

Comparing prevalence rates of depressive symptoms in postpartum and nonpostpartum  
samples in a low-income community

Bridget Anne Westwood



Thesis presented in fulfillment of the requirements for the degree Master of Arts (Psychology)  
at the University of Stellenbosch

Supervisor: Prof L.M. Kruger

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## DECLARATION

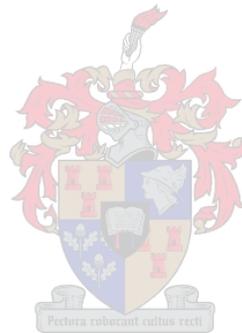
I, the undersigned hereby declare that the work contained in this thesis is my own original work, and has not previously, in its entirety, or in part, been submitted at any other university for a degree.

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BA Westwood

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Date



## ABSTRACT

Within the medical models, postpartum depression is constructed as a mental illness, that women are predisposed to during the postpartum period because of the biological and physiological changes that occur before, during and after childbirth.

The present study aimed to determine whether childbirth increases the risk of developing depressive symptomatology in the first six months after delivery. The objective of the study was to examine the concept of postpartum depression by analyzing the difference in depressive symptom rates between 41 postpartum women and 254 male and female (who had not given birth in the previous six months) community members residing in a semi-rural area of South Africa. This objective was reached by using a cross-sectional survey research design. The Beck Depression Inventory (BDI) was used to elicit the quantitative data. Several independent t-tests were conducted to determine the following (i) whether low-income women three months postpartum had higher BDI scores in comparison to a combined gendered community sample, and (ii) whether low-income women six months postpartum had higher BDI scores in comparison to a combined gendered community sample. The results indicated that the postpartum women did not experience elevated rates of depressive symptoms at three months or at six months in comparison to the community sample. Men in the 2003 community sample displayed significantly higher levels of depressive symptoms than the six-month postpartum women. These findings do not support the assumption that childbirth predisposes women to psychological vulnerability during the postpartum period.

## OPSOMMING

Binne die raamwerk van mediese modelle, word nageboortelike depressie verklaar as 'n geestesiekte waarvoor vroue vatbaar is as gevolg die biologiese en fisiologiese veranderinge wat plaasvind voor, gedurende en na kindergeboorte.

Die huidige studie is daarop gemik om te bepaal of kindergeboorte die risiko verhoog om depressiewe simptomatologie in die eerste ses maande na die bevalling te ontwikkel. Die doelwit van die studie was om die konsep van nageboortelike depressie te ondersoek deur die verskil in die vlakke van depressie simptome te analiseer van 41 postpartum vroue en 254 manlike en vroulike (wie nie in die voorafgaande ses maande geboorte geskenk het nie) gemeenskapslede wat in die landelike omgewing van Suid-Afrika woonagtig is.

Die doelwit is bereik deur 'n dwarsprofiel opname navorsings ontwerp te gebruik. Die Beck Depressie Inventaris is gebruik om die kwantitatiewe data uit te trek. Verskeie onafhanklike t-toetse is uitgevoer om te bepaal; (i) of lae-inkomste vroue, drie maande postpartum, hoër BDI tellings gehad het in vergelyking met 'n gemengde geslag gemeenskap voorbeeld, en (ii) of lae-inkomste vroue, ses maande postpartum, hoër BDI tellings gehad het in vergelyking met 'n gemengde geslag gemeenskap voorbeeld. Die resultate het aangedui dat die postpartum vroue nie verhoogde vlakke van depressie simptome op drie of ses maande ervaar het in vergelyking met die gemeenskap voorbeeld nie. Mans in die 2003 gemeenskap voorbeeld het beduidende hoër vlakke van depressie simptome as die ses-maande nageboorte vroue getoon. Hierdie bevindinge ondersteun nie die aanname dat kindergeboorte vroue vatbaar maak vir psigologiese kwesbaarheid gedurende die nageboortelike periode nie.

## ACKNOWLEDGEMENTS

This masters study has led me on a exciting road of discovery both academically and personally. The past two years have been invaluable in laying the foundations for my future career in psychology. I would personally like to acknowledge the contribution of the following individuals to this research thesis:

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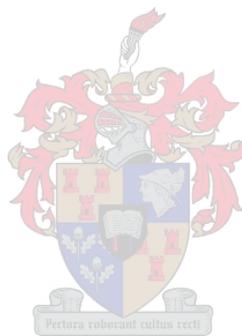
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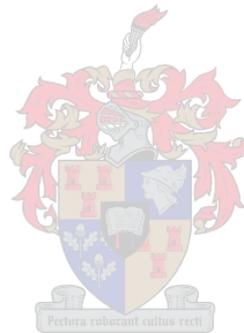


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## CHAPTER ONE: INTRODUCTION AND MOTIVATION

### 1.1 Introduction

Depressive disorders are considered to constitute major health problems: this is because they occur throughout life, cause considerable suffering and often signal the beginning of long-term problems. It is estimated that world-wide more than 300 million people suffer from depression (major depression, minor depression or depressive symptoms) at present and there are predictions that these figures will continue to increase dramatically over the next two decades (Pope, Watts, Evans, McDonald & Henderson, 2000). By the year 2020 depression will be the single most important cause of disability in the developing world (World Health Organisation, 1992). Thus, it is imperative that public health workers strive to alleviate the effects of depressive illness.

Women are reported to be twice as likely as men to experience depression and depressive symptomatology (Epperson, 1999). It is proposed that women are at a higher risk of developing depressive disorders due to their biological and genetic make-up (Kendler, Kessler, Neale, Heath & Eaves, 1993; Kumar & Robson, 1984; Paykel, 1991; Sonnenberg, Beekman, Deeg & van Tilburg, 2000; Stordal, Bjartveit, Kruger, Dahl, Kruger, Mykletun & Dahl, 2001; Unger & Crawford, 1996; Weissman & Klerman, 1977). Interest in the possible relationships between women's biology and affective states derives from the assumption that clinical depression and depressive symptoms tends to occur in association with events in the reproductive cycle, including the postpartum period (Paykel, 1991).

The belief that there exists a particular set of mental illness symptoms brought on by childbirth can be traced back in time through ancient documents (Najman, Anderson, Bor, O'Callaghan & Williams, 2000). Yet, as with other depressive mood disorders, it was only during the 18th century that physicians and psychiatrists began to record, document and

classify mental illness occurring in the puerperium (O'Hara, Zekoski, Phillipps & Wright, 1990).

In a review of the historical literature on puerperal mental illness, Brockington (1996) demonstrates that the older classifications of puerperal psychiatric complications were, "crude and focused largely on finding an organic aetiology" (Smit, 2002, p. 15). It appears that many cases of mental illness were noted, not to provide an understanding of mental illness associated with childbirth, but for their severity and their novelty (Smit, 2002).

In the 19th century, puerperal mental illness seemed a clear-cut entity that could be easily defined, was homogenous in nature and promised unitary cause (Brockington, 1996). Only the most severe psychiatric cases received treatment, a majority of which appear to be connected with painful and traumatic childbirth, usually resulting from infections and complicated obstetrics (Brockington, 1996). Milder non-psychotic presentations of depressive illness were either ignored or presented as lesser versions of 'puerperal psychosis' (Smit, 2002). During this period in history the terms maternity blues, puerperal melancholia and postpartum depression were used interchangeably to refer to non-psychotic depressive illness occurring in the puerperium. However, many of these early reports on postpartum depression appear more akin to severe bipolar or depression with psychotic features, rather than milder non-psychotic depression (Smit, 2002).

The lack of definition and clarity regarding postpartum depression was obviously a concern for researchers investigating puerperal mood disorders. In 1950 there was a renewed interest in researching milder non-psychotic disorders that fall below a clinical threshold (Smit, 2002). These included psychological complications of, "abortion, perinatal death and adoption, 'maternity blues', and mild forms of 'puerperal melancholia'" (Brockington, 1996, p. 169). In the next few years, numerous researchers began conducting studies on a large scale in order to provide the first data regarding prevalence and correlates

of postpartum depression (Brockington, 1996; Dalton, 1971; Gordon & Gordon, 1960; O'Hara & Zekoski, 1988).

Over the last three decades the amount of literature on puerperal mood disorders has risen dramatically. To be precise, from the period 1977 to 2002, 562 studies were published on postpartum depression alone (Smit, 2002), the vast majority conducted from within a medical perspective.

Despite the vast amount of research produced there is little agreement in the literature on almost every aspect pertaining to the syndrome termed 'postpartum depression' (Brockington, 1996). The most critical unresolved questions concern the similarities and differences between postpartum depression and depression (major, minor or depressive symptoms) occurring at other times in the life cycle (Smit, 2002).

## 1.2 Motivation for conducting present research study

Despite the assumption that women's biology predisposes her to develop depressive symptoms in the months following childbirth, no scientific proof has been found linking biological, gynaecological or obstetrical factors with postpartum depression (Lee, 1997; Nicolson, 1998; Nonacs & Cohen, 1998; Whiffen, 1992). However, the neuroendocrine alterations that occur during pregnancy and after childbirth still remain the focus of much of contemporary postpartum depression research.

Postpartum depression is claimed to affect 5% to 20% of women in developed countries (Lee, Yip, Chan, Tsui, Wong & Chung, 2003; Nicolson, 1998; Susman, 1996; Trotter, Wolman, Hofmeyr, Nikodem & Turton, 1992). Such high depression rates suggest depression during this period is common and, thus, requires exclusive research and clinical attention (Trotter et al., 1992). However, a substantial amount of evidence produced has led to claims that rates of depression in the postpartum period are no higher than that of women not in the postpartum period. In order to show that postpartum depression is specific to

childbirth, studies need to demonstrate that an increase of depressive symptoms occurs in the period following childbirth and that these symptoms are directly related to childbirth (Smit, 2002).

### 1.2.1 Burden of depression in the postpartum period

The effect of depression and depressive symptomatology on family life, and on the emotional atmosphere in which children are reared, is one of the main concerns of professionals working in the field of postpartum disorders (Adams, 2003; Brockington, 1996).

Postpartum depression places a woman at increased risk of future depressive episodes and their children at risk of developing emotional, cognitive and social problems (Brockington, 1996; Cicchetti, Rogosch, Toth & Spagnola, 1997; Hendrick, 2003; Righetti-Veltema, Conne-Perreard, Bousquet & Manzano, 2002). Maternal depression is suggested to result in long lasting cognitive and emotional shortcomings, developmental problems and negative bonding between mother and child (Templeton, Velleman, Persuad & Milner, 2003). In the long term, poor communication between mother and child may affect the acquisition of speech, language and social skills (Cicchetti et al., 1997; Righetti-Veltema et al., 2002).

The traditional image of childbirth is associated with positive emotions of joy and fulfilment. For mothers with depression or depressive symptoms, the contrast between this traditional picture and what they are experiencing can result in feelings of guilt and of failure, especially if they experience any negative emotions towards the infant or themselves (Righetti-Veltema et al., 2002).

Many cases of postpartum depression are missed because of the over reliance of health professionals on biological explanations (Pope et al., 2000). Emotional complications following the birth are often considered as a normal part of the mothering experience (Brockington, 1996), and thus, when depression or depressive symptoms are present, they may not be recognised as an illness (Nicolson, 1998).

### 1.2.2 Research on postpartum depression in South Africa

There is a need for research to be conducted in low-income communities in South Africa where the assumptions of middle-class culture have largely dominated research method and inquiry (Smit, 2002). According to Smit, this has produced skewed representations and misperceptions about low-income communities and needs to be addressed if mental healthcare hopes to provide in the needs of all women during the postpartum period.

In South Africa there have been only a few published studies on postpartum depression. Spangenberg and Pieterse (1991) used a white, middle-class sample, Lawrie, Hofmeyr, de Jager and Berk (1998) conducted a longitudinal study on women attending a state administered hospital which catered for a low-income socially disadvantaged urban community, and Cooper, Tomlinson, Swartz, Woolgar, Murray and Molteno (1999) focused on African mothers in a peri-urban setting (.

Due to such few studies focusing on postpartum depression very little is known about the majority of South African mothers' (mostly black and poor populations) prenatal and postpartum experiences. Thus, there is a need for research to be conducted in this area.

### 1.3 Research aims

The postpartum period is identified by medical and psychological researchers (Kessler & Neighbors, 1994; Stowe & Nemeroff, 1995; Trotter et al., 1992) as a vulnerable period for women to develop mood disorders. At present no evidence has been produced in support of the assumption that depression or depressive symptomatology is more common after childbirth than at other times in the life cycle (Boath & Henshaw, 2001; Najman et al., 2000).

There are at least two possible ways (Najman et al., 2000; Smit, 2002) to determine whether the postpartum period is associated with an elevated risk of depression and depressive symptoms. The first strategy, proposed by Najman et al. (2000), is to conduct a

cross-sectional study comparing diagnostic data obtained from childbearing women with data obtained in a sample of non-childbearing women and men from the same community. The second strategy, as suggested by Smit (2002), is to conduct a longitudinal study that tracks the presence of depression and depressive symptoms during the entire duration of pregnancy and the postpartum period, in order to ascertain the incidence (the number of new cases) of depression and depressive symptoms occurring postpartum (see also Storkey, 2005). The purpose of the present study is to utilise the first strategy (a cross-sectional study) to determine whether the postpartum period is associated with an elevated risk of depression and depressive symptoms.

The present study was prompted by the need for research to be conducted in low-income communities and the importance of generating empirical cross-sectional data regarding the assumption that there is an elevated risk for developing depression after childbirth (Najman et al., 2000). To date no studies have been conducted in a Southern African country that has included a control group consisting of nonpostpartum male and female participants.

The present study forms part of a larger research project co-ordinated by the Women's Mental Health Research Project (WMHRP) situated in the Psychology Department of the University of Stellenbosch. This project, entitled "Maternal mental health: The distress and resilience of low-income black mothers of the Western Cape" focuses on how low-income women in a rural community in the Western Cape, South Africa, experience pregnancy, birth and early motherhood.

The present study addresses the question of whether rates of depressive symptoms during the postpartum period differ from rates of depression in men and women who are not in the postpartum period. As such, the aim of the present study is to establish whether low-income women in a rural community in South Africa experience an increase in depressive

symptomatology during the first six months postpartum as compared to the existence of depressive symptomatology experienced by men and nonpostpartum women in the community.

#### 1.4 Operationalisation of research aims

In order to accomplish the objectives of the present study, the level of depressive symptoms experienced by childbearing women (as measured by the Beck Depression Inventory [BDI]) (Beck, Ward, Mendelson, Mock & Erbaugh, 1961) are observed at two assessments (three and six months postpartum). In addition, two male samples, two nonpostpartum female samples and two "mixed" samples (males and females) Please change this throughout from the same low-income community are assessed using the same measures of depression symptoms. The community sample is required to be over the age of 16 years and to not be pregnant nor to have had a child in the last two years.

Assuming women are at an increased risk for depression due to biological and psychological factors related to childbirth, the present study hypothesizes :

- The level of depressive symptoms, as measured by the BDI (Beck et al., 1961), experienced by women three months postpartum will be significantly elevated in comparison to the level of depressive symptoms experienced by the 2002 male community sample, the 2002 nonpostpartum female community sample and the 2002 "mixed" (males and females) community sample.
- The level of depressive symptoms, as measured by the BDI (Beck et al., 1961), experienced by women six months postpartum will be significantly elevated in comparison to the level of depressive symptoms experienced by the 2002 male community sample, the 2002 nonpostpartum female community sample and the 2002 "mixed" (males and females) community sample.

- The level of depressive symptoms, as measured by the BDI (Beck et al., 1961), experienced by women three months postpartum will be significantly elevated in comparison to the level of depressive symptoms experienced by the 2003 male community sample, the 2003 nonpostpartum female community sample and the 2003 "mixed" (males and females) community sample.
- The level of depressive symptoms, as measured by the BDI (Beck et al., 1961), experienced by women six months postpartum will be significantly elevated in comparison to the level of depressive symptoms experienced by the 2003 male community sample, the 2003 nonpostpartum female community sample and the 2003 "mixed" (males and females) community sample.

### 1.5 Outline of thesis

Chapter two contains an overview of the major theories concerned with postpartum depression: namely the medical model, the social science model, and the social constructionist model. Included in the overview is an examination of the general assumptions informing the relevant theories, highlighting the understandings of depression and postpartum depression within these theories.

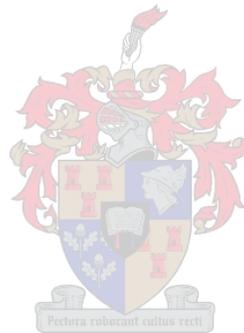
The literature survey in Chapter three contains a review of the medical literature on depression and postpartum depression. The chapter is concluded with a discussion of the main aspects of these two disorders and the relevance.

Chapter four constitutes a detailed discussion of the methodology of the present study. As such, it contains a brief overview of the research aims and objectives mentioned in Chapter one, the research design and methodological considerations that were undertaken to achieve these research aims and objectives.

The results of the quantitative study are presented in Chapter five, with a detailed discussion of these results following in Chapter six. The discussion includes an exploration of

the main trends and patterns in the data, with reference to the research objectives. The discussion is concluded with an interpretation of the main findings.

In the concluding chapter previous chapters are summarised and the main findings are highlighted. The larger significance of the results is stated and shortcomings of the study are discussed. The thesis is concluded with recommendations regarding future research and interventions.



## CHAPTER TWO: THREE THEORETICAL APPROACHES

Three theoretical models can be considered to be most prominent in postpartum depression literature: the medical model, the social science model and the social constructionist model (Mauthner, 1998; Nicolson, 2000; Stoppard, 1998). Each of these three models will be reviewed by first discussing the general assumptions and then its application to the concepts of depression and postpartum depression.

### 2.1 Medical model

#### 2.1.1 General assumptions: Positivist paradigm

Research within the medical model is embedded in a positivist framework. The basic aim of positivist research in psychiatry is the quantitative measurement of a disorder or disease assumed to be an observable and discrete phenomenon (Mauthner, 1998; Nicolson, 1998).

When researching within a positivist epistemology it is assumed that the phenomenon under observation can be objectively measured and identified (Nicolson, 2000). Using statistical analysis to examine data collected by quantitative methods enables positivist researchers to obtain 'value-free' findings with minimal bias and subjectivity (Cox, Murray & Chapman, 1993; Mauthner, 1998). Underlying these methods of data collection and examination is an epistemology that emphasises replicability, generalisability and prediction (Mauthner, 1998).

