, wat die bande en die transkripsies insluit. Dit sal ook in die reeds genoemde toegsluite kas bewaar word. Alle inligting sal dus vertroulik gehou word.

Verslae oor die studie, dit sluit enige gepubliseerde werk in, sal nie enige ware name noem nie. Beskrywings van alle persone sal verbloem word sodat hulle nie herkenbaar sal wees vir enigiemand anders wat die studie lees nie. Daarom sal geen stuk inligting

wat deur die studie versamel is op enige manier met enige spesifieke persoon of familie kan verbind word nie. Aangesien sodanige inligting oor lewens van vroue so waardevol is, sal die bande bewaar word solank as wat die navorser navorsing op hierdie terrein voortsit. Sodra die navorser hierdie studie voltooi, sal die bande vernietig word, tesame met die lys wat die name en kodename bevat.

Indien u vind dat die vrae wat tydens die navorsingsonderhoud gestel word, pynlike of onaangename herinneringe oproep, en u sou met iemand oor u gevoelens wou praaat, het ons 'n lys hulpdienste wat u kan kontak. Ons kan u ook help om hulp te kry indien ons tydens die onderhoud agterkom dat u sielkundige ondersteuning verlang.

Indien u daarin belangstel om aan hierdie studie deel te neem, lees asseblief die volgende verklaring en teken hieronder.

**Ek begryp dat deelname aan hierdie studie vrywillig is, en is bewus van die moontlike risiko's, voordele, en ongerief verbonde aan my deelname. Ek aanvaar dat ek vrylik vrae kan vra, kan weier om vrae te beantwoord, en dat ek 'n sessie te eniger tyd kan beëindig. Ek begryp ook dat indien ek enige vrae of probleme het wat hierdie narvorsing betref, ek die hoofondersoeker, Dr. Lou-Marie Kruger by 808-3460, kan bel.**

_____                              _____
Handtekening van deelnemer                                      Datum

_____                          _____
Handtekening van ondershoudvoerder                          Datum

Addendum B

## DEMOGRAPHIC DETAILS

Respondent number: _____  Codename: _____

Language:_____  Age: _____

1. Household

Composition of Household:_____

_____

Relationship status (In relationship? Married? Live together? How long?):

_____

Children (gender and age): _____

 _____

2. Work

Work (type / fulltime/ part-time/ unemployed):

Self: _____

Partner (husband/boyfriend): _____

Parents: _____
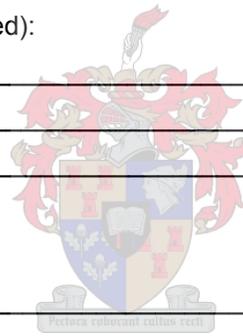
3. Income

Self: _____  Partner: _____  Household:_____

4. Literacy

Comfortably read and write: _____  Schooled to standard: _____

5.Religion

Religious affiliation:_____Actively involved:_____

6. Accommodation

Years in Kylemore: _____

No. Of rooms in house: _____  No of bedrooms in house: _____

With whom do you sleep in a bedroom? _____

Is there a bathroom in the house? _____ Is there electricity in the house? _____

Addendum B

**DEMOGRAFIESE BESONDERHEDE**

Respondentnommer: _____ Kodenaam: _____

Huistaal: _____ Ouderdom: _____

1. Huishouding

Samestelling van huishouding: _____

_____

Verhoudingstatus (In verhouding? Getroud? Bly saam? Hoe lank?):

_____

Kinders (geslag en ouderdomme): _____

_____

2. Werk

Werk (tipe / voltyds / deeltyds / unemployed):

Self: _____

Partner (man/boyfriend): _____

Ouers: _____

3. Inkomste

Self: _____ Partner: _____ Huishouding: _____

4. Geletterdheid

Gemaklik met lees en skryf: _____ Skool tot standerd: _____

5.Godsdiens

Godsdienstige affiliasie:_____Aktief betrokke:_____

6. Verblyf

Jare in Kylemore: _____

Aantal vertrekke in huis: _____ Aantal slaapkamers in huis: _____

Met wie slaap jy in 'n slaapkamer? _____

Is daar 'n badkamer in die huis? _____ Is daar elektriseteit in 'n huis? _____

Addendum C

# BECK QUESTIONNAIRE

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the past week, INCLUDING TODAY! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
   1. I feel sad.
   2. I am sad all the time and I can't snap out of it.
   3. I am so sad or unhappy that I can't stand it..

2. 0 I am not particularly discouraged about the future.
   1. I feel discouraged about the future.
   2. I feel I have nothing to look forward to.
   3. I feel that the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
   1. I feel I have failed more than the average person.
   2. As I look back on my life, all I can see is a lot of failures.
   3. I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
   1. I don't enjoy things the way I used to.
   2. I don't get real satisfaction out of anything anymore.
   3. I am dissatisfied or bored with everything.