Positivist epistemology and quantitative methodology enables the medical researcher to strive for a biomedical diagnosis based on specific set of signs and symptoms, which are markers of an underlying disorder or disease. A sign is defined as, "anything that can be observed about a patient which may be indicative of disease" (Swartz, 1998, p. 53), whereas a symptom is what the patient experiences and reports to medical professionals (Swartz,

1998). The inherent assumption in a medical diagnosis is that specific constellations of signs and symptoms are unique to a specific disease or disorder and other configurations of signs and symptoms are indicative of another disease or disorder. Thus, the researcher or clinician trained within a positivist epistemology searches for objective clearly measurable phenomena that have intrinsically measurable signs and symptoms (Swartz, 1998).

The traditional medical psychiatric approach to health and illness takes on the perspective of 'normality as health' (Sadock & Sadock, 2003). Basically, normality is equated with health and health is viewed as a universal phenomenon. Thus, behaviour is assumed to be within normal limits when no manifest psychopathology is present (Sadock & Sadock, 2003). In other words, a lack of signs and symptoms (indicating a form of pathology) indicates health.

### 2.1.2 Implications for cross-cultural psychology

A consequence of the medical model, grounded in a positivist framework, is the belief that western psychiatry has discovered the core pathological disorders and that these disorders are universal. The same disease or disorder can thus be perceived as always having the same cause, clinical picture and treatment in any society or culture within which it occurs (Lochner, 1999). Western diagnostic systems (for example the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) (American Psychiatric Association [APA], 2000) are based on a universalist approach.

Maintaining a universalist approach in understanding mental illness cross-culturally enables researchers to make the world knowable (Swartz, 1998). The use of a single diagnostic system based on the assumption that the disorder or disease is the same across cultures permits the researcher to ask and answer questions about how prevalent the disorder or disease is in different countries and cultures.

### 2.1.3 Understanding of depression

Contemporary medical research on depression is informed by the definition of depressive disorders codified in diagnostic systems such as the DSM-IV-TR (APA, 2000). Psychiatric theories of depression focus on the depressed person's body. Depression is viewed as a biological disorder, with an emphasis on physiological and chemical processes involving hormones and neurotransmitters as causal factors (Stoppard, 1998). Biological theories include the amine hypothesis and the neuroendocrinological hypothesis. The amine hypothesis proposes mood disorders are associated with heterogeneous deregulations of the biogenic amines – of which, norepinephrine and serotonin are the two neurotransmitters most implicated in the pathophysiology of mood disorders. This hypothesis proposes that depression is caused by insufficient amounts of these two neurotransmitters, which lead to a decrease in activity in the limbic system (Brockington, 1996; O'Hara, 1997; Smit, 2002). The neuroendocrinological hypothesis suggests that hormonal disturbances in the hypothalamus lead to depression (O'Hara, 1997). The hypothalamus is central to the regulation of the neuroendocrine axes and receives many neuronal inputs that use biogenic amine neurotransmitters. The major neuroendocrine axes of interest in mood disorders are the adrenal, thyroid and growth hormone axes (Sadock & Sadock, 2003; O'Hara, 1997).

### 2.1.4 Understanding of postpartum depression

Researchers who view normality as health have conducted the bulk of research on postpartum depression. Such research typically is based on the belief that a 'normal' response to the puerperal period is simply the lack of a postpartum depression or other disorder. In other words, normal postpartum is the absence of pathology (O'Hara & Zekoski, 1988).

Medical research conceptualises postpartum depression as a medical condition, a disease or illness (O'Hara & Zekoski, 1988). The focus of medical research is on the

symptoms and etiology of postpartum depression in the attempt to predict, prevent and treat the illness (Smit, 2002). Within this research lies the assumption that all forms of depression and anxiety occurring in close proximity to childbirth are hormonally related. The event of childbirth involves significant physiological changes both prepartum and postpartum (Lee, 1997; Smit, 2002). Assuming that depression occurring in close proximity to childbirth occurs because of the hormonal changes related to the event, implies that pregnancy and childbearing presents a time in which women are vulnerable to develop mood disorders.

Centred on this assumption a scientific model concerning puerperal depression has been proposed within the medical literature (Nicolson, 1998). This model has also been called the 'implicit model' as medical studies have yet to provide scientific evidence directly linking the etiology of postpartum depression to the event of childbirth (Brockington, 1996; Nicolson, 1998, 2000; O'Hara & Zekoski, 1988; Pope et al., 2000).

The implicit model hypothesises that postpartum depression is an homogenous condition with a particular symptom profile and severity, has an onset between one and three months postpartum and generally lasts from three to six months (Nicolson, 2000).

The construct of postpartum depression as proposed from the implicit model suggests:

- there is a causal association between childbirth and depression in the postpartum period (Green, 1998);
- postpartum depression is a clinical condition that develops in the puerperium and is distinct from both depression occurring at other times in a woman's life and from depression experienced by men (Mauthner, 1998);
- there is a common understanding of postpartum depression as an homogenous entity, thus it can be observed, measured and treated as if it has a single cause (Mauthner, 1998);

- due to their biology, women are at an increased risk of developing depressive illnesses prepartum and postpartum (Nicolson, 2000).

To date, no link has been found connecting hormonal and physiological changes occurring at childbirth with the development of depression in the postpartum period (Mauthner, 1998). Nor has there been any consistency in results regarding time of onset, duration, or symptom pattern (Brockington, 1996; Smit, 2002), and postpartum depression is still to be included into the DSM-IV-TR as a distinct separate disorder (Najman et al., 2000).

## 2.2 Social science model

### 2.2.1 General assumptions: Positivist paradigm

The social science model broadens the scope of medical research by exploring the social variables involved in pathology (Reading & Reynolds, 2001). However, as this research is informed by a positivist epistemology, the social sciences share some of the same assumptions of pathology as the medical model. For example the social sciences also assume that a disorder or disease, an observable and discrete entity, under observation can be objectively measured and identified. The disorder or disease is identifiable according to specific and unique constellations of signs and symptoms and occurs universally. Thus, it is assumed that a specific cause is related to a psychiatric illness, and that this relationship between cause and effect can be observed (O'Hara & Swain, 1996).

Whereas the medical model views biological and hormonal factors as the cause of psychopathology, the social sciences theorise that stressful circumstances give rise to pathology (O'Hara & Swain, 1996). In both approaches the individual is viewed as a victim, either due to hormonal and biological factors or from social stressors, as psychopathology is understood primarily as the result of deficiencies or circumstances pertaining to the individual (Nicolson, 2000).

The problem with psychological theories based on positivist assumptions is that they fail to identify how the illness experience varies between individuals and little value is accorded to individuals' perceptions, objectives and accounts in quantitative research (Lee, 1997).

### 2.2.2 Understanding of depression

Social science theorists posit the presence of various psychological characteristics, such as cognitive vulnerabilities, as causal factors underlying an individual's susceptibility to depression, whilst acknowledging the role the social environment plays in the development of depression (Stoppard, 1998). Stressful environmental conditions have been found to increase the chances of developing depression (Goldstein, 1994).

The social sciences focus on depression as a reaction to stress and the lack of social support (Lee, 1997; Stoppard, 1998). In diathesis-stress theories stress is conceptualised in terms of events that signify loss or some form of disappointment for the individual with respect to key life roles or goals (Stoppard, 1998). A diathesis-stress conceptualisation in the etiology of depression is implicit in most of contemporary psychological models of depression (O'Hara, Neunaber & Zekoski, 1984). In terms of the association between depression and social support, people with less social support are considered to be more likely to be depressed than those with adequate social support (Reading & Reynolds, 2001). Conversely, adequate social support is often an antidote to depression. Social support represents a coping resource, based in the quality and the quantity of a person's social relationships that may aid in protecting them against the presumed depressogenic effects of stress (Stoppard, 1998). Social scientists believe that understanding and treating depression involves analysing the social context of the depressed person's behaviour.

### 2.2.3 Understanding of postpartum depression

Social science researchers criticise the medical model for failing to examine the interconnectedness of women's experiences of depression and various biological, psychological and interpersonal factors (Reading & Reynolds, 2001). In awareness of this criticism social science researchers have broadened the scope of postpartum depression research to include variables from the mother's social context whilst maintaining the medical assumption that certain factors precipitate depression and depressive symptoms in women who are already psychologically vulnerable (Reading & Reynolds, 2001).

Social scientists take into account the context of early motherhood and the experience of birth in their theoretical positions. Social science theories of depression usually involve a relationship between a specific stressor (for example the birth of a child) and the development of psychiatric illness. Social scientists (Hopkins, Campbell & Marcus, 1989) report that research on postpartum depression provides a unique chance to test this relationship, as childbirth is viewed as a stressful event in its own right and the additional stressors of motherhood may be found to contribute towards depression during this period.

The essence of these social science theories on postpartum depression is the proposal the postpartum period places women at risk to the development of psychological disorders because of the inherent stress linked to childbirth and possible additional stressors occurring with being a new parent (Lee, 1997).

Emphasis is placed on the mother's social context within which the disorder develops and the researcher's task is to determine which factors (or interaction of factors) place women at risk for depression in the postpartum period (Reading & Reynolds, 2001). Possible influencing factors are placed into three categories: those indicating poor quality of unsupportive relationships, those related to pregnancy, life events and acute stressors, and those associated with socio-economic disadvantage and financial hardship (Reading &

Reynolds, 2001). The most consistent findings are the links between postpartum depression and intimate relationship difficulties, previous psychiatric history and the occurrence of stressful life events other than childbirth (Lee, 1997). Stressors documented include unsatisfactory marriages, loneliness and lack of adult company, role changes that may accompany the transition to motherhood (such as leaving employment and running a home) and lack of social support (Lee, 1997).

Although the social science position embraces a more liberal view of the individual in context by conceptualising her as a potential victim of social stress, it fails to identify how the experience of depression varies between individuals (Nicolson, 1998). Social science theories are also problematic in suggesting that depression postpartum is a normal response to childbirth and motherhood. Thus, the medical view that pregnancy, childbirth and motherhood are inherently pathological is maintained (Mauthner, 1998).

### 2.3 Social constructionist model

#### 2.3.1 General assumptions: Constructivist paradigm

Constructivism preceded social constructionism. Both approaches share some basic assumptions and are sometimes confused with each other, or the terms are used interchangeably. Constructivists regard the attribution of meaning as solely an internal, subjective activity (Hoffman, 1993). Thus, constructivism asserts that knowledge is dependent on the observer and not the observed. Therefore, all understanding is perceived as subjective. This means that what a person sees is not really the external object, but rather what that person's mind makes of the object. Reality is then not based on the person's perception of the object, but rather on the person's previous experience of the observation (Hoffman, 1993). Due to this subjectivity in meaning attribution, constructivism suggests people live in a world of their own private experiences (Gergen, 2002) and any one person's interpretation is as true as another person's interpretation. An observer behaves in

accordance with his or her reality and looks for consensus for their reality. If there is a consensus, a domain of consensus in language exists between observers not because the idea of agreement has an objective existence independent of a context (Nagar , 2002). However, constructivists failed to account for the effects of a dominant social reality that influences the creation of meaning (Nagar, 2002).

A development within constructivism is social constructionism (Rapmund, 1996). Social constructionism highlights the social, historical and collective nature of human consciousness. Social constructionism is comprised of a number of different overlapping perspectives, which inform approaches to literary criticism, anthropology, sociology, political studies and cultural studies. Due to the different perspectives, social constructionism is defined in terms of its resilience to the institutionalised dominance of empiricism as the guiding philosophy of the human sciences (Mattee, 2001).

Social constructionism is, “the claim and viewpoint that the content of our consciousness, and the mode of relating we have to others, is taught by our culture and society: all the metaphysical quantities we take for granted are learned from others around us” (Owen, 1992, p. 386). Contrary to constructivist’s regard that meaning is held in the mind of the individual, constructionists perceive that meaning arises from social interchange and is mediated through language (Hoffman, 1993). In other words, constructionists see reality as created between people, through language and in a particular context. Socialisation through language creates categories about the world; the world is then understood and experienced in terms of these defining categories. Categories influencing peoples’ perception include: family, social network, class, education, gender, culture, religion, age, race, society, time in history and biological and physiological make-up (Durrheim, 1997). It is by means of these filters, their expression and categorization through language that order our experience, dictating our perception of reality (Gonzaléz, Biever & Garder, 1994). Since social

constructionism sees meaning and beliefs as arising from social interaction (McNamee & Gergen, 1992), it would follow that people from different social or cultural environments would view the world differently, that is they would have different realities. This notion of people living in different worlds illustrates the concept of multiple realities. Because of these multiple realities, one can no longer speak of a universe, but of a multiverse (Becvar & Becvar, 1996).

Nagar (2002) provides the example of scientific language as an example of a multiverse, as it is understandable only to those that share the same socially constructed reality. For example, psychologists are familiar with the term 'psyche'. Yet, to someone who is uneducated in psychology, the term has no meaning. This further indicates how language creates reality, that is, the psyche is 'real' for those who know about it (Owen, 1992).

Living in a multiverse can be seen in the effects of the 'global society' (Nagar, 2002). Nagar states that the 'global society' has opened communication across cultures and countries, with the result that what was once regarded as 'fixed' beliefs or customs are being challenged by new information. This new information is providing alternative realities, via modern technology, to communities and, or, individuals, and thus, challenging current concepts of reality. Today, more than in the past, personal values and beliefs are being challenged by alternative choices, and subsequently, a person's concept of what constitutes reality is changing (Gergen, 2002).

In social constructionist theory the term Grand Narratives refers to narratives that subjugate others and purport to tell the truth with no room for alternatives (Doan, 1997). Grand Narratives are social or cultural discourses that are formed by, and in turn, influence people and that take on normative views against which people measure themselves (Nagar, 2002). Grand narratives are supported by the weight of numbers, tradition and firmly entrenched power structures (Doan, 1997). In this way, some customs and traditions

propagate and support the subjugating Grand Narratives. Doan (1997) proposes that most people assimilate within the Grand Narratives so deeply that they think in the way that the Grand Narrative directs them to do, whilst maintaining that these are their own thoughts. In this way, society tends to refer to those that do not behave in accordance with the Grand Narratives, and thus, against social norms and expectations, as having a psychopathology. For example, a Grand Narrative concerns the idea that all women inherently want to have children, and if a woman does not want to have children this is viewed as abnormal. Nagar (2002) says that in this manner “the ‘mad’ and ‘bad’ are removed from society” (p. 35). The mad and the bad being those members of society that do not follow the prescribed modes of behaviour.

Since social constructionism subscribes to a co-created reality and acknowledges that reality is grounded within a particular socio-political-cultural environment (entrenched within subjugating Grand narratives), it would then follow that the social context would determine what would be regarded as appropriate areas of research and what information should be made public (Nagar, 2002). Thus, the socio-political-cultural environment has the power to keep certain views alive, views that inevitably support the social reality. Due to their power and seeming legitimacy (supported by the status quo), these subjugating Grand Narratives are rarely questioned.

Social constructionism deconstructs the Grand Narratives by focusing on how the prevailing norms evolved over time, especially those that marginalize and subjugate people (Gergen, 1997). Research from a social constructionist perspective involves questioning, searching, clarifying, checking and constantly re-evaluating opinions (Owen, 1992). An example of such research would be a deconstruction of the narratives that subjugate women (Nagal, 2002). As realities are constructed in language, they can be deconstructed in

language. In other words, if meaning is created or constructed in language, it can be deconstructed and a new reality or meaning can be created.

Research from a social constructionist perspective maintains that the research process can never be free of the researcher's biases and opinions, as both researcher and participant are rooted in a social and cultural history determining how they view the world and, thus, attribute meanings to their narratives (Nagar, 2002). Researcher and participants mutually influence each other. The researcher, or observer, can never be neutral (as proposed in positivist epistemology) because of the co-created and thus, subjected nature of reality.

From the above it is clear that social constructionism is an approach that embraces the principles of co-created and multiple realities, and that reality is created and maintained through language. Both social constructionism and the constructivist approach both fall under the larger umbrella of postmodernism.

### 2.3.2 Understanding of pathology and depression

The particular meanings imposed on behaviour are dictated and organised by available dominant discourses (White & Epston, 1990). As mentioned above, social constructionists propose that it is these "ultimate truth stories" (Grand Narratives) that are responsible for the development and course of "mental illness" and "family dysfunction" (Becvar & Becvar, 1993, p. 303). People's personal stories are subjugated and denied in favour of the dominant belief system, which tends to pathologise those that do not meet its expectations. As a consequence, people begin to think about themselves and their relationships in ways that are consistent with the Grand Narratives (Rapmund, 1996).

Changing social conditions lead to new dominant discourses which do not replace the existing dominant discourses but which lead to conflict between them (Rapmund, 1996). For example, women today are expected to be successful career women and, at the same time, they are expected to be excellent mothers. These two dominant discourses are in conflict

with one another. Cultural dominant discourses can also pathologise nondominant discourses. For example the dominant western cultural discourse regards the nuclear family as the ideal family. This discourse may pathologise a well functioning single-parent family. Owen (1992) maintains that even the emotions people display are linked to social rules of the cultural or social group to which a person belongs. The relationships between people are seen as either conforming or not conforming with the idealised roles or ways of relating to others. The emotions or cognitions that accompany these behaviours, when one does not meet the expectations of idealised roles, form part of a power play. For example, depressed participants become part of a power play in their social contexts. From this perspective, psychopathology is seen as a behaviour that is taken after a period of powerlessness. Psychopathology breaks the rules of the society either by exaggerating some aspect or by inverting the normal role of the person (Rapmund, 1996). Social constructionists attempt to “de-construct” these realities associated with the dominant discourses in order to “re-construct” or rather co-construct new realities with the client so that meaning is transformed (Coale, 1994).

In approaches where the emphasis is on the individual, the research and therapeutic focus has remained on the individual as the locus of pathology. It is the individual who is regarded as ‘sick’, who exhibits symptomatic behaviour and dysfunctions, and who receives treatment so that he or she may be ‘cured’ (Rapmund, 1996). The individual has to bear sole responsibility for his or her pathology and for his or her recovery whilst the contributions from other sources are largely ignored. A label, which signifies a particular pathology, is usually ascribed to an individual who exhibits certain symptoms (Rapmund, 1996).