5. 0 I don't feel particularly guilty.
   1. I feel guilty a good part of the time.
   2. I feel quite guilty most of the time.
   3. I feel guilty all of the time.

6. 0 I don't feel I am being punished.
   1. I feel I may be punished.
   2. I expect to be punished.
   3. I feel I am being punished.

7. 0 I don't feel disappointed in myself.
   1. I am disappointed in myself.
   2. I am disgusted in myself.

3.  I hate myself.

8.    0    I don't feel I am any worse than anybody else.
      1.   I am critical of myself for my weaknesses or mistakes.
      2.   I blame myself all the time for my faults.
      3.   I blame myself for everything bad that happens.

9.    0    I don't have any thoughts of killing myself.
      1.   I have thoughts of killing myself, but I would not carry them out.
      2.   I would like to kill myself.
      3.   I would kill myself if I had the chance.

10.   0    I don't cry any more than usual.
      1.   I cry more now than I used to.
      2.   I cry all the time now.
      3.   I used to be able to cry, but now I can't cry even though I want to.

11.   0    I am no more irritated now than I ever am.
      1.   I get annoyed or irritated more easily than I used to.
      2.   I feel irritated all the time now.
      3.   I don't get irritated at all by the things that used to irritate me.

12.   0    I have not lost interest in other people.
      1.   I am less interested in other people than I used to be.
      2.   I have lost most of my interest in other people.
      3.   I have lost all of my interest in other people.

13.   0    I make decisions about as well as I ever could.
      1.   I put off making decisions more than I used to.
      2.   I have greater difficulty in making decisions than before.
      3.   I can't make decisions at all anymore.

14.   0    I don't feel I look any worse than I used to.
      1.   I am worried that I am looking old or unattractive.
      2.   I feel that there are permanent changes in my appearance that make me look
           unattractive.
      3.   I believe I look ugly.

15.   0    I can work about as well as before.
      1.   It takes an extra effort to get started at doing something.
      2.   I have to push myself very hard to do anything.
      3.   I can't do any work at all.

16.   0    I sleep as well as usual.
      1.   I don't sleep as well as I used to.
      2.   I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
      3.   I wake up several hours earlier than I used to and cannot get back to sleep.

17. 0   I don't get more tired than usual.
    1.  I get tired more easily than I used to.
    2.  I get tired from doing almost anything.
    3.  I am too tired to do anything.

18. 0   My appetite is no worse than usual.
    1.  My appetite is not as good as it used to be.
    2.  My appetite is much worse now.
    3.  I have no appetite at all anymore.

19. 0   I haven't lost much weight, if any, lately.
    1.  I have lost more than 2½ kg (5 pounds).
    2.  I have lost more than 5 kg (10 pounds).
    3.  I have lost more than 7½ kg (15 pounds).

    (I am purposely trying to loose weight by eating less.   Yes ☐        No ☐

20. 0   I am no more worried about my health than usual.
    1.  I am worried about physical problems such as aches and pains or upset stomach or constipation.
    2.  I am very worried about physical problems and it's hard to think of much else.
    3.  I am so worried about my physical problems that I cannot think about anything else.

21. 0   I have not noticed any recent change in my interest in sex.
    1.  I am less interested in sex than I used to be.
    2.  I am much less interested in sex now.
    3.  I have lost interest in sex completely.

Addendum C

# BECK VRAELYS

Op hierdie vraelys is groepe stellings. Lees elke groep stellings noukeurig deur. Kies dan uit elke groep die een stelling wat die beste beskryf hoe jy die afgelope week, INSLUITENDE VANDAG, gevoel het. Trek 'n sirkel om die nommer van die stelling wat jy kies. As meer as een stelling in die groep van toepassing is, omsirkel elkeen. Maak seker dat jy alle stellings in die groep lees voordat jy jou keuse maak.

1.  0  Ek voel nie swaarmoedig of teneergedruk nie.
    1  Ek voel swaarmoedig of teneergedruk.
    2  Ek is gedurig swaarmoedig of teneergedruk en kan die gevoel nie afskud nie.
    3  Ek is so swaarmoedig of ongelukkig dat ek dit nie kan verduur nie.

2.  0  Ek is nie besonder pessimisties of ontmoedig oor die toekoms nie.
    1.  Ek voel ontmoedig oor die toekoms.
    2.  Ek voel ek het niks om na uit te sien nie.
    3.  Ek voel die toekoms is hopeloos en dat dinge nie kan verbeter nie.

3.  0  Ek voel nie soos 'n mislukking nie.
    1.  Ek voel ek het meer as die gewone mens misluk.
    2.  As ek op my lewe terugkyk, sien ek net mislukkings.
    3.  Ek voel ek is 'n algehele mislukking as mens.