Different models use different lenses to explain and treat depression. The many theoretical approaches to depression reflect diverse ways of explaining aspects of depression in individuals. The more traditional approaches tend to view depression as if it existed in an

objective sense. Depression viewed from a social constructionist viewpoint is not considered to exist in an objective sense (the medical and social science perspectives) but rather as a behaviour that is given meaning and is co-created in language (Rapmund, 1996). The development of depression is seen as a complex process. However, it is not seen as occurring in a vacuum but within a context, and this context is most often the relational context. The relational context is also embedded within a larger context, which also exerts its influence. Focus is now placed on the way a person creates their own reality and the influence of the cultural or social context within which the individual is immersed (Rapmund, 1996). Depression is viewed as being inextricably interwoven with the individual's relationships.

Research on depression, situated within the social constructionist paradigm, aims to foreground people's accounts of their experiences of depression, rather than to try to fit their experiences into pre-conceived categories. Inquiries are therefore based on qualitative methods informed by a constructionist epistemology with the goal of developing an understanding of depression from the standpoint of the individual (Stoppard, 1998).

### 2.3.3 Understanding of postpartum depression

Social constructionists analyse postpartum depression utilizing a qualitative approach that prioritises subjective accounts of depression. Motherhood and postpartum depression are explored from women's point of view – their emotional and psychological responses, their feelings of depression, and how these connect to other aspects of their lives and the process through which women become depressed (Mauthner, 1999). The aim is to create an alternative discourse or understanding of postpartum depression grounded in women's accounts, which women, their families and health professionals can draw upon.

According to Mauthner (1998) and Nicolson (1998) the social scientist model ignores the contexts within which women's lives are embedded and thereby positions them as

helpless victims to the pressures of the social world. The social context is merely added to the biological hypotheses, and does not represent a feminist perspective in which women's experiences are the focal point.

Social constructionist researchers argue that constructions of women's reproductive experiences have been around for centuries and each epoch refined and built these notions through discourses and practices into constructions of self and other. These constructions, called 'myths', are asserted to be the result of stories, ideas and beliefs about women that have persisted through the ages (Nicolson, 1998). This body of assumed knowledge has informed western societies knowledge base on sex and gender (Smit, 2002). The social and cultural notions become tightly woven in many women's identities, to which they compare their own personal experiences. Social constructionists attempt to explore and unravel these processes and show how it affects the lives of women (Smit, 2002).

The popular discourses on motherhood abound with ideas that personal fulfilment, happiness and a sense of completion will follow the experience of childbirth. While some women experience childbirth and the postpartum in this manner, Nicolson (1998) and Mauthner (1998) demonstrate that many women do not. When the experience of childbirth and the postpartum is not consistent with popular ideology (Grand Narratives) it may result in feelings of disappointment and disillusion. Social constructionist researchers propose that postpartum depression is a consequence of this clash between ideological notions and personal experience in the postpartum period (Mauthner, 1998; Nicolson, 1998; Stoppard, 1998).

The social constructionists proposal as to why mothers living in the same cultural context develop depression while others do not, is that mothers not suffering from depression do not experience a conflict between their expectations and their experiences of motherhood, either because their expectations are not high or 'unrealistic' to begin with, or because their

experiences are largely positive ones (Mauthner, 1998). Another reason may be that they have come to terms with their feelings and were able to disclose them in a supportive environment.

Postpartum depression is not viewed as an objective diagnostic category but as a term loosely used to explain the multiple experiences that surround the conditions impacting on the experience of childbirth and motherhood. These are identified through taking women's accounts of mothering seriously.

#### 2.4 Conclusion: the label "postpartum depression"

Although the medical model has been criticised by both the social science model and the social constructionist model for pathologising women's distress during the postpartum period, it has done much to give credence to women's distress by providing an explanatory model for understanding what is happening to them. The label of depression as proposed in the medical model appears to have more use as a 'lay' term than a scientific term, as it appears to provide relief for mothers (Nicolson, 1998). Mauthner (1998) claims that mothers themselves feel that the medical label and status, and the hormonal explanation, releases them from blame and responsibility because the depression is something that is happening to them, their bodies, and is therefore beyond their control.

In the following chapter the empirical literature on depression and postpartum depression within a positivist framework will be discussed. This discussion includes an exploration of the etiology, clinical picture, prevalence rates, and assessment and detection of depression and postpartum depression in western and nonwestern countries.

## CHAPTER THREE: LITERATURE REVIEW

### 3.1 Introduction

The literature review begins with a brief discussion on depression and depressive symptomatology followed by postpartum depression, as presented in literature from a positivist paradigm. A tradition exists in positivist research and practice to consider depression and depressive symptomatology occurring after childbirth as a distinct diagnosis (Whiffen & Gotlib, 1993). This distinction has resulted in the literature on postpartum depression and general depression proceeding independently. Thus, in the present study literature on depression and postpartum depression is presented separately.

The discussion in the present study is situated within a medical model, as it is assumed that depression is an identifiable disorder constituted by a specific set of signs and symptoms. The section on depression focuses on: definitions of depression; measurement of depression and depressive symptoms; depression in non-western cultures; assessment and detection of depression and depressive symptomatology cross-culturally, including the problems encountered when transporting psychiatric instruments to other cultures; and finally, a presentation of prevalence rates of depression and depressive symptomatology in developed and developing countries.

Similarly, the section on postpartum depression includes: definitions of postpartum depression; risk factors for developing postpartum depression; measurement of postpartum depression and depressive symptoms; and prevalence rates of postpartum depression and symptoms of depression in developed and developing countries. Depression rates and rates of depression symptomatology of childbearing and non-childbearing depression populations are compared.

## 3.2 Defining depression

### 3.2.1 Case definition

The term depression is used in at least three different ways: as a mood, a symptom, and a syndrome. Depression as a mood is considered to be a healthy emotion of sadness experienced by people of all ages during the course of their lives (Dalton & Holton, 1996). When depression is experienced as a mood the individual is neither ill nor experiencing any loss of abilities or functioning (Dalton & Holton, 1996). A feeling of control over one's mood and affect is maintained. Depression as a symptom refers to a secondary mood disorder due to a general medical condition or a substance-induced mood disorder (Swartz, 1998).

Depression viewed as a syndrome refers to a mood disturbance in which pathological mood and related disturbances dominate the clinical picture (Paykel, 1991; Swartz, 1998). A syndrome refers to a cluster of signs and symptoms that persist from one week to many months, often in a periodic or cyclical fashion. People experiencing depression as a syndrome experience loss of control over their moods and affect (Sadock & Sadock, 2003). There is also a marked departure from a person's habitual functioning. The syndrome of depression is also referred to as clinically significant depression (Sadock & Sadock, 2003).

In the present study the focus will be on depression and depressive symptomatology as a syndrome, rather than on depression as a mood or symptom.

### 3.2.2 Depressive symptomatology

The set of experiences referred to as depression consist of negative changes in the quality of mood (sadness and lack of pleasure) and thought (hopelessness about self and future) as well as profound alterations in a person's transactions with the external environment, in both social and material aspects (Sadock & Sadock, 2003). People with symptoms of depression and clinical depression typically manifest an indifference to interpersonal interaction, characterized by irritability, social withdrawal, and an inability to

engage in mundane activities (Dalton & Holton, 1996; Sadock & Sadock, 2003; Stoppard, 1998).

### 3.2.3 DSM-IV-TR classifications

The syndrome of depression is classified as a mood disorder in standard diagnostic systems, for example the DSM-IV-TR (APA, 2000). A mood disorder refers to a sustained emotional state characterised by pathological mood.

A person's mood can be normal, elevated or depressed. Individuals experiencing elevated moods demonstrate, "expansiveness, decreased sleep, heightened self-esteem and grandiose ideas" (Sadock & Sadock, 2003, p. 534). Whereas, individuals experiencing depressed mood report "loss of energy, and interest, feelings of guilt, difficulty concentrating, and thoughts of death or suicide" (Sadock & Sadock, 2003, p. 534).

A major depressive disorder (or unipolar depression) consists of only major depressive episodes. The symptomatic picture of unipolar depression has been codified in the DSM-IV-TR (APA, 2000). According to the DSM-IV-TR a major depressive episode is required to have duration of at least two weeks. Typically, a diagnosis of major depression requires either, or both, of the two main symptoms (depressed mood and, or, loss of enjoyment) and disturbances in the following areas:

appetite and weight (either decrease or increase when not dieting), sleep (either insomnia or hypersomnia), psychomotoricity (either retardation or agitation), capacity to experience interest and pleasure (decrease in general or specifically sexually), energy level (fatigue and low energy), self-esteem (self-blame, guilt, sense of worthlessness), cognitive functions (loss of concentration and memory and of the ability to make decisions or of thinking fast), attitude toward survival (death wishes, suicidal ideation, suicidal attempts). (Covi, 1986, p. 55)

Individuals experiencing both manic (elevated moods) and depressive episodes, or only manic episodes, are said to have bipolar disorder (Covi, 1986). Hypomania is an episode of manic symptoms not meeting the criteria required diagnosis of a manic episode.

A mixed episode is diagnosed when both a manic episode and a major depressive episode occur almost daily for at least one week (Sadock & Sadock, 2003). Bipolar II disorder is characterised by episodes of major depression and hypomania.

### 3.2.3.1. Subtypes of depressive episodes

Two subtypes of depressive episodes ('melancholic' and 'atypical') are categorised by specific symptom features (Goldstein, 1994). The term melancholia refers to depression characterised by severe anhedonia, early morning awakening, weight loss, and profound feelings of guilt.

Characteristics of atypical depression include symptoms of over-eating and over sleeping (Dalton & Holton, 1996). Atypical symptom pattern is also referred to as 'reversed vegetative symptoms' or 'hysteriod dysphoria' (Sadock & Sadock, 2003). Individuals experiencing atypical subtype of depression report a higher incidence and severity of anxiety symptoms than individuals' experiencing typical features of depression (Dalton & Holton, 1996).

### 3.2.3.2 Subtypes of depressive and manic episodes

'Catatonic features' and 'with postpartum onset' are two symptom features used to describe patients experiencing depressive and manic episodes. Catatonic features include stupor, blunted affect, extreme withdrawal, negativism, and marked psychomotor retardation. With postpartum onset, is the specification used when onset of symptoms occurs four weeks postpartum (Sadock & Sadock, 2003).

### 3.2.3.3 Dysthymia and cyclothymia

Dysthymic disorder is a chronic persistent syndrome characterised by the presence of depressed mood lasting most of the day for a two-year period (Covi, 1986). Cyclothymic

disorder is characterised by the presence of hypomanic and manic symptoms for a minimum period of two years (Goldstein, 1994).

### 3.3 Measures of depression

Diagnostic instruments measure depression as a clinical construct, whereas symptoms of depression are measured by self-report questionnaires.

#### 3.3.1 Measures of depression as a clinical construct

The Structural Clinical Interview (SCID) is considered to be the gold standard for a research diagnosis of depression (Kessler, Bergland, Demler, Jin & Walters, 2005). The SCID is a semi-structured interview administered by a clinician for making the major Axis I DSM-IV-TR diagnosis of a Major Depressive Episode (MacArthur & MacArthur, 1998). Other commonly used diagnostic measures of clinical depression include the Schedule for Affective Disorders and Schizophrenia (SADS) (Geesey, 2005), the Standardised Psychiatric Interview (SPI) (also referred to as the Clinical Interview Schedule (CIS) (Geesey, 2005), and the Present State Examination (PSE) (Geesey, 2005).

Administration of clinical interviews can be time consuming and expensive, therefore, epidemiological studies often use clinical interviews designed for administration by lay interviewers such as the Composite International Diagnostic Interview (CIDI) (Kessler, McGonagle, Zhao, Nelson, Hughes, Eshleman et al., 1994), the Diagnostic Interview Schedule (DIS), or self-report questionnaires measuring symptoms and mood rather than illness and disorder (MacArthur & MacArthur, 1998).

#### 3.3.2 Measures of depressive symptomatology

Two of the most popular self-report measures are the Centre for Epidemiological Study of Depression Scale (CES-D) and the Beck Depression Inventory (BDI) (Geesey, 2001; McArthur & McArthur, 1998). The CES-D was designed to measure current levels of depressive symptomatology and depressive affect (MacArthur & MacArthur, 1998). While it

was designed for use in both general and specific populations, the CES-D was not intended for use as a diagnostic instrument or to indicate severity (Geesey, 2001). The 20 items were chosen to represent major components of depressive symptomatology (MacArthur & MacArthur, 1998), these include: depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, loss of appetite, sleep disturbance and psychomotor retardation (Geesey, 2005). The scale can distinguish between clinical groups and general community groups. The CES-D is usually scored continuously, but there are various cut-off scores for clinical depression with reasonable associations between cut-off scores and a clinical diagnosis (MacArthur & MacArthur, 1998). The CES-D does not measure clinical depression, rather it measures dysphoria and the somatic complaints often associated with depression (Geesey, 2005).

The BDI was originally developed in 1961 (Beck et al., 1961). A revised version of the BDI was introduced in 1971 and copyrighted in 1978 (Beck, Rush, Shaw & Emery, 1979; Beck, Steer & Garbin, 1988). The BDI consists of a list of 21 symptoms and attitudes, each rated in intensity (Beck et al., 1961; Beck, Steer & Garbin, 1988). The BDI is based on the cognitive theory of depression and two items assess affect while eleven items assess cognitive symptoms. There are two behavioural items, five items assessing somatic complaints and one interpersonal item. Each item is rated on a four-point scale (range: 0-3) (Beck, 2001). A total score of 10 or higher is the most widely used cut-off for significant depressive symptomatology (Beck et al., 1961; Beck, 2001). Although originally designed for administration by trained interviewers, it is most often self-administered and takes on average 5-10 minutes to complete (Beck et al., 1988). The BDI has been used to measure severity of depressive symptomatology in depressed samples and to assess levels of depressive symptomatology in general population samples (Beck, et al., 1988). Although it is a sensitive

instrument developed to measure different levels of depression, it was not developed to establish clinical diagnosis (Bonilla, Bernal, Santos & Santos, 2004).

MacArthur and MacArthur (1998) suggest a number of alternative self-report scales researchers might consider utilising in their studies, including the Hamilton Psychiatric Rating Scale for Depression (HSRD), the Zung Self-Rating Depression Scale (Zung), the General Health Questionnaire (GHQ), the MMPI Depression Scale (MMPI-D) and the Multiple Affect Adjective Checklist Depression Scale (MAACL-D). The Geriatric Depression Scale (GDS) is a self-report specifically designed for rating depression in the elderly (Geesey, 2005).

These depression measures have been developed for use in western countries. The following two sections discuss what is understood about depression in non-western cultures and how medical researchers have attempted to assess and detect depression in these nations.

#### 3.4 Depression and culture

The medical model proposes an essential prototypical disorder called depression. It is conceived of as being immutable, definable and universal (Laubscher, 2003). Some cross-cultural psychologists emphasise a distinction between disease (a biological malfunction) and illness (the personal, interpersonal and cultural reaction to disease) (Furnham & Malik, 1994). These researchers have highlighted that culture establishes what constitutes an illness as well as the appropriate response to that illness (Furnham & Malik, 1994; Lochner, 1999; Templeton et al., 2003). Thus, culture is perceived to affect how the universal disorder is perceived and experienced. However, other cross-cultural psychologists challenge the conceptualisation of mental disorders and the universality of both signs and symptoms (Littlewood, 1990). Littlewood argues one cannot talk about a universal disorder because one cannot separate disease from how it is experienced (illness).

This debate in cross-cultural psychology is evident in research questioning whether non-western cultures and western cultures have different attitudes to some similar universal experience (called depression) that has cross-cultural equivalence, or more simply that they respond in certain contexts (the research interview or in doctors' rooms) to a single word or concept (depression) in different ways (Furnham & Malik, 1994). In the present study, the terms 'western countries' refer to the societies of Western Europe and their genealogical, colonial, and philosophical descendants, typically also including those countries whose ethnic identity and dominant culture derive from European culture (Wikipedia, 2006).

As the present study is positioned within a medical framework the assumption maintained is that biology of depression "underwrites the inner form" (Kleinman, 1988, p. 25) of this disorder, and symptoms, and cultural beliefs and values influence the expression. Cultural factors influencing the expression of illness include cultural expectations, taboos and current knowledge systems (Furnham & Malik, 1994).

The characteristics of depressive disorders in non-western cultures, specifically in various countries in Africa, have been a topic of debate within the medical and psychological literature (Abas & Broadhead, 1997). Previously, researchers claimed depression in Africa is difficult to detect because the symptom profile differed from that observed in patients with depression in western countries. This came to be known as the 'masked depression' hypothesis (Swartz, 1998). Some western psychiatrists emphasised the preponderance of somatic symptoms in patients with depression in Africa, whereas others suggested a symptom profile consisting of rarity of guilt, self-depreciation, and suicidal ideation (Sethi, 1985).

In contrast to these previous suggestions, researchers are presently proposing symptom profiles of patients with depression and depressive symptomatology in non-western cultures are similar to those of western patients (Abas & Broadhead, 1997). For example, in

a study conducted by Abas and Broadhead (1997) in Zimbabwe, the majority of women with depression reported symptoms of self-depreciation, guilt and hopelessness. The authors also observed that although physical symptoms were volunteered, psychological symptoms were more common and it was clear that many somatic symptoms directly conveyed the physical experience of emotion. Abas and Broadhead propose that one of the reasons previous authors may have emphasised somatisation in developing countries is through misinterpretation of patients discomfort reporting.

### 3.5 Depression, measurement and culture

Literature on culture and depression, from a medical perspective, concedes an underlying essential assumption depression is an illness occurring in all cultures and can be detected with the correct diagnostic tools. Based on these assumptions many articles recount numerous western scales of depression and depressive symptoms that have been transported to populations other than western countries (Laubscher, 2003).

#### 3.5.1 Examples of western depression scales used cross-culturally

The Self-Reporting Questionnaire (SRQ) is a 25-item instrument successfully used as a screen for psychiatric morbidity in developing countries, including South Africa (Rumble, Swartz, Parry & Zwarenstein, 1996). Rumble et al. propose that for estimating base-line prevalence of mental disorder in a rural village community the SRQ is moderately useful.

In a cultural study involving the BDI (Beck et al., 1961) Tashakkori, Barefoot and Mehryar (1989) provided information on the performance of this instrument in a sample of Iranian students. Their sample is distinctively different from those used in previous studies as Iranian culture differs dramatically from western cultures in both values and taboos. The results point to the strength of the BDI as a measure of depressive symptomatology among college students in this culture. The authors conclude that the ease of translation, administration and interpretation of the original BDI in cross-cultural settings and its value as

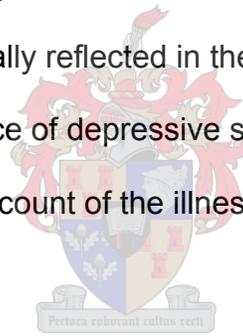
a multifactor measure of symptoms of depression, points to its value as a measure of depressive symptomatology in non-clinical populations.

### 3.5.2 Threats to validity

There are two primary threats to validity in the transportation of psychiatric instruments based on standard western diagnostic systems (Parry, 1996). The first threat arises from culturally distinctive behaviour and the second from the translation process.

#### 3.5.2.1 Cultural differences

A major problem can occur when confusion arises between cultural distinctive behaviour and psychopathological manifestations (Parry, 1996). This is because certain behaviours tolerated in one group may be unusual, or even unacceptable, to another. Cultural distinctive behaviour is normally reflected in the language and expressions common to a specific culture. As the experience of depressive symptoms is partly determined by culture, this in turn then affects the account of the illness given to health professionals (Parry, 1996).



#### 3.5.2.2 Language problems

Based on a specific constellation of signs and symptoms western medical culture developed the concept label depression. This term fits and suits western culture to describe mood changes and to denote illness. As a result, problems occur in the translation of western depression measures for use in cultures where there is no equivalent translation of the term depression (Lochner, 1999). In such cultures, the concept may be presented through different linguistic phrases, such as metaphors of life and symbolic language (Ellis, 2003).

Problems in translation can also occur when the term depression is used, yet, denotes something other than according to western standard diagnostic criteria. In such cultures phrases and expressions may be labelled depression but are not seen as such (Ellis, 2003). Rather, the term depression may denote 'something' that is different from the normal mental

or physical state (Templeton et al., 2003), or the concept may remain diffuse and undifferentiated (Ellis, 2003). Therefore, it is necessary to understand the culture specific terminology used by the subjects.

### 3.5.3 Overcoming threats to validity

#### 3.5.3.1 Overcoming cultural differences

Parry (1996) suggests that in order to control the potential impact of cultural difference on the validity of psychiatric instruments, it is necessary for researchers to conduct an anthropological study to understand how the study population understands mental illness and to explore indigenous forms of expression and classification of illness. Based on these investigations, the researcher can then supplement the depression instruments developed for use in a western population by adding questions to enquire about somatic expressions of mental illness.

#### 3.5.3.2 Overcoming language problems

Parry (1996) provides a three-step strategy for avoiding translation problems. The first step is to undertake a thorough translation of the instrument, ensuring to translate the concept behind each item. This step can involve incorporating local idioms of distress. The second step is to the instrument independently back-translated into the original language. Lastly, the third step involves negotiation of the differences between the original and back-translation and to make necessary adjustments.

In conclusion, methods used to identify patients with depression that have been developed in one culture can be used in others, provided attention is given to conceptual translation.

Based on the assumptions of the medical model, the present study assumes that standard depression instruments can accurately measure depressive symptomatology in non-western populations.

### 3.6 Prevalence studies of depression

#### 3.6.1 Introduction: Definition of concepts

Epidemiology is defined as the “study of the distribution, incidence, prevalence, and duration of disease” (Sadock & Sadock, 2003, p. 171). In psychiatry epidemiological methods contribute to an understanding of the causes, treatment and prevention of mental disorders. Epidemiological studies are also used to compare the incidence and prevalence of disorders and diseases internationally and cross-culturally.

Incidence is the number of new cases of a disorder or disease occurring over a specified time frame. The most common period used is one year (Sadock & Sadock, 2003).

Prevalence studies provide information on the prevalence of a disease or disorder in a representative population at a particular point in time. In other words, prevalence refers to the number of persons suffering from the disorder or disease at any time during a specified period. There are several types of prevalence, namely point prevalence, period prevalence and lifetime prevalence (Sadock & Sadock, 2003). Point prevalence is the number of persons who have a disorder at a specified point in time. Period prevalence is the number of persons who experience the disorder at any time during a specified period and includes any existing cases at the start of the period of study and any new cases that develop during the time frame (Sadock & Sadock, 2003). Lifetime prevalence is the proportion of a sample who ever experienced a disorder (Kessler et al., 1994).

The prevalence rates of clinical depression and depressive symptoms in developed and developing countries are presented in the following section. In the present study, the definition of a developed country is one that has a relatively high per capita gross domestic product (GDP), where most people enjoy a relatively high standard of living through a strong high-technology diversified economy (Wikipedia, 2006). A developing country is either a low- or middle-income country in which most people have a lower standard of living with access to

fewer goods and services than do most people in high-income countries (Wikipedia, 2006). Other terms include “Third World” and “less developed countries” (Wikipedia, 2006). There is much debate about the appropriateness of all these terms.

The studies presented in Tables 1 and 2 have been assembled on the basis of a review of the literature. The studies cover a broad range of ages, use a variety of epidemiological instruments and include community, health clinic and student samples.

### 3.6.2 Prevalence studies conducted in developed countries

Table 1

*Prevalence of Adult Depression: Developed Countries*

	Country	Measures	Population	Sample	<u>N</u>	Prevalence (%)
Study						
Banerjee (1993)	United Kingdom	GMS	Urban	Elderly outpatients	169	26.0
Hobbs et al. (1983)	Scotland	GHQ, CIS	Urban	Female outpatients	1571	30.4
Kendler et al. (1993)	America	DSM-III-R	Urban	Female outpatients	1360	16.3
Lester & Akande (1997)	America	BDI	Urban	Student	377	6.0
Sonnenberg et al. (2000)	Holland	CES-D	Urban	Community	3056	14.9

Community prevalence studies, in developed countries, indicated approximately 5% of the population satisfied the criteria of the PSE or DSM-III for clinical depression in a six-month period (Paykel, 1991). The prevalence rate of depressive symptoms (6.0%) observed in a

sample of students living in the United States is consistent with these reports (Lester & Akande, 1997). Higher rates of depressive symptoms have been reported in community populations. Table 1 demonstrates that Sonnenberg et al. (2000) reported a 14.9% prevalence rate of depression, as assessed with the CES-D, in a community sample of 3056 elderly Dutch adults. In a previous British study, Banerjee (1993) reported 26.0% of their elderly sample met the criteria for cases of depressive symptomatology (using the GDS as a measuring instrument).

High rates of depression and depressive symptoms have also been observed in general health clinic samples. The period prevalence of major depression, for a sample of 1360 women registered with general health clinics in the United States, was detected to be 16.3% (Kendler et al., 1993). Hobbs, Ballinger and Smith (1983) report nearly double this rate for their sample of outpatient women attendees. The point prevalence of depressive symptoms, as determined by self-report questionnaire, was found to be 30.4% (Hobbs et al., 1983).

Kessler, et al. (1994) used a structured psychiatric interview in a National Comorbidity Survey administered to a national probability sample in the United States. Results suggested nearly 50% of the sample reported at least one lifetime disorder and close to 30% reported at least one 12-month disorder. The most common disorder was major depressive episode (MDE), 17% reported a history of MDE in their lifetime and more than 10% experienced an episode in the 12-months prior to the interview (Kessler et al., 1994). Based on their results, Kessler and colleagues concluded the prevalence of mental illness in the United States is greater than previously assumed. The higher percentage of mental illness was suggested to be due to either secular trends or methodological factors, namely the use of DSM-III-R diagnoses (more stringent diagnostic criteria) rather than screening instruments (Kessler et al., 1994).

## 3.6.3 Prevalence studies conducted in developing countries

Table 2

*Prevalence of Adult Depression: Developing Countries*

	Country	Measures	Population	Sample	<u>N</u>	Prevalence ( <u>%</u> )
Study						
Abas & Broadhead (1997)	Zimbabwe	PSE SSMD <sup>a</sup>	Semi-urban	Female outpatients	172	30.8
Hollifield et al. (1990)	Lesotho	DIS	Urban	Community	356	12.4
Kim et al. (2002)	Korea	KGDS <sup>b</sup>	Rural Urban	Elderly Community	1134	33
Kim et al. (2004)	Korea	GMS	Rural Urban	Elderly Community	1204	9 21
Lester & Akande (1997)	Nigeria South Africa	BDI	Urban	Student	177 71	7.3 11.8
Patel et al. (1999)	India Chile Brazil Brazil	CISR GHQ CISR SRQ	Urban	Outpatients Outpatients Community Community	303 4200 1277 621	46 52 23 35
Rumble et al. (1996)	South Africa	PSE SSMD	Rural	Community	481	27.1 14

<sup>a</sup>SSMD = Shona Screen for Mental Disorders<sup>b</sup>KGDS = The Korean Form of Geriatric Depression Scale

In 1976 the World Health Organization began conducting extensive investigations into community mental health care within primary mental health care systems in developing countries (Swartz, 1998). These studies detected rates of psychiatric morbidity similar to (and sometimes higher than) developed countries (Swartz, 1998). Recent epidemiological studies support these previous findings. Sethi (1985) reported that prevalence rates of depression (major, minor, and depressive symptoms) ranged from 5-40% in psychiatric hospitals in developing countries. Depression and depressive symptoms also appears prevalent in community and outpatient studies. Depression is currently claimed to rank fifth in illness burden among women and seventh among men in these communities (Desjarlais & Kleinman, 1995).

Evidence of high prevalence rates has been generated from different communities in low and middle-income countries. In Korea Kim, Shin, Yoon and Roberts (2002) conducted one of the few investigations into the risk factors for late-life depression in developing countries. A significant association was detected between depression and increased age. The overall prevalence (33%) found in Kim et al.'s (2002) study appears to be considerably higher relative to other older populations (Banerjee, 1993).

In a post-hoc analysis of studies conducted in developing countries (Patel, Araya, de Lima, Ludemir & Todd, 1999) the prevalence rates of common mental disorders was found to be 52%, 23% and 35% for samples in Chile and Brazil (Pelotas and Olina). In India, 46% of the urban sample met the criteria for a depressive disorder according to the CISR (Patel et al., 1999).

High morbidity rates have also been found in clinic studies conducted in Africa. Abas and Broadhead (1997) utilised the PSE as a measure of clinical depression in a sample of Zimbabwean women. The author reported an annual prevalence of 30.8% (Abas & Broadhead, 1997). The cross-sectional prevalence of depressive disorder among the random

sample of women living in Harare was found to be 1:4 times higher than that found in epidemiological studies conducted in developed countries (Abas & Broadhead, 1997).

A similar depression rate has been observed in a South African community study. Rumble et al. (1996) used a random sample of 481 adults from the South African community village of Mamre. The study was a community based cross-sectional descriptive study using a two-stage case identifying method. The participants were assessed with the SRQ as a first-stage screen and the PSE was administered to a portion of the total sample as a second stage criterion. The prevalence was found to be 27% (Rumble et al., 1996).

Although the number of studies conducted in developing countries, and Africa in particular, are limited based on the studies listed in Table 2 it appears that clinical depression and depressive symptoms may be more prevalent in developing countries than developed countries.

#### 3.6.4 Gender ratios

Results from numerous epidemiological studies in developed countries, suggest women are twice as likely to be affected by depression than men (Kessler et al., 1994; Stowe & Nemerhoff, 1995; Strebel, Msomi & Stacey, 1999; Weissman & Klerman, 1977). The lifetime risk of major depression has been reported to be between 20% and 26% for women and between 8% and 12% for men (Kessler et al., 1994). Major depression in women is claimed to have a peak onset during the childbearing years (Pope et al., 2000).

Populations where sex differences in depression have not been consistently found include university students, the bereaved, the elderly, the Old Order Amish, and residents of rural developing countries (Nolen-Hoeksema, 1987).

### 3.7 Defining postpartum depression

#### 3.7.1 Postpartum mood disorders

Three postpartum mood disorders may appear during the year following delivery: maternity blues, puerperal psychosis, and postpartum depression (Brockington, 1996; Najman et al., 2000; Smit, 2002). According to the medical model these disorders are differentiated on the basis of prevalence, clinical presentation and course, including time of onset and duration (Brockington, 1996; Cooper & Murray, 1997; O'Hara, 1997).

##### 3.7.1.1 Maternity blues

Maternity blues, or 'baby blues', refers to a mild dysphoric mood disorder occurring between three and five days after childbirth (Brockington, 1996; Hendrick, 2003; O'Hara, 1997). The disorder is characterized by tearfulness, confusion, mood lability, anxiety, and depressed mood (Brockington, 1996; O'Hara, 1997). It has been hypothesised that maternity blues is related primarily to hormonal fluctuations occurring before and after childbirth (Boath & Henshaw, 2001; Najman et al., 2000; Stowe & Nemeroff, 1995; Susman, 1996). Maternity blues is reported to affect between 25% and 80% of mothers (Brockington, 1996; O'Hara, 1997; Smit, 2002). This varying range of prevalence estimates may reflect different study methods rather than real underlying variability in the condition (Pope et al., 2000). Symptoms usually subside within two weeks postpartum without requiring specific treatment (Brockington, 1996).

##### 3.7.1.2 Puerperal psychosis

The term puerperal psychosis refers to psychotic episodes appearing within the first four to six weeks after childbirth (Boath & Henshaw, 2001; Brockington, 1996; Stowe & Nemerhoff, 1995). Symptoms include hallucinations, delusions, mania, and psychotic behaviour (Boath & Henshaw, 2001; Brockington, 1996). It is the least common postpartum

mood disorder, affecting between one and four mothers in a thousand (Boath & Henshaw, 2001; Brockington, 1996; Stowe & Nermerhoff, 1995).

Most puerperal psychoses are bipolar depressive episodes (Epperson, 1999). Sleeplessness, agitation, expansive or irritable mood, and avoidance of the infant are early warning signs heralding the onset of puerperal psychosis. Puerperal psychosis is most common in mothers with a personal or family history of schizophrenia or manic depression (Pope et al., 2000). Biological processes of childbirth are proposed to play a role in the development of psychosis in women with a biological predisposition to psychotic disorders (Lee, 1997). Treatment usually requires inpatient treatment and medication. When treated, puerperal psychosis can last for three to four days (Smit, 2002).

Although there have been many investigations into maternity blues and puerperal psychosis, neither are included as formal diagnostic categories in the DSM-IV-TR (APA, 2000; O'Hara, 1997).

### 3.7.1.3 Postpartum depression

Postpartum depression, or 'postnatal depression', is a clinical term referring to a depressive episode temporarily associated with childbirth (Epperson, 1999). Postpartum depression is defined as a mild to moderate mood disturbance with an onset between birth and six months postpartum (APA, 2000; Brockington, 1996; Crockenberg & Leerkes, 2003; Fuggle, Glover, Khan & Haydon, 2002). Postpartum depression is the least well-defined emotional disturbance of the postpartum mood disorders (Lee, 1997).

The clinical picture of postpartum depression as proposed within the medical model is presented in the following section.

### 3.7.2 Clinical picture of postpartum depression

#### 3.7.2.1 Classification of postpartum depression according to the DSM-IV-TR

Despite the attention postpartum depression has received medically, it was only in 1992 that the American Psychiatric Association (APA) and the World Health Organisation (WHO) identified postpartum depression as a distinct diagnosis (Cox et al., 1993; Whiffen, 1992). Presently, postpartum depression is diagnosed in the DSM-IV-TR as a major depressive disorder, dysthymia or bipolar I (APA, 2000; Sadock & Sadock, 2003). A diagnosis of 'depressive disorder not otherwise specified' can be made when the symptom presentation does not meet the full criteria for a major depressive disorder. A minor depressive disorder falls into this category (Sadock & Sadock, 2003). The course specifier 'with postpartum onset' (APA, 2000) is added to differentiate depression occurring within four weeks of childbirth and depression occurring at other times in the life cycle.

There are problems with the standardized diagnostic criteria provided by the DSM-IV-TR. Firstly, authors O'Hara et al. (1990) mention that although the criteria may be appropriate to diagnose major psychological depression, it is insensitive to a wide range of psychological distress. Secondly, the somatic symptoms (such as sleep disturbances) sometimes associated with depression may not be appropriate as a distinction of depression in the puerperium (Cox et al., 1993). This is because many of the physiological changes of pregnancy and the puerperium are proposed to be similar to the symptoms of depression.

#### 3.7.2.2 Controversy regarding the clinical picture

A controversy exists about the relationship between postpartum and nonpostpartum depression in both research and practice. Some researchers argue that these diagnoses cannot be differentiated (Whiffen, 1992; Whiffen & Gotlib, 1993) whilst others insist that postpartum depression is distinct and specific to childbirth (Beck, 1992; Dalton, 1980). The debate impacts significantly on the conceptualisation of postpartum depression and the

manner in which it is investigated. Researchers proposing postpartum depression is no different from other depressions generally test etiological models derived from general depression literature, and emphasize the role of social factors in the development of postpartum mood disorders (Whiffen, 1992). Researchers proposing postpartum depression is a distinct disorder generally argue postpartum depression has biological origins that distinguish it from nonpostpartum depression (Dalton, 1980).

Smit (2002) states that the debate on whether postpartum depression should be classified as a separate condition in the official nomenclature can be divided in two sections. Firstly, to prove that postpartum depression warrants a separate diagnosis research needs to demonstrate postpartum depression is a uniform disorder with a distinct clinical picture in terms of symptom pattern, onset and duration. Secondly, research needs to show postpartum depression is severe enough to be a mental health problem in its own right (Najman et al., 2000). To date, there has been little evidence in the literature that can scientifically prove postpartum depression is different from depression occurring at other times in the life cycle (Smit, 2002). Despite this, many authors argue the presence of an infant makes this diagnosis valid (Beck, 1992). In consideration of the second part of the debate, it is then necessary for researchers to determine whether the postpartum period is a time of increased risk for women to develop depression.