4.  0  Ek kry soveel bevrediging soos voorheen uit dinge.
    1.  Ek geniet dinge nie soos gewoonlik nie.
    2.  Ek kry nie werklik bevrediging met enigiets meer nie
    3.  Ek is ontevrede of verveeld met alles.

5.  0  Ek voel nie besonder skuldig nie.
    1.  Ek voel 'n groot deel van die tyd skuldig.
    2.  Ek voel die meeste van die tyd taamlik skuldig.
    3.  Ek voel altyd skuldig.

6.  0  Ek voel nie ek word gestraf nie.
    1.  Ek voel ek mag gestraf word.
    2.  Ek verwag om gestraf te word.
    3.  Ek voel ek word gestraf.

7.  0  Ek voel nie terleurgesteld in myself nie.
    1.  Ek is terleurgesteld in myself.
    2.  Ek het 'n teensin in myself.
    3.  Ek haat myself.

8.  0  Ek voel nie ek is slegter as enigiemand anders nie.
    1. Ek is krities teenoor myself oor my swakhede en foute.
    2. Ek blameer myself altyd vir my foute.
    3. Ek blameer myself vir alle slegte dinge wat gebeur.

9.  0  Ek het geen gedagtes aan selfmoord nie.
    1. Ek dink aan selfmoord, maar sal dit nie uitvoer nie.
    2. Ek wil myself graag om die lewe bring.
    3. Ek sal selfmoord pleeg as ek die kans kry.

10. 0  Ek huil nie meer as gewoonlik nie.
    1. Ek huil nou meer as gewoonlik.
    2. Ek huil nou gedurig.
    3. Ek kon vroeër huil, maar nou kan ek nie al wil ek ook.

11. 0  Ek is nie nou meer geïrriteerd as gewoonlik nie.
    1. Ek word makliker ergelik of geïrriteerd as voorheen.
    2. Ek voel nou gedurig geïrriteerd.
    3. Ek word glad nie geïrriteerd deur dinge wat my gewoonlik geïrriteer het nie.

12. 0  Ek het nie belangstelling in ander mense verloor nie.
    1. Ek stel minder belang in ander mense as voorheen.
    2. Ek het die meeste van my belangstelling in ander mense verloor.
    3. Ek het al my belangstelling in ander mense verloor.

13. 0  Ek neem besluite net so goed soos gewoonlik.
    1. Ek stel meer uit om besluite te neem as voorheen.
    2. Ek neem besluite moeiliker as voorheen.
    3. Ek kan glad nie meer besluite neem nie.

14. 0  Ek voel nie dat ek slegter as gewoonlik lyk nie.
    1. Ek is bekommerd daaroor dat ek oud of onaantreklik lyk.
    2. Ek voel daar is blywende veranderinge in my voorkoms wat my onaantreklik laat lyk.
    3. Ek glo ek lyk lelik.

15. 0  Ek kan byna net so goed soos tevore werk
    1. Dit vereis meer inspanning om te begin om iets te doen.
    2. Ek moet myself forseer om enigiets te doen.
    3. Ek kan geen werk doen nie.

16. 0  Ek slaap so goed soos gewoonlik.
    1. Ek slaap nie so goed soos gewoonlik nie.
    2. Ek word 1-2 ure vroeër as gewoonlik wakker en sukkel om weer aan die slaap te raak.
    3. Ek word etlike ure vroeër as gewoonlik wakker en kan nie weer slaap nie.

17. 0 Ek word nie moeër as gewoonlik nie.
    1. Ek word makliker moeg as gewoonlik.
    2. Ek word moeg van omtrent enigiets wat ek doen.
    3. Ek is te moeg om enigiets te doen.

18. 0 My eetlus is nie slegter as gewoonlik nie.
    1. My eetlus is nie so goed as wat dit was nie.
    2. My eetlus is nou baie slegter.
    3. Ek het glad geen eetlus meer nie.

19. 0 Ek het nie onlangs veel, indien enige, gewig verloor nie.
    1. Ek het meer as 2½ kg (5 pond) verloor.
    2. Ek het meer as 5 kg (10 pond) verloor.
    3. Ek het meer as 7½ kg (15 pond) verloor.

    (Ek probeer doelbewus gewig verloor deur minder te eet. ☐ Ja        ☐ e

20. 0 Ek is nie meer as gewoonlik bekommerd oor my gesondheid nie.
    1. Ek is bekommerd oor liggaamlike probleme soos pyne of 'n omgekrapte maag of hardlywigheid.
    2. Ek is baie bekommerd oor liggaamlike probleme en dit is moeilik om aan iets anders te dink.
    3. Ek is so bekommerd oor my liggaamlike probleme dat ek aan niks anders kan dink nie.

21. 0 Ek het nie onlangs enige verandering in my belangstelling in seks opgemerk nie.
    1. Ek stel minder in seks belang as gewoonlik.
    2. Ek stel nou baie minder in seks belang.
    3. Ek het heeltemal belangstelling in seks verloor.