The debate on whether postpartum depression is a distinct disorder is complicated by the multitude of various definitions used and the difficulty in determining specific periods of onset and duration (O'Hara & Zekoski, 1988). These issues are explored further in a discussion on the postpartum literature regarding its onset, duration, symptom pattern, and prevalence.

### 3.7.2.2 Onset and duration

The debate on whether postpartum depression warrants a separate diagnosis from other depressions is evident in the lack of consistency regarding timing of onset and duration of postpartum depression in the literature (Smit, 2002). The timing of onset and the duration of symptoms affect the ranges researchers use in their studies on postpartum depression (Nicolson, 2000).

Currently, there is no agreement in the literature regarding the limits for the onset of postpartum depression (Nicolson, 2000). The period of onset ranges from three weeks (O'Hara et al., 1984; O'Hara Zekoski, Phillips & Wright, 1990) to 12 months after delivery (Cooper et al., 1988). Generally, the third month postpartum is the preferred cut-off rate for an onset of postpartum depression (Brockington, 1996; Cooper et al., 1988; Cox et al., 1993; Kumar & Robson, 1984; Lee, 1997; Stowe & Nemerhoff, 1996). In an effort to standardise the terminology, the DSM-IV-TR restricted the specifier of 'with postpartum onset' to depressive episodes occurring within four weeks of delivery (Hendrick, 2003). Despite these efforts numerous studies of postpartum depression continue to use wider time frames (Hendrick, 2003).

There is also a relative deficiency in consistent information regarding the duration of postpartum depression. In the literature, duration of postpartum depression ranges from three months (Cooper & Murray, 1995) to a few years (O'Hara, 1997). In sum, the average length of episodes of postpartum depression appears to be of several months duration (O'Hara & Zekoski, 1988). Investigators state that this length of time does not differ much from the durations of depressions occurring at other times in the life cycle (Cooper & Murray, 1995; Kumar & Robson, 1984; O'Hara, 1997).

The inconsistency in timing of onset and duration between researchers makes comparisons of their studies on postpartum depression difficult and problematic (O'Hara & Zekoski, 1998)

### 3.7.2.3 Symptom profile

Early reports on postpartum depression describe it as an atypical depression or a milder form of depression resulting from the lack of neurovegetative symptoms and suicidal thinking, but with higher than usual anxiety levels and irritability (Dalton & Holton, 1996; Pitt, 1968; Stowe & Nemerhoff, 1995). Pitt (1968) defines atypical depression as:

A milder variant of physiological depression most often seen in younger women or immature personalities. It is atypical either because of the prominence of neurotic symptoms, such as anxiety, irritability or phobias, overshadowing the depression or because some features are opposite to those of classical depression, e.g. worsening at the end rather than at the beginning of the day, early rather than late insomnia. (p. 1327)

In contrast to Pitt's proposal, later studies have not found any support for the view that postpartum depression is atypical (Cooper et al., 1988, O'Hara et al., 1990). Results of recent empirical research currently suggest mood disturbance emerging during the puerperium may not differ significantly in symptom profile from affective illnesses occurring in women at other times (Lee, 1997).

#### 3.7.2.3.1 Challenges in recognition: Confusion with normal postpartum adaptation

Similarities between symptoms of depression and normal adjustment period after childbirth are claimed to complicate the detection and treatment diagnosis postpartum depression (Epperson, 1999).

Symptoms of major depression that may be confused with normal postpartum adaptation include: sleep disturbance (insomnia or hypersomnia), weight loss, loss of energy,

and diminished concentration or decisiveness (Epperson, 1999). When trying to determine if the presence of a symptom is a sign of depression or a normal postpartum reaction, the clinician is advised to consider the circumstances (Epperson, 1999). Loss of energy and diminished concentration are frequently the result of sleep deprivation (Campbell & Cohn, 1991; Hopkins et al., 1989). Epperson (1999) states a woman's level of exhaustion and irritability when her infant is two weeks old and nursing frequently may not be normal when her baby is four months old and sleeping soundly through the night. The intensity and degree of a woman's coping response may also indicate a pathologic state. These conditions need to be considered from both angles (that of normal postpartum adjustment and postpartum depression). The cause of these symptoms needs to be determined as they may be disguising a depressive disorder (Susman, 1996).

### 3.8 Risk factors for postpartum depression

There are numerous theories on possible causes in the development of depressive episodes. This section contains a brief review of the possible biological, genetic, and psychosocial factors suggested as having an association with depressive symptomatology.

Considering the etiology of postpartum depression, two observations need to be mentioned. Firstly, possible precipitating causes or triggers are many and tend to be interrelated (Boath & Henshaw, 2001; Brockington, 1996). Secondly, many studies on postpartum depression have investigated causal and precipitating factors in different ways, making results difficult to compare (Boath & Henshaw, 2001; Brockington, 1996).

#### 3.8.1 Definition of risk factors

Risk factors are those conditions or characteristics that increase the chances of a person developing a particular disorder compared with any person selected at random from the general population (Pope et al., 2000). Risk factors are not necessarily causal factors. Certain risk factors are associated with the onset of depression occurring at any time during

life. These include: having a parent or close relative with a mood disorder, experience of severe stress, low self-esteem, being female, and living in poverty (Covi, 1986). In this section, risk factors are grouped in the following manner:

- confirmed risk factors, with agreement from randomised controlled trials or approximately 75% of well-designed cohort studies (Pope et al., 2000);
- probable risk factors, needing further investigation, with agreement from 40% to 60% of peer-reviewed published studies (Pope et al., 2000);
- possible risk factors, needing further investigation, with either very little evidence or only equivocal findings available at present (Pope et al., 2000);
- possible protective factors (Pope et al.; 2000).

### 3.8.2 Confirmed risk factors

#### 3.8.2.1 Personal history of depression

Women with a history of psychopathology and psychological disturbance (especially previous episodes of depression and prenatal depression) have been found to be more vulnerable to the re-emergence of affective disorders during the postpartum period (Adams, 2003; Beck, 1996; Beck, 2001; Kumar & Robson, 1994; O'Hara & Swain, 1996; Saltzberg, 2003). A history of depression can also interact with other factors to increase the likelihood of postpartum depression, for instance with obstetric complications (Cooper & Murray, 1995).

#### 3.8.2.2 Stressful life events

There is a clinical observation that events of a stressful nature are more likely to precede the first, rather than subsequent, episodes of mood disorders (Brockington, 1996; Sadock & Sadock, 2003). Sadock and Sadock (2003) state that compelling data indicates that the life event most often associated with the development of depression is losing a parent before the age of 11. The environmental stressor most often associated with the onset of an

episode of depression is the loss of a spouse. Certain demographic variables are also proposed to be important precipitating factors in the onset of depression. Socio-economic factors, such as unemployment (persons out of work are three times more likely to report symptoms of an episode of major depression than those who are employed), income inequality, and poverty have all been linked to depression (Patel, Parlera, Coutinho, Fernandes & Man, 1998; Patel, Rodrigues & Desouza, 2001).

An association has been found between stressful life events and postpartum depression (Kumar & Robson, 1994; Beck, 2001; Hopkins et al., 1989). Considering that childbirth is a major life transition, it is proposed that an accumulation of stress at this time may place women at greater risk of developing depressive symptoms. Different types of stressful events have been implicated in the development of postpartum depression. These include: intimate relationship, housing, finances, unemployment, poverty, and bereavement (Johnstone, Boyce, Hickey, Morris-Yates & Harris, 2000; Reading & Reynolds, 2001; Zerkowitz & Milet, 1995).



#### 3.8.2.3 Intimate relationship

It seems that the quality of interpersonal relationships, particularly between a woman and her partner, plays an essential role in the causal pathway of depression (Adams, 2003; Beck, 2001; Kumar & Robson, 1984; Reading & Reynolds, 2001; Stowe & Nemerhoff, 1995). The evidence indicates that difficulties in intimate relationships are associated with postpartum depression, whether or not the distress preceded or follows the postpartum depression (Kumar & Robson, 1984; Westheimer & Lopater, 2002; Whiffen, 1988).

#### 3.8.2.4 Lack of support

Poor social support is one of the known causes involved in the development of postpartum depression (Adams, 2003; Beck, 2001; Westheimer & Lopater, 2002). The strong association of postpartum depression with lack of social support has been confirmed by over

60 studies (Beck, 2001). Lack of social support includes lack of positive support in relation to becoming pregnant, less partner support and less support from the mother's parents (Crockenberg & Leerkes, 2003; Troutman & Curtona &, 1991).

### 3.8.3 Probable risk factors

#### 3.8.3.1 Family history of psychopathology

Considerable research has reported a link between postpartum depression and a family history of affective disorders (Beck, 1996; Beck, 2001; O'Hara et al., 1990; O'Hara & Swain, 1996). It is argued that childbirth could act as a trigger for depression in women who are genetically vulnerable to the condition (O'Hara, 1997; Smit, 2002), as in general depression (Dalton & Holton, 1996; Stowe & Nemerhoff, 1995).

#### 3.8.3.2 Single parenthood

There is a general agreement in the literature on postpartum depression that women heading a lone parent family are at greater risk of developing depression than mothers with a partner (McLennan, Kotelchuck & Cho, 2001; Reading & Reynolds, 2001; Zerkowitz & Milet, 1995). Single parenthood may interact with other risk factors such as unemployment, financial constraints and lack of support to predict postpartum depression (O'Hara et al., 1984).

#### 3.8.3.3 Severe maternity blues

Although it has been hypothesised that maternity blues is related to the subsequent development of postpartum depression no hormonal basis for this association has been identified (O'Hara, 1997). Dysphoria in the first postpartum week has not consistently been found to predict later depression (Kumar & Robson, 1984).

#### 3.8.3.4 Personality characteristics

A number of personality styles have been suggested as vulnerability traits for developing depression, however, there are methodological problems associated with

identifying such traits and there is no unique personality style that has been found to predispose women to postpartum depression (Kumar & Robson, 1984). Potential depression prone personality traits for individual women that may be risk factors include: obsession, neuroticism, pessimism, external locus of control, and high interpersonal sensitivity (Pope et al., 2000).

#### 3.8.3.5 Negative cognitive style

Cognitive-behavioural models suggest depression is most likely to occur in individuals who view stressful events and circumstances in particular ways (Covi, 1986). A number of research studies suggest that negative cognitive style in women during the postpartum period increases cognitive vulnerability to depression, just as it is suggested to contribute to development of depression at any other time in the life span (Kumar & Robson, 1984).

#### 3.8.3.6 Birth experiences and obstetric complications

Research studies investigating the link between birth experiences and obstetrical complications have reported contradictory findings (Johnstone et al., 2000; O'Hara et al., 1990; Verdoux, Sutter, Glatigny-Dallay & Minisini, 2002). The discrepancies may be linked to the fact that sampling and the assessment methods vary from one study to another.

#### 3.8.3.7 Partner's levels of depression

A partner's mental illness or emotional difficulties may contribute or intensify women's postpartum psychological difficulties (Zelkowitz & Milet, 1996). More research is required to elucidate the relationship between postpartum depression and partner's depression following childbirth.

#### 3.8.3.8 Infant health, temperament and behaviour

Childcare stressors (problems with infant health, temperament, and behaviour) have been associated with postpartum depression. However, it is not always clear whether

increased infant-related stress precedes postpartum depression or is related to the depressed mother's perception of her infant (Armstrong, Van Haeringen, Dadda & Cash, 1998).

#### 3.8.3.9 Neurotransmitters

Variations in neurotransmitter receptors play a role in the pathophysiology of major mood disturbances and there is evidence that central nervous system serotonergic neurotransmission is altered in depression (Brockington, 1996; Sadock & Sadock, 2003; O'Hara, 1997; Smit, 2002).

To date, studies of various neuroregulations have not provided evidence distinguishing women with postpartum depression from non-depressed postpartum women (Brockington, 1996; Sadock & Sadock, 2003; O'Hara, 1997; Smit, 2002).

#### 3.8.4 Possible risk factors

##### 3.8.4.1 Breastfeeding

Studies on the relationship between postpartum depression and breastfeeding have produced ambiguous results (Stowe & Nemerhoff, 1995). It is not yet clear if the onset of depression precedes or follows cessation of breast-feeding or if there is any association between the two. Few clinical observations have led to the suggestion that a hormonal association between postpartum depression and breastfeeding may exist (Misri, Sinclair & Kuan, 1997). Other studies have produced results demonstrating no relation between breastfeeding and postpartum depression (Dalton & Holton, 1996).

##### 3.8.4.2 Thyroid dysfunction

A host of depressive symptoms such as 'low' mood, a lack of motivation, weight gain, anxiety and fatigue can be symptoms of thyroid dysfunction (Epperson, 1999). Approximately five percent of postpartum women have transient hypothyroidism, sometimes preceded by hyperthyroidism, during the first year postpartum (Epperson, 1999). Epperson suggests there is a link between thyroid dysfunction and the development of postpartum depression.

### 3.8.4.3 Hormonal changes

There are major changes in progesterone, oestrogen, cortisol, and beta-endorphin levels associated with pregnancy and the postpartum period (Dalton, 1980). During pregnancy the levels of oestrogen, progesterone, prolactin, B-endorphins, and cortisol rise significantly peaking near term (Hendrick & Altshuler, 1999; Smit, 2002). Immediately after birth, the levels of these hormones decrease due to the loss of the placenta (Dalton, 1980). Both these hormones continue to fall until they reach a point when they are below pre-pregnancy levels usually occurring two days post birth (Dalton, 1980). In the sixth week postpartum oestrogen and progesterone revert back to normal; however, in women who breastfeed the levels of oestrogen and progesterone only revert back at the end of breastfeeding, when raised levels of prolactin return to normal (Dalton, 1980).

The dramatic rise and decline of these hormones have been implicated as possible influences in the occurrence of postpartum depression (Smit, 2002). It has been hypothesised that some women may be genetically predisposed to greater biochemical sensitivity in their response to decreased hormone levels, rather than to the actual hormones themselves (Smit, 2002). At present, evidence for a direct correlation of hormonal changes with the onset of postpartum emotional disturbance is not available and better-controlled research studies are required to test these hypotheses.

### 3.8.4.4 Poor relationship with parents

Women experiencing depression postpartum are reported to have more difficulties in their interactions with their parents (Cox et al., 1993), poor relationships with their mothers (Kumar & Robson, 1984), and more negative perceptions of the amount of care they received from their own mothers and fathers in their childhood (Whiffen & Gotlib, 1992).

#### 3.8.4.5 Maternal age

Some authors have suggested that postpartum depression is slightly more frequent in women over 30 years of age and others suggest that postpartum depression is more frequent in women under 20 years old (Dalton & Holton, 1996; Troutman & Curtona, 1990). Age may be related to lifestyle factors, parity or affective history as a predictor of postpartum depression (Pope et al., 2000).

#### 3.8.4.6 Parity

No firm association has been found between parity and postpartum depression (Augusto, Kumar, Calheiros, Matos & Figueiredo, 1996; O'Hara & Zekoski, 1988). More research is needed for evidence as to whether this factor poses a risk to the development of depression in the puerperium.

#### 3.8.4.7 Premature delivery

An association between premature birth and postpartum depression has been reported in terms of women experiencing an adverse life stressor (Kumar & Robson, 1984), being from a lower socio-economic group (Reading & Reynolds, 2001), or experiencing a complicated labour (O'Hara & Zekoski, 1988). Better-designed research is needed in this area.

#### 3.8.4.8 Adjustment to parenthood

Numerous infant-related factors may be associated with difficulties adjusting to parenting. For example feeling ambivalent about the pregnancy or experiencing a lack of confidence about infant care (Kumar & Robson, 1984). These factors also include the dramatic social changes the mother may have had to undergo in the months following childbirth (Armstrong et al., 1998; Beck, 2001; Stowe & Nemerhoff, 1995).

#### 3.8.4.9 Cultural issues

In many non-western cultures (for example in China and India) motherhood marks a transitional period in a woman's life and provision is usually made for her to be treated

differently for a period of about six weeks (Moon-Park & Dimigen, 1995). During this time the mother may be excused from certain aspects of work and may be supported and helped with the childcare by women in the community (Bewley, 1999). Such rituals are claimed to increase self-esteem, decrease marital stress, and clarify social status (Templeton et al., 2003). In western cultures the postpartum period is not clearly structured by a specific period and rituals and special care for the new mother end soon after the birth (Moon Park & Dimigen, 1995; Templeton et al., 2003).

Initially, based on the work derived from ethnographic studies of childbirth, it was believed that there was little evidence of the occurrence of postpartum depression in non-western societies (Mauthner, 1998). Postpartum depression was, therefore, regarded as a culture-bound syndrome restricted to western industrialised societies possibly triggered by the absence of postpartum rituals (Mauthner, 1998). More recently however, the occurrence of postpartum is viewed as a worldwide phenomenon and not only restricted to western countries (Dalton & Holton, 1996; Moon Park & Dimigen, 1995; Stowe & Nemerhoff, 1995).

The results of cross-cultural comparison studies are equivocal. Postpartum depression ratings were compared for Korean and Scottish mothers (Moon-Park & Dimigen, 1995). Scottish BDI (Beck et al., 1979) scores were found to be significantly lower than Korean BDI (Beck et al., 1979) scores, with Korean women scoring significantly higher on somatic items. Another comparison of western and Asian women demonstrated significantly different EPDS scores (Hearn, Iliff & Jones, 1998) with Asian women four times more likely to have high scores than western women, leading the authors to propose women from ethnic minorities may be at a higher risk of developing postpartum depression.

### 3.8.5 Protective factors

Possible protective factors in the development of postpartum depression include being optimistic and having positive self-esteem (Goldstein, 1994), being in a stable and supportive

intimate relationship, having a secure and dependable social support structure (Crockenberg & Leerkes, 2003) and having realistic expectations and information about pregnancy, labour and delivery and parenting (Mauthner, 1998).

### 3.9 Measures of postpartum depression

The section on measures of postpartum depression outlines issues of concern in assessment of depression during the postpartum period. Different types of measures are reviewed including standardised interviews, self-report measures and screening questionnaires designed to assess postpartum depression. There is also a section on assessing postpartum depression in different cultures.

#### 3.9.1 Issues in assessment of postpartum depression

##### 3.9.1.1 Construct of depression in measurement scales

In contrast to traditional diagnostic assessments, depression may also be defined based on the number and the severity of symptoms that are endorsed on a questionnaire, such as the Edinburgh Postnatal Depression Scale (EPDS) (Cox, Holden & Sagovsky, 1987), or the BDI (Beck et al., 1961; Beck et al., 1979; Beck et al., 1988). Women are defined as depressed if they exceed a threshold, such as 12/13 on the EPDS (Cox et al., 1987). Even though women who are classified as depressed on the basis of a self-report measure may not meet criteria for syndromal depression according to the DSM-IV-TR criteria, they often experience significant mental and emotional distress (O'Hara & Swain, 1996).

##### 3.9.1.2 Overlap of depressive symptoms and postpartum events

The methodology and measuring instruments used complicate the debate on whether postpartum depression is distinct from general depression. Since some researchers have argued there is no difference in postpartum depression and general depression at other times in life, the measuring instruments used to measure clinical depression and depressive symptoms in the general population are also used in postpartum samples.

Certain researchers have commented on the problems with the use of instruments, such as the BDI (Beck et al., 1961; Beck et al., 1979) (which has been one of the most frequently used general depression instruments in postpartum depression research), that were not designed specifically for use with individuals in the postpartum period, and therefore includes somatic items such as disturbed sleep, loss of sexual interest, fatigue, weight changes, and concentration difficulties, also experienced by women who are not depressed after childbirth (Nicolson, 1998; Smit, 2002; Stowe & Nerhoff, 1995). Dudley, Roy, Kelk, and Bernard (2001) state that inclusion of these items may result in the lack of specificity (nondepressed women are misdiagnosed as depressed) that has been found in different rating scales. This can create an overestimation of the frequency of mental disorders among new mothers (Brockington, 1996).

### 3.9.2 Methodological problems with postpartum depression studies

#### 3.9.2.1 Sample bias

Many studies only include western primiparous, married or cohabiting women who are well educated (for example O'Hara et al., 1990). This limits the conclusions drawn from these studies and the results cannot be generalised to other populations.

#### 3.9.2.2 Control groups

In the literature on postpartum depression there is a distinct lack of the use of control groups in both cross-sectional and longitudinal designs (Smit, 2002). When control groups have been employed as part of the study, they have not been followed prospectively or assessed on depressive symptomatology on more than one occasion (O'Hara & Zekoski, 1988; Smit, 2002).

Control group subjects have generally been recruited by asking respondents to nominate an acquaintance who did not have children (for example O'Hara et al., 1990;

Troutman & Cutrona, 1990). Pope et al. (2000) states that this manner of recruitment results in an unrepresentative control group.

### 3.9.2.3 Small sample size

The size of the sample determines the confidence a researcher has in estimating the prevalence of depression and depressive symptomatology (O'Hara & Zekoski, 1988). In small samples, small changes in the number of recorded cases of postpartum depression will have relatively greater impact on prevalence estimates than in studies with large subject numbers. Employing a small number of subjects limits the possible conclusions that could be drawn from the results. Larger sample sizes are required to minimise potential error in measurement (Graziano & Raulin, 2000).

### 3.9.2.4 Timing of assessments: Retrospective versus prospective designs

Prospective designs refer to research studies that collect data at the time of the event (shortly after birth) while retrospective data refers to research studies that collect data at some point after the event (Smit, 2002). The advantage of prospective designs is that subjects are more likely to report current feelings and events accurately when compared to past emotions and events (O'Hara & Zekoski, 1988). In retrospective designs (often used when investigating psychosocial variables) the participant's current mood state can create potential bias and, thus, complicate evaluation of results. For example, someone who is currently depressed is more likely to interpret the past in negative terms compared to when they are in more positive mood states (O'Hara & Zekoski, 1988; Smit, 2002).

### 3.9.2.5 Lack of standardized measures

The lack of consensus on the definition of postpartum depression has resulted in a wide array of experimental designs employing different types of assessment measures (standardised interviews or self-report scales), variable cut-off scores and different times in which measurements are recorded (single or multiple assessments) (Pope et al., 2000).

Most rating scales predate the move towards increased standardisation of diagnostic criteria devised by the APA and hence have a heterogeneous approach to measuring depression (Lochner, 2002).

### 3.9.3 Standardised interviews

A number of standardised interviews are available for establishing a diagnosis of depression in the general population that are also used for assessing depression in postpartum samples. These include the SADS, the SCID (Cooper et al., 1999; Zelkowitz & Milet, 1995), the SPI (Cooper & Murray, 1995; Cox et al., 1993; Kumar & Robson, 1984; Murray & Carrothers, 1990) and the PSE.

### 3.9.4 Self-report measures

#### 3.9.4.1 The Edinburgh Postnatal Depression Scale

The Edinburgh Postnatal Depression Scale (EPDS) was developed with the intention of providing a scale that excluded somatic symptoms that also occur in the postpartum period as well as items that focus on physical discomfort (Cox et al., 1987). The EPDS is a 10-item self-report scale (Murray & Carrothers, 1990). Five items measure dysphoric mood, two items measure anxiety and the last three measure feelings of guilt, suicidal thoughts, and feeling unable to cope. Each item is scored on a four-point scale (range: 0-3), the minimum and the maximum total scores being 0 and 30 respectively. The scale takes less than five minutes to complete and rates the intensity of depressive symptoms present within the previous seven days (Cox et al., 1993). The EPDS has demonstrated high reliability and specificity as an indicator of significant depressive symptomatology when used with the recommended cut-off score of over 12 in the postpartum period (Cox et al., 1987). A score above 12 indicates the likelihood of depression, but does not provide a measure of severity. The EPDS scores should not be interpreted as indicating diagnosis in either clinical settings or for research purposes (Cox et al., 1993).

#### 3.9.4.2 Beck Depression Inventory

The BDI (Beck et al., 1961) has frequently been used as a measure of depressive symptoms in a postpartum sample (Beck, 2001). However, the sensitivity and specificity of this measure has been questioned because of the overlap between depressive symptoms and normal physiological changes occurring in the puerperium (Hopkins et al., 1989; O'Hara et al., 1990).

#### 3.9.4.3 Beck Depression Inventory II

The BDI-II is a recent revision of the BDI (Beck et al., 1961), which has been used extensively in postpartum depression research (Beck & Gable 2001). The symptom content of the BDI-II was revised to correspond to the DSM-IV-TR (APA, 2000) for depressive disorders (Beck & Gable, 2001). The BDI-II still consists of 21 items, but the symptoms of weight loss, body image change, work difficulty and somatic preoccupation were deleted and replaced by four symptoms of agitation, worthlessness, concentration difficulty, and loss of energy (Beck & Gable, 2001). The modified items allow for greater specification and this may improve measurement of postpartum depressive symptoms.

#### 3.9.4.4 General Health Questionnaire

Different versions of the GHQ have been employed to detect depression in the postpartum period, including the GHQ-60 (Cooper et al., 1988), the GHQ-30 (Kumar & Robson, 1984), and the GHQ-28 (Cox et al., 1993). The GHQ has been noted to produce inflated scores when used in a sample of postpartum women. Researchers (Kumar & Robson, 1984) suggest using a slightly modified version of the GHQ-30 (removing two questions pertaining to disturbed sleep and getting out of the house) and raising the cut-off to over six to improve the GHQ as a measure of depressive symptoms in the postpartum period.

#### 3.9.4.5 More self-report measures

Other self-report questionnaires used in postpartum samples include the ZUNG, the Hospital and Anxiety Depression Scale (HAD-D), the Pitt Depression Scale and the CES-D (Pope et al., 2000).

#### 3.9.5 Assessing and detecting postpartum depression cross-culturally

The EPDS has been validated for many non-western countries. Augusto et al. (1996) used the EPDS, in its Portuguese version, with a sample of postpartum women and nonpostpartum controls. The mean score on the EPDS was 7.2 (SD = 4.7; range 0- 20) and the distribution of the scores for the whole sample of 352 postpartum subjects was found to be typical of sample studies in the United Kingdom (Murray & Carrothers, 1990), and the correlations of all individual items were all highly significant ( $p < 0.001$  in all cases). This study confirms the usefulness of screening scales such as the EPDS for the detection of depression and dysphoria in community samples of subjects in a Portuguese setting. The point prevalence rate for depression as estimated by the EPDS (criterion  $> 13$ ) was similar to reported rates in other countries.

However, when translated versions of the EPDS are used, it is suggested that the scores be cautiously interpreted as different cut-off points may be required as each version is validated within a specific cultural or language group (Lawrie et al., 1998).

The appropriateness of depression as a construct in non-western contexts has been questioned in the medical and psychological literature (Swartz, 1998). A related concern is whether the same construct is measured in different cultures by instruments such as the EPDS. Lawrie et al. (1998) explored the construct validity of the EPDS in an impoverished South African community. Their results provide support for the construct validity of the interviewer-administered isiXhosa version of the EPDS. The internal consistency analysis further indicated that reliable scores were obtained with the isiXhosa version of the EPDS.

Based on these results the authors concluded that self-report measures, such as the EPDS, do measure the same constructs when transported to another culture (Lawrie et al., 1998).

In a study specifically designed to assess the utility of rating scales developed in non-puerperal contexts, it was found that the BDI (Beck et al., 1961) was useful for detecting postpartum depression among recently delivered Chinese women (Lee, Yip, Chiu, Leung & Chung, 2001). Lee et al. assessed the psychometric performance of the BDI in detecting postpartum depression using the Receiver Operating Curves. Results indicated that the Chinese version of the BDI (Beck et al., 1961) – which had been vigorously validated and the psychometric properties compared to those of the original version – had satisfactory sensitivity and positive predictive value in detecting postpartum depression. The researchers state that this is the first study in which the BDI has been found to be applicable in postpartum depression. Hence, they warn, that before generalizing these findings, further replications are warranted. The results of this study lend support to the notion that generic rating scales developed in nonpostpartum contexts are applicable in screening for depressive symptomatology postpartum cross-culturally (Lee et al., 2001).

### 3.10 Prevalence of postpartum depression

#### 3.10.1 General

The estimated prevalence rates of clinical depression and depressive symptoms occurring postpartum in developed and developing countries are presented in the following two sections. The studies presented in Tables 3 and 4 have been assembled on the basis of a review of the literature. The studies cover a variety of epidemiological instruments and include health clinic, hospital inpatient and outpatient, community and student postpartum samples.

##### 3.10.1.1 Prevalence of postpartum depression: Developed countries

###### Table 3

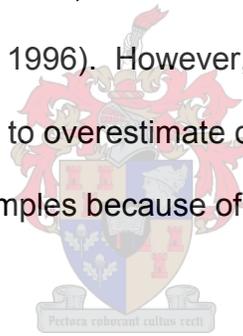
*Postpartum Depression Prevalence Estimates in Developed Countries*

	Country	Timing	<u>N</u>	Measure	Prevalence (%)
<b>Study</b>					
Boyce et al., 1993	Australia	6 months	103	DSM-III-R	8.7
Campbell & Cohn, 1991	America	8 weeks	103	SADS	9.3,
			3	CES-D	13
Cooper et al., 1988	United Kingdom	3 months	243	PSE	8.7
		6 months	107	PSE	8.8
		12 months	225	PSE	5.2
Cooper et al., 1993	United Kingdom	3 months	483	GHQ	18.4
		3 months		PSE	5.2
Cox et al., 1982	United Kingdom	3-5 months	105	SPI	Major: 13 Minor: 16
Cox et al., 1993	United Kingdom	5 months	243	EPDS	9.1
Hall et al., 1996	America	1-2 months	738	CES-D	42
O'Hara et al., 1984	America	6 months	99	SADS	12
Hopkins et al., 1989	America	6 weeks	49	BDI 6w	90%
		12 weeks		SADS 12w	51%
Kumar & Robson, 1984	United Kingdom	12 weeks	119	SPI	14
Lane et al., 1997	Ireland	6 weeks	289	EPDS	11
Murray & Carrothers,	United		646	EPDS RDC	8.6

1990	Kingdom				
Troutman & Cutrona,	America	6 weeks	128	SADS	26
1990		12 months		SADS	20

Table 3 summarises the evidence for the prevalence of postpartum depression in developed countries. All the samples are derived from antenatal clinics and hospitals in urban areas.

The majority of studies presented investigated the rate of postpartum depression in married, English speaking, middle-class women. The only postpartum epidemiological study using a sample of low-income, unemployed predominantly young and single African-American mothers reported a prevalence rate of 42%, as assessed by the CES-D one to two months after childbirth (Hall, Kotch & Browne, 1996). However, this result needs to be interpreted with caution as the CES-D is reported to overestimate dysphoria and may be unsuitable for use with pregnant and postpartum samples because of the emphasis on somatic complaints (Pope et al., 2000).



The prevalence rates for clinically diagnosed depression and depressive symptomatology reported in Table 3 range from 5.2% (as measured by the PSE at three months postpartum) (Boyce, Stubbs & Todd, 1993) to a high of 51% (as assessed by the SADS at 12 weeks postpartum) (Hopkins et al., 1989). The lower prevalence rates are generally from assessments employing diagnostic criteria, such as the PSE, for cases of major and minor depression.

The highest prevalence rate in Table 3 was obtained from a prospective study of married, white, middle-class women in the United States. Hopkins et al. (1989) initially screened 49 participants at six weeks postpartum with the BDI (Beck et al., 1961) during routine postpartum visits. Forty-four women with higher scores (above 10) were interviewed prior to 12 weeks postpartum using the SADS to confirm diagnostic status. Of those

interviewed, 25 (51%) women met diagnostic criteria for major ( $N = 17$ ) or minor ( $N = 8$ ) depression at approximately two to three months postpartum.

The reported estimates for the prevalence of postpartum depression have varied greatly depending on the design of the studies, the recruited sample size, the timing of assessments and the use of different diagnostic criteria or self-report rating scales (Pope et al., 2000).

It is generally accepted that postpartum depression affects between 10% and 20% of all childbearing women and that cases of minor depression and depressive symptomatology are probably unrecognised and undiagnosed as the distress experienced may not be severe enough to meet criteria for major depression (Amankwaa, 2003; Brockington, 1996; Cox, 1988; Lawrie et al., 1998; Lee, Yip, Chan, Tsui, Wong & Chung, 2003; Najman et al., 2000; O'Hara & Zekoski, 1988; Reading & Reynolds, 2001; Saltzberg, 2003; Spangenberg & Pieters, 1991; Whiffen, 1992).

### 3.10.1.2 Prevalence of postpartum depression: Developing countries

Table 4

#### *Postpartum Depression Prevalence Estimates in Developing Countries*

	Country	<u>N</u>	Measure	Prevalence (%)
Study				
Aderibigbe et al., 1993	Nigeria	145	SCID	Major: 5.5 Minor: 6.2
Areias et al., 1996	Portugal	359	CIS-R 10w	Incidence: 11 Prevalence: 19.8
Chandran et al., 2002	India	162	GHQ 6-8w	14
Cooper et al. 1999	South Africa	147	SCID 2m	Major: 34.7

Ghubash & Abou-Saleh, 1997	United Arab Emirates	95	SRQ day 2 EPDS 7days PSE 8w PSE 30 w	14.5 17.8 15.8 4.2
Lawrie et al., 1998	South Africa	103	EPDS 6 w	Incidence: 24.5
Lee et al., 2001	China	108	RDC 2-3m	11.2
Moon Park & Dimigen, 1995	Korea	105	BDI 6-10 w	M = 11.22
Nhiwatiwa et al., 1998	Zimbabwe	500	SSQ	16
Patel et al., 2002	India	270 / 235	EPDS 6-8w EPDS 6m	23 22
Spangenberg & Pieters, 1991	South Africa	81	BDI (2w-6m)	Incidence: 27.2

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Epidemiological evidence suggests that there is a high rate of depression and depressive symptomatology in the general population in developing countries (Abbas & Broadhead, 1997), especially in women in conditions of socio-economic hardship. It is likely that a similarly high rate would be found in puerperal samples (Cooper et al., 1999).

In Table 4, the prevalence estimates of clinical depression and depressive symptomatology range from 4.2% (as assessed by the PSE at 30 weeks postpartum) (Ghubash & Abou-Saleh, 1997) to 34.7% (as assessed by the SCID two months after childbirth) (Cooper et al., 1999).

A recent well-designed study of an urban township in Cape Town, South Africa (Cooper et al., 1999) reported high prevalence (34.7%) and incidence (27.2%) rates of postpartum depression. The rate of postpartum depression detected in this study was three

times higher than the rate reported in western samples (for example Cooper et al., 1988; Cox et al., 1993).

Lawrie et al. (1998) detected a similar incidence rate (24.5%) in a sample of 104 women. The participants were assessed at six weeks postpartum with the EPDS, which was validated against DSM-IV (APA, 1994) criteria for depression. The authors state that the incidence rate of postpartum depression is quite high, possibly reflecting the socially disadvantaged characteristics of their sample (Lawrie et al., 1998). The authors do warn that caution is required when interpreting their results, due to the small sample size and the cultural composition as the urban sample does not make these results applicable to all South African women, particularly rural women. Despite the study's limitations the authors conclude that, "It is evident from this study and an earlier study that postpartum depression is at least as common in our communities as in developed countries" (p. 1343).

The rates reported by Cooper et al. (1999) and Lawrie et al. (1998) appear slightly higher than those reported in relatively recent population and primary care studies in low-income countries (Patel, Rodrigues & Desouza, 2002). Patel et al. (2002) report a 23% prevalence rate of depressive symptoms in mothers who recently gave birth in Goa, India. The participants were assessed by the Konkani version of the EPDS at six to eight weeks after childbirth. More than half of the patients remained ill at six months after delivery. A total of 235 (87%) of the 270 mothers were re-examined at six months postpartum, of these 51 (22%) of the mothers were depressed. Thirty-four mothers (67%) were considered to be chronically depressed. Thus, 14% (34 of 235) had chronic levels of depressive symptomatology in the postpartum period. Patel et al. conclude that postpartum depression is a common mental illness in India.

In another study conducted in India Chandran, Tharyan, Muliylil, and Abraham (2002) reported an incidence of 11% (95% CI 7.1-14.9) at three months postpartum. The authors

concluded that the prevalence and incidence rates of depressive symptomatology observed in a rural Indian community sample indicate that postpartum depression is a significant public health concern in terms of frequency.

Chandran et al.'s (2002) result is similar to the rates of 7.7% to 14% assessed 9-12 weeks postpartum in the studies by O'Hara et al. (1984), Kumar and Robson (1984) and Cooper et al. (1988) in developed countries. When considering that rates of postpartum depression in developed societies are reported to range from 10% to 20% (Kumar & Robson, 1984; O'Hara & Swain, 1996), the rates reported for developing societies seem similar. However, in comparison with prevalence rates found in postpartum samples in developing countries, the estimated point prevalence in South African studies is about five percent higher (Cooper et al., 1999).

A limitation with many epidemiological studies on postpartum depression is that no assessments were made on the rate of nonpostpartum depression.

### 3.10.2 Comparing prevalence between childbearing and non-childbearing populations

The medical model hypothesises women are more likely to develop psychological or psychiatric complications in the first postpartum year than at other times during their lives. However, there has been a relative absence of studies that would enable researchers to test this proposition. Controlled comparative studies are needed to demonstrate whether episodes of depression and depressive symptoms are more common after childbirth than at other times during the life cycle. Clearly demonstrating that childbirth is an event that increases women's risk for depression and depressive symptomatology would create opportunities for researchers to test etiological models (Brockington & Cox-Roper, 1988).

Evidence regarding the increased risk for developing depression and depressive symptoms after childbirth is mixed. Initial research results suggested that the prevalence of postpartum depression was higher than the prevalence of depression for non-childbearing

women (Kumar & Robson, 1984; Cox et al., 1993). Subsequent evidence from several studies reports no significant differences in the prevalence of minor, major or symptoms of depression between puerperal and non-puerperal cohorts (Cooper et al., 1988; Cox et al., 1993; O'Hara et al., 1990; Troutman & Cutrona, 1990; Whiffen & Gotlib, 1992).

Researchers have attended to this problem in two ways. Firstly, postpartum depression and depressive symptom rates have been compared with rates of depression and depressive symptomatology derived from non-childbearing community samples. A second method is the comparison of depression and depressive symptom rates in a sample of postpartum women with a matched control sample of nonchildbearing women.

#### 3.10.2.1 Comparison with community samples

One of the first studies to compare depression in a postpartum sample with nonpostpartum participants was conducted in England by researchers Cooper et al. in 1988. Rates of depression in 483 women living in Oxford were examined at three months ( $N = 243$ ), six months ( $N = 107$ ), and 12 months ( $N = 225$ ) postpartum (Cooper et al., 1988). Women that scored above 12 on the GHQ were interviewed with the PSE. The authors detected an estimated point prevalence of 8.7% at three months, 8.8% at six months, and 5.2% at 12 months. The estimated annual incidence was reported as 15% for their sample of childbearing women.

Cooper et al. (1988) compared this data to 313 non-childbearing women in Edinburgh who had been recruited for a previous study. An estimate of 12.6% annual incidence of depression was originally calculated for the overall sample of 576 women aged 18 to 65. Some of these women were outside the normal childbearing age range and were not well matched with the Oxford childbearing group. The authors found no significant difference in PSE cases of postpartum depression at three, six and 12 months postpartum compared to

the single measure of depression in the general female population sample (Cooper et al., 1988).

In a more recent English study, with the use of a semi-structured interview administered at three, nine and 15 months postpartum, Nott (1987) found the prevalence rate for new cases of depression to be 18.5%, 28% and 31% respectively. Incidence rates of postpartum depression were compared with depression rates (26%) obtained from a previous study consisting of non-childbearing women, aged 20-60 derived from the general population (Hobbs et al., 1983). The comparisons revealed few differences in depression rates between the two groups.

In developing countries a higher rate of depression or depressive symptoms occurring in the puerperium has not been detected either. In the study conducted by Patel et al. (2002) in India, symptoms of depression were detected in 23% of their sample two months after childbirth. Patel and colleagues compared these rates with rates of depressive symptoms reported in population and primary care studies from Zimbabwe, Chile and Brazil (Patel et al., 1999). In these countries the prevalence of depressive symptoms was also found to be relatively high. From these findings, the researchers concluded that the period after childbirth does not present a time of increased vulnerability to develop symptoms of depression depressive disorders (Patel et al., 2002).

Comparison studies employing previous epidemiological surveys are problematic for two reasons: different criteria may be used across studies, and the characteristics of the populations selected may be different (O'Hara et al., 1990). Thus, caution is needed when comparing depression and depressive symptom rates obtained from other studies. More evidence is needed before it can be ascertained that the postpartum period is a time of increased risk for depression and depressive symptomatology.

### 3.10.2.2 Comparison with controlled groups

Few studies have employed comparison control groups and followed them prospectively, assessing depression or depressive symptoms on more than one occasion. Presently, there have been only five studies quantifying the importance of childbirth as a risk factor for the onset of depressive symptoms through the use of prospectively assessing depression rates in controlled samples.

In an early British study, 99 women and 77 of their partners were compared with a control group of 27 nulliparous women working in a local factory or hospital (Rees & Lutkins, 1977). All participants were screened for depressive symptoms with the BDI (Beck et al., 1961) over a 12-month period (the first 12 months postpartum). Using the advised cut-off score of above 10 on the BDI, the incidence of postpartum depression was found to be 30% (10 % moderate) for mothers. This was compared to the incidence of 11% for control women and the incidence of postpartum depressive symptoms in fathers of 13% (2% moderate). Based on their results, the authors suggested postpartum depression is more prevalent than nonpostpartum depression (Rees & Lutkins, 1977). However, as there was a poor description of the research methodology in this publication, and the control group was not well matched (differing in age and parity), the results must be viewed with care (Pope et al., 2000).

In the United States, Troutman and Cutrona (1990) compared the prevalence of depression in 128 childbearing and non-childbearing adolescents aged 14 to 18. The acquaintance control method of recruitment was used. Pregnant adolescents were recruited from child health clinics, hospitals and education programs. The majority of the families were of lower socio-economic status. The childbearing sample was assessed with the SADS and RDC during the second and third trimester and again at six weeks and 12 months postpartum. The acquaintance control group was assessed at the same time with the same measures as the childbearing group. No significant differences were found in major and

minor depressive episodes between the childbearing and non-childbearing comparison subjects at six weeks (total prevalence 26% childbearing and 15% non-childbearing) or 12 months (total prevalence 20% childbearing and 19% non-childbearing) postpartum. However, the difference between groups for six-week prevalence of minor depression (20% childbearing group and 10% controls) approached significance (Troutman & Cutrona, 1990).

A controlled American study, prospective by design, compared 182 childbearing women who were recruited in the second trimester of pregnancy with 189 matched, non-childbearing women recruited by the acquaintance control method (O'Hara et al., 1990). Subjects were assessed with a semi-structured interview (based on the SADS), the BDI (Beck et al., 1961) and the Symptom Checklist (SCL-90-R) during pregnancy and at three, six and nine weeks postpartum. The authors did not find a significant difference in the diagnosis of depression for childbearing women at nine weeks postpartum (10%, 8% major, 11% minor) and non-childbearing women (7.8%, 6% major, 8% minor). However, a significant difference was found between the groups for BDI depressive symptoms and SCL-90-R depression scores, with the childbearing women reporting significantly more depression during pregnancy and three weeks postpartum. Based on these findings O'Hara et al. (1990) propose the postpartum period is not characterised by an increased risk for nonpsychotic depression.

In Scotland, researchers Cox et al. (1993) recruited women from antenatal clinics and through the Edinburgh birth register. The childbearing group was matched with women recruited from general practice registers who were aged between 16 and 45 years of age and were neither pregnant nor had had a child in the previous 12 months. The final sample consisted of 232 matched pairs. One hundred and thirty-seven interviews (using the SPI) were completed out of 147 (96 high and 51 low EPDS scores). In comparison, 156 women were selected for SPI assessment (106 high and 50 low EPDS scores) and 140 interviews were completed. With attrition, this eventually left 129 postpartum women and 136 control

women in the final sample. The authors report that these groups were satisfactorily matched for marital status, number of children and social class. No significant differences were found between groups for six months point prevalence of RDC diagnosis of depression, with 9.1% childbearing women ( $n = 21$ , major 3.5%, minor 5.6%) and 8.2% non-childbearing control women ( $n = 19$ , major, 3.5%, minor 4%) meeting diagnostic criteria. Similarly, the six-month incidence was reported as 13.8% (6.5% major, 7.3% minor) for postpartum women and 13.4% (5.6% major, 7.8% minor) for control women. For 16 (76%) postpartum women, the depression was stated as having an onset less than five weeks after delivery, compared with only five (26%) control women in the same time span. Based on these results the authors propose the risk of depression is increased within the first month after delivery, suggesting that childbirth and its immediate sequelae are important causal factors for unipolar postpartum depression (Cox et al. 1993; Pope et al., 2000).

Augusto et al. (1996) compared the point prevalence of depressive symptomatology measured approximately three months postpartum in a sample of Portuguese women ( $N = 352$ ) with a matched group of non-childbearing women. The last 118 childbearing women recruited were asked to nominate potential controls – close friends who were within two years of their own age and had not given birth in the past two years. On average the controls were a couple of years older and had fewer children than the main sample, but there was no difference in terms of social class. Depressive symptomatology was measured with the EPDS and the SRDS between nine and 20 weeks postpartum, with a mean of 15 weeks postpartum.

The point prevalence, as assessed by the EPDS, was found to be 13% in the full childbearing sample, 16% in the postpartum comparison group and 7.6% in non-childbearing controls. Thus, the risk of depressive symptoms was found to be more than double in the postpartum sample compared to the matched non-childbearing sample. More postpartum

women (6.8%) also had significantly high depression scores compared with no women having high scores in the control group (Augusto et al., 1996). In contrast to previous studies, Augusto et al. found that postpartum women had higher rates of severe depressive symptomatology than the non-childbearing controls. However, this study has raised some methodological questions with regard to the control group providing a fair comparison (Pope et al., 2000)

Although comparison studies do pose methodological difficulties (O'Hara & Zekoski, 1988), the results from the studies cited above indicate that depression and depressive symptom rates of postpartum women might not be higher than those in community and non-childbearing populations. Results of this nature do not provide support for the hypothesis that women are at an increased risk to develop psychological complications in the first postpartum year.

### 3.10.3 Longitudinal designs

There are several large prospective cohort studies providing prevalence of depression at selected points in time in the postpartum period. However, few of these large studies use diagnostic criteria to determine the incidence of new cases of depression over the entire postpartum period. Ideally, longitudinal measures of depression need to be assessed so that the incidence in the postpartum period may be accurately observed. For researchers who study postpartum depression the distinction, between incidence of a disorder and prevalence of a disorder, is important because of the need to distinguish between depressive episodes that arise before delivery and persist into the puerperium and those episodes that arise during the puerperium (O'Hara & Zekoski, 1988).

In Britain Cox et al. (1982) conducted a prospective longitudinal study with 105 women using the SPI at 35 weeks gestation, 10 days postpartum and three to five months

postpartum. Only 4 % of women were depressed during pregnancy, compared with 30% incidence of depression (13% major, 16% minor) by the five months postpartum assessment.

Examples of longitudinal studies conducted in developing countries include those conducted by Chandran et al. (2002) in a rural community in India; Patel et al. (2002) in Goa, India; and Cooper et al. (1999) in a peri-urban settlement in South Africa. The aim of these studies was to describe the natural history of depression and to determine the incidence of depression and depressive symptoms in mothers who recently gave birth in low-income countries.

Chandran et al. (2002) assessed 359 women in the last trimester of pregnancy and 6-12 weeks after delivery for depression. The incidence of postpartum depression was detected to be 11%. The overall prevalence of depression rose from 16% during pregnancy to 19.8% in the postpartum period. The researchers concluded depression occurred as frequently during late pregnancy and after delivery as in developed countries.

Patel et al. (2002) assessed a sample of Indian pregnant women during the third trimester of pregnancy, six to eight weeks and six months after childbirth. They found depressive disorders in 23% of the participants at the first postpartum assessment. Of these, 78% experienced clinically substantial psychological morbidity during the antenatal period. More than one-half of the patients experienced depression at six months after delivery. Based on their findings, Patel et al. concluded that postpartum depression is a common mental illness in Goa, but it is usually a consequence of preexisting antenatal morbidity.

In South Africa, Cooper et al. (1999) detected a 34.7% prevalence rate of major depression in a sample of low-income mothers, 26 (18% of the sample) women experienced an onset of depression since childbirth and in 25 (17% of the sample) mothers the onset occurred antenatally.

Research was also conducted by the Women's Mental Health Research Project at the University of Stellenbosch to determine whether low-income women in a rural community in South Africa experience an increase in depressive symptomatology during the first six months postpartum as compared to the existence of depressive symptomatology prepartum (Storkey, 2005).

More longitudinal designs are needed to document the course of postpartum depression and to differentiate between antenatal depression, maternity blues, and postpartum depression.

### 3.11 Summary of literature review

The literature review was introduced with a brief discussion of different definitions of depression. It was stated that the present study will focus on depression as a psychological disorder. The syndrome of depression is classified as a mood disorder in standard diagnostic systems, for example the DSM-IV-TR (APA, 2000), with a mood disorder referring to a sustained emotional state characterised by pathological mood. The different mood disorders described in the DSM-IV-TR were discussed.

In the discussion of measures of depression as a clinical construct different ways of measuring depression were focused on: those include clinical interviews using DSM-III-R or DSM-IV-TR criteria for illness, or self-report questionnaires measuring symptoms and mood rather than illness and disorder.

As the present study is positioned within a medical framework, the assumption maintained is biology of depression is universal and cultural beliefs and values influence the expression of the disorder. This disorder can be detected with western psychiatric instruments, including clinical interviews and self-report questionnaires. However, cultural distinctive behaviour and language problems can be possible threats to validity in the transportation of psychiatric instruments based on standard western diagnostic systems.

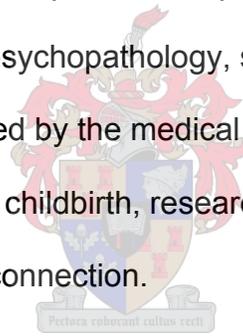
Following the medical model, the present study assumes standard depression instruments accurately measure depressive symptomatology in non-western populations.

Community prevalence studies in developed countries indicated approximately 5% of the population satisfy the PSE or DSM-III criteria for defined psychiatric depression in a six-month period (Paykel, 1991). The prevalence rate of depression and depressive symptoms in developed countries was observed to range from 6% to a high of 30%. The prevalence rate of depression and depressive symptoms in developing countries was observed to range from 7.3% to a high of 52%. Rates of depression are much higher when assessed by self-report measures, as self-report measures report on the presence of depressive symptomatology. Although the number of studies conducted in developing countries, and Africa in particular, are limited, based on the studies presented it appears that clinical depression and depressive symptoms may be more prevalent in developing nations than developed nations.

Postpartum depression is the most prevalent mood disorder associated with childbirth and refers to women who meet diagnostic criteria for major and minor symptoms of depression during the first postpartum year. There appears to be a similar symptom pattern to depression occurring at other stages of life. However, there may be differences in the number, type, and severity of depressive symptoms occurring in the postpartum period. More research is required to ascertain whether previous researchers are correct in suggesting that postpartum depression has an atypical presentation and is milder in severity. Many women experience significant somatic and cognitive-affective changes following childbirth, but may not be clinically depressed. These changes may be part of normal postpartum adjustment.

A multifactor approach in understanding the causes and correlated factors of postpartum depression is required. Risk factors increase the likelihood of developing postpartum depression, they are not necessarily causal factors. Confirmed risk factors include a personal history of depression, depression during pregnancy, difficulties in intimate

relationships, lack of support and stressful life events. Probable risk factors include a family history of psychopathology, single parenthood, severe maternity blues, negative cognitive style, birth experiences and obstetric complications, partner's levels of depression, infant health, temperament and behavioural problems and neurotransmitters. Possible risk factors include thyroid dysfunction, hormonal changes, premature delivery, breastfeeding, and poor relationship with maternal parents, maternal age, parity, cultural issues and difficulty adjusting to parenthood. Possible protective factors include optimism and self-esteem, having a good marital relationship, increase availability of social support and adequate preparation for parenthood. In summary, the factors most associated with the development of postpartum depression are the same as in the development of depression occurring at other times in the life cycle, such as a family history of psychopathology, stressful life events, and lack of social support. Despite the theories proposed by the medical model associating postpartum depression with biological changes of childbirth, research has been unable to provide substantial scientific evidence of the connection.



Different assessment methods have been used to assess postpartum depression in research studies. It is difficult to compare research results because of the varying methods of assessment and cut-off criteria, the timing of assessments, and the duration of repeat assessments. Some measures for use with general depression (for example the BDI (Beck et al., 1961) and the GHQ) may be unreliable in postpartum samples due to the similarity between the normal changes occurring postpartum and the depressive symptomatology. Measures of depression, used with postpartum samples, developed in western countries have been found to be useful for assessing postpartum depression in non-western countries.

Postpartum depression has been reported to affect between 12% to 15% of childbearing women in developed countries, the prevalence varying from 3 % to 30% depending on the method and time of assessment. In a review of epidemiological studies on

the prevalence of postpartum depression in developing countries, the point prevalence ranged from 11.2% to a high 34.7%. There appears to be a similar prevalence in developed and developing countries. Rates of postpartum depression do not appear to be significantly higher than those of depression in the general population, thus, it is questionable whether women really experience a higher rate of depression during early motherhood. However, more studies need to be conducted, especially in developing countries, before any assumptions are made.

### 3.12 Concluding remarks

If it can be demonstrated that depressive symptoms and clinical depression is more common during the postpartum period, then it can be considered that certain factors intrinsic to childbirth may be involved in the etiology of postpartum depression, thus, providing the first step in the link between childbirth and the development of postpartum depression. On the other hand, if its demonstrated depression is no more common during the puerperium than at other times of life, it would suggest that childbirth is not an event that increases risk for depression. Then one may assume that postpartum depression and nonpostpartum depression are not distinct diagnoses and what is true for one will generally be true for the other syndrome.

There has been a noticeable absence of cross-sectional studies enabling researchers to test these propositions of a clinical construct, labelled postpartum depression, and to see if the rates of postpartum depression exceed the prevalence rates in the community. Such comparisons can show whether there is an increased risk for developing depressive symptoms after childbirth, because one can assume that other environmental stressors will be similar for both groups.

To date, comparison studies have produced equivocal results. Rees and Lutkins (1977) compared the depressive symptomatology of postpartum women, their partners and

non-childbearing women. The prevalence of depressive symptoms was found to be higher in the postpartum sample compared to the prevalence rates of their partners and the control group. However, the methodology of this study has been questioned. Concerns with the methodology of a study by Augusto et al. (1996) have also been raised. Augusto et al. reported a higher prevalence of depressive symptoms and major depression postpartum compared to nonpostpartum controls. O'Hara et al. (1990) detected a significant difference between the rates of depressive symptoms prepartum and three weeks postpartum compared to matched non-childbearing women. However, no difference was detected in the diagnosis of depression. Such findings have lead researchers to suggest there may be an increased risk of depression and depressive symptoms in the first month postpartum (Cox et al., 1993; O'Hara et al., 1990; Pope et al., 2000). Many researchers (Cox et al., 1993; Not, 1987; O'Hara et al., 1990; Troutman & Cutrona, 1990) did not find a difference in syndromal depression or depressive symptoms during the first 12 months postpartum compared to syndromal depression or depressive symptoms in general female or mixed population samples. In general, no difference has been found in the prevalence rates of depression and depressive symptoms three months postpartum and six months postpartum compared to non-childbearing samples. Thus, few studies have provided unquestionable evidence supporting hypothesis childbirth places the mother at risk for depressive symptoms and clinical depression in the first year postpartum.

The following section provides an overview of the methodology utilised in the examination of the hypothesis childbirth uniquely predisposes women to develop symptoms of depression.

## CHAPTER FOUR: METHODOLOGY

The purpose of the present study is to determine whether the postpartum period is associated with an elevated risk of depressive symptoms. The aim of the present study is to establish whether low-income women in a rural community in South Africa experience an increase in depressive symptomatology during the first six months postpartum as compared to the existence of depressive symptomatology experienced by men and nonpostpartum women in the community. The research design and methodology employed, in obtaining and analysing the data, to accomplish the above objective is outlined in this chapter.

### 4.1 Research methods

#### 4.1.1 Research design

As mentioned in the introduction, the present study forms part of a larger research project co-ordinated by the WMHRP. This study included several stages. The first stage assumed the form of a situational analysis and consisted of two components. The first component involved a survey of all mental health care providers, welfare providers, self-help groups and support organisations in the Stellenbosch area. The results of the survey and a description of the existing mental health system in the Stellenbosch area were presented in a publication *Vrouegeestesgesondheidsorg. 'n Gids to geestesgesondheidsdienste vir lae inkomste vroue in die Weskus/Wynland Streek*. The second component of the first stage involved clinical students developing a demographic profile of the population of Kylemore and interviewing key role players to provide a preliminary needs assessment. The second stage consisted of the analyses of qualitative and quantitative data. This stage involved the interviewing of women reporting at the Kylemore clinic for prenatal and antenatal visits. The third stage of the study will include the implementation and evaluation of different interventions and support strategies for the community. These interventions are to be

focused on the women themselves, as well as with men, children, families and the community as a whole.

The present study falls within the second stage of the larger project, assumes a positivist empirical framework and is cross-sectional by design.

A cross-sectional differential research design was employed in the examination of the hypothesis that childbirth uniquely predisposes women to develop symptoms of depression. The quantitative nature of such a design seems appropriate for an investigation into the prevalence of depressive symptomatology as the design enables the researcher to collect and compare information from groups of people regarding their mood and affect through the use of an inventory.

In differential research two or more groups that are differentiated on the basis of some preexisting variable are observed (Graziano & Raulin, 2000). Groups can be determined by a qualitative dimension, for example in the present study groups are determined by participant's sex or if the participant is three or six months postpartum. This classification variable is the independent variable and the behaviour measured (depressive symptomatology) is the dependent variable. Neither of these variables is manipulated in differential research.

As the present study used a cross sectional differential design the different groups of participants, based on their sex and whether they are postpartum, are compared on a set of variables, which in this study was the depressive symptomatology as measured by the BDI (Beck et al., 1961).

As with all differential research, there is always the possibility of confounding and, therefore, care is needed in drawing conclusions from cross-sectional studies (Graziano & Raulin, 2000). The differences between groups may give insight into the risk of developing depressive symptoms postpartum. However, caution is required in the interpretation as the differences in scores may be due to other variables. Possible confounding variables in

differential research make it difficult to draw solid conclusions on the basis of a single research study (Graziano & Raulin, 2000) as the groups may differ on several variables other than the independent variable. In an attempt to control certain confounding variables the present study selected participants from the same community and depression symptom rates of one group were compared to rates of depression symptoms of another group at the same point in time.

Other limitations include the potential lack of depth and insider perspective (resulting from a quantitative analysis) and the possibility that the data collected may be context specific (Graziano & Raulin, 2000).

#### 4.1.2 Research site

The study was conducted in the semi-rural town of Kylemore in the Western Cape. Kylemore is a poor, self-contained community seven kilometres outside the town of Stellenbosch. The residents of Kylemore are largely dependent on seasonal work in agriculture. Fifty percent of households have an annual household income below R18 000. There are in the region of 5000 residents. As it is an integral part of Kylemore, the adjacent informal settlement was also surveyed in order to cover a range of socio-economic groups existing within the community.

#### 4.1.3. Participants

There were two groups of participants, a nonpostpartum community group and a postpartum group. The nonpostpartum community sample consisted of men and women (who had not given birth in the previous six months) ( $N = 254$ ,  $n = 131$  for 2002 and  $n = 123$  for 2003) older than sixteen years of age. These men and women volunteered to take part in a Kylemore depression survey conducted in 2002 and 2003.

The postpartum sample consisted of women ( $n = 41$ ) who were in the postpartum period. These participants were selected from a sample of women who participated in the

Maternal Mental Health Project of the WMHRP. All women attending the Kylemore Clinic for prenatal and postpartum visits in a time period of two years (March 2002 – March 2004) were asked to participate. The biographical data of these participants are reflected in the following tables.

#### 4.1.3.1 Demographic and social information: Community samples

##### 4.1.3.1.1 Age and gender

Table 5

#### *Age Distribution: Community Sample*

	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Age (years)				
16 – 19	6	4.6	1	0.8
20 – 29	24	18.8	30	24.4
30 – 39	29	22.1	27	22.0
40 – 49	27	20.6	25	20.3
50 – 59	27	20.6	18	14.6
60 – 69	11	8.4	14	11.4
70 – 79	6	4.6	5	4.1
80 – 89	0	0	1	0.8
No response	1	0.3	2	1.6
Total	131	100	123	100

Table 5 indicates that the majority of participants were between the ages of 20 and 50. The mean age of the 2002 community sample was 42 years (range 16-78). The mean age of the 2003 community sample was also 42 years (range 19-82).

Table 6

*Gender*

	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Gender				
Male	40	30.5	38	30.9
Female	91	69.5	85	69.1
Total	131	100	123	100

The majority of participants were female in both 2002 and 2003 community samples, with the number of female participants doubling those of the male participants.

## 4.1.3.1.2 Language

Table 7

*Home Language*

	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Language				
Afrikaans	130	99.2	121	98.4
English	1	0.8	2	1.6
Total	131	100	123	100

Almost all the participants spoke Afrikaans as a home language. Only three participants (one in the 2002 community sample and two in the 2003 community sample) spoke English as a home language.

## 4.1.3.1.3 Relationship status

Table 8

*Relationship status*

	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Relationship status				
Single	30	22.9	33	26.8
Married	79	60.3	74	60.3
Live-in partner	6	4.6	9	7.3
Divorced	3	2.3	3	2.4
Widowed	8	6.1	3	2.4
No response	5	3.8	1	0.8
Total	131	100	123	100

According to Table 8, more than half (60.3%) of 2002 and 2003 community samples were married. Just under a quarter in 2002 were single and just over a quarter in 2003 were single. The percentage of participants living with partners, divorced or widowed was altogether 13 % in 2002 and 12.1% in 2003. Five participants (3.8%) in the 2002 sample refrained from answering this question, whereas only one participant (0.8%) in 2003 did not respond.

## 4.1.3.1.4 Religious affiliation

Table 9

*Community Participants Religious Affiliations*

	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Religion				
Church of England	0	0	1	0.8

Anglican	31	23.7	23	18.7
Roman Catholic	14	10.7	5	4.1
Old and New Apostolic	30	22.9	30	24.4
Dutch Reformed	25	19.1	26	31.1
Methodist	16	12.3	20	15.3
Other affiliations	12	9.2	6	4.8
No affiliation indicated	3	2.1	1	0.8
<b>Total</b>	<b>131</b>	<b>100</b>	<b>123</b>	<b>100</b>

It is demonstrated in Table 9 that 23.7% of 2002 respondents were affiliated to the Anglican Church and 22.9% to the Apostolic churches. The majority of 2003 participants were affiliated to the Apostolic churches (24.4%) and the Dutch Reformed church (31.1%). No single church grouping appeared to dominate in this community. Only 2.1% of the 2002 respondents and 0.8% of the 2003 respondents reported no religious affiliation to a specific church, suggesting that belonging to a religious affiliation plays an important role in this community.

#### 4.1.3.1.5 Employment status

Table 10

##### *Current Employment*

	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Employment status				
Unemployed	37	28.2	44	35.8
Employed	53	40.4	44	35.8
Housewife	12	9.2	17	13.8

Pensioner	22	16.8	13	10.6
Student	3	2.3	3	2.4
No response	4	3.1	2	1.6
Total	131	100	123	100

Table 10 indicates that most of the participants (40.4%) in the 2002 community sample were employed. This is followed by 28.2% of participants unemployed. In 2003, the percentage of employed participants was 35.8%. This is the same percentage of unemployed 2003 community respondents.

#### 4.1.3.1.6 Level of education

Table 11

##### *Level of Formal Learning*

Education level	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Grade 1-3	8	6.1	4	3.3
Grade 4-7	25	19.1	23	18.7
Grade 8-10	55	42.0	51	41.5
Grade 11-12	34	26.0	41	33.3
Tertiary	2	1.5	2	1.6
No response	7	5.3	2	1.6
Total	131	100	123	100

According to Table 11, only 26% of the 2002 community sample and 33.3% of the 2003 community sample completed their schooling at grade twelve. Two (1.5% in 2002 and 1.6% in 2003) participants in each of the respective years received tertiary education. The

majority of participants (42% in 2002 and 41.3 % in 2003) received formal education up to grades eight to ten. The large number of participants who did not complete formal schooling may have been due to financial reasons or an inadequate education system imposed by the apartheid system, which allocated most resources to the education of caucasian children and secondly to the education of coloured and black children (Lesch, 2000). Another explanation suggested by Lesch, may be that educational achievement does not receive high priority in this community and that completing schooling may not be considered the norm.

#### 4.1.3.1.7 Household income

Table 12

##### *Average Monthly Household Income*

	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Ave. household income (p/m)				
No income	21	16.0	35	28.5
>R499	11	8.4	7	5.7
R500–R999	16	12.2	16	13.0
R1000-R1999	15	11.5	14	11.4
R2000-R2999	7	5.3	10	8.1
R3000-R3999	4	3.1	5	4.1
R4000-R4999	0	0	2	1.6
R5000<	8	6.1	9	7.3
No response	49	37.4	25	20.3
Total	131	100	123	100

In Table 12 it is demonstrated that 16% (2002 community sample) and 28.5% (2003 community sample) of the participants received no monthly income. The table shows that there is a large range of income received in this community, from earning under R500 per month to earning over R5000 per month, with the majority of earners receiving between R500 and R2000 monthly. This relatively wide range of income suggests that this community is not homogenous in socioeconomic terms. An explanation for this may be that the apartheid system forced people of a particular race to live in a specific area and that people of the same race with differentiated socio-economic status ended up living in the same community (Lesch, 2000). Less than 40% of the 2002 participants and 20.3% of 2003 participants declined to respond to this question. The question may have raised some amount of discomfort in the participants as it involves sharing sensitive information with the researcher (Patel et al., 1999).

#### 4.1.3.1.8 Number of residents in house

Table 13

##### *Number of Household Occupants*



	2002 community		2003 community	
	Frequency	Percent	Frequency	Percent
Household occupants				
1-3	29	22.1	16	13
4-6	79	60.3	75	61
7-9	14	10.7	24	19.5
10-12	2	1.5	2	1.6
More than 12	1	0.8	2	1.6
No response	6	4.6	4	3.3

Total	131	100	123	100
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Table 13 indicates that 79 (60.3%) and 75 (61.0%) participants, for 2002 and 2003 community samples respectively, shared a house with four to six members. In 2002, 29 (22.1%) participants reported living in a household consisting of between one and three occupants (including the participant). In 2003 only 16 participants (13%) were living in a household consisting of one to three people, and 24 (19.5%) participants were sharing their living quarters with seven to nine people. In 2002, 14 (10.7%) participants reported to live with between seven and nine household occupants. Although the number of participants living in a house with more than 12 occupants is small (0.8% in 2002 and 4.6% in 2003), it does indicate that some of the participants are living in crowded, and perhaps poor, circumstances.

#### 4.1.3.2 Demographic and social information: Postpartum sample

##### 4.1.3.2.1 Age

Table 14

#### *Age Distribution: Postpartum Sample*

	Frequency	Percent
Age (years)		
16 - 19	10	24.3
20 - 24	9	22
25 - 29	11	26.8
30 - 34	8	19.6
35 - 40	3	7.3
Total	41	100



As can be seen in Table 14, all the postpartum participants were below the age of 40. Nearly half were under the age of 25, of which 10 (24.3%) participants were younger than 20 years old.

#### 4.1.3.2.2 Language

Table 15

##### *Home Language*

	Frequency	Percent
Language		
Afrikaans	40	97.6
English	1	2.4
Total	41	100

With the exception of one (2.4%) participant speaking English as a home language, the majority of the postpartum sample (97.6%) spoke Afrikaans.

#### 4.1.3.2.3 Relationship status

Table 16

##### *Relationship status*

	Frequency	Percent
Relationship status		
Single	22	53.7
Married	14	34.1
Live-in partner	3	7.3
Divorced	2	4.9
Total	41	100

According to Table 16, just over half of the participants were single (53.7%). Fourteen (34.1%) women were married, three (7.3%) were living with a partner and two (4.9%) were divorced.

#### 4.1.3.2.4 Number of children

Table 17

##### *Parity*

	Frequency	Percent
Number of children		
1	22	53.7
2	11	26.8
3	8	19.5
Total	41	100

Twenty-two women had in the past three or six months given birth to their first child, whilst 11 had recently delivered their second child, and for three women their third child.

#### 4.1.3.2.5 Religious affiliation

Table 18

##### *Postpartum Participants Religious Affiliations*

	Frequency	Percent
Religion		
Church of England	2	4.9
Anglican	3	7.3
Roman Catholic	5	12.2
Old and New Apostolic	12	29.3
Dutch Reformed	6	14.6

Methodist	2	4.9
Other affiliations	3	7.3
No affiliation indicated	8	19.5
Total	41	100

Table 18 demonstrates that 12 (29.3%) respondents were affiliated to the Apostolic churches. Eight participants (19.5%) indicate no religious affiliation.

#### 4.1.3.2.6 Employment status

Table 19

##### *Current Employment*

	Frequency	Percent
Employment status		
Unemployed	7	17.1
Employed	21	51.2
Housewife	5	12.2
Student	7	17.1
No response	1	2.4
Total	41	100

Twenty-one (51.2%) of the postpartum participants had employment. Seven (17.1%) were still attending school and seven (17.1%) were unemployed, whilst five (12.2%) were housewives.

#### 4.1.3.2.7 Level of education

Table 20

##### *Level of Formal Learning*

	Frequency	Percent
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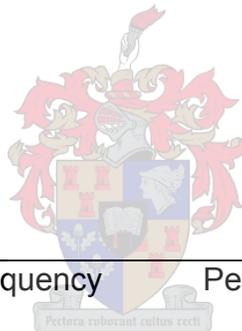
## Level of education

Grade 4-7	4	9.8
Grade 8-10	13	31.7
Grade 12	22	53.7
No response	2	4.9
Total	41	100

According to Table 20, just over half of the postpartum participants (53.7%) completed their schooling career at grade 12. Seventeen women did not finish school. Four (9.8%) left school in junior primary (grades four to seven) and thirteen (31.7%) left school between grades eight and ten.

## 4.1.3.2.8 Household income

## Table 21

*Average Monthly Household Income*

	Frequency	Percent
Ave. household income (p/m)		
No income	2	4.8
>R499	2	4.8
R500-R999	4	9.6
R1000-R1999	8	19.3
R2000-R2999	5	12.2
R3000-R3999	4	9.6
R4000-R4999	1	2.4
R5000<	2	4.8
No response	12	29.3

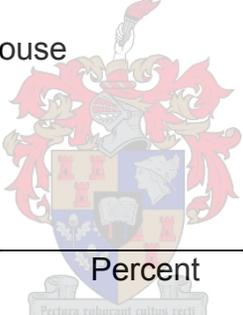
Total	41	100
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Table 21 indicates that the two participants (4.9%) lived in households with no regular monthly incomes. Another two (4.8%) households received an income of less than R500 per month, whilst four (9.6%) households had a total income of between R1000 and R2000 per month. The highest percentage of monthly income appears to fall in the range of R1000 to R1999 (19.3%) and R2000 to R2999 (12.2%). Twenty-nine percent of postpartum participants declined to answer the question. A possible reason may be that some women were not directly involved in income generation and may not have known the amount of income generated monthly. This explanation is very probable when considering that some of the participants are still scholars and are thus dependent on carers to provide for them.

#### 4.1.3.2.9 Number of residents in house

Table 22

##### *Number of Household Occupants*



	Frequency	Percent
Household occupants		
1–3	9	21.9
4–6	20	48.8
7– 9	9	21.9
10–12	2	4.8
No response	1	2.4
Total	41	100

Just under half (48.8%) of the participants were sharing a house with between four and six occupants. An equal number of participants lived in a house consisting of one to three

persons (21.9%) and seven to nine persons (21.9%), whilst a small minority (4.8%) shared living quarters with between 10 to 12 people.

#### 4.1.4 Measurement instruments

##### 4.1.4.1 Demographic form

A demographic questionnaire (see Appendix A) was compiled by the WMHRP to gather information presented in the tables above.

##### 4.1.4.2 Beck Depression Inventory

###### 4.1.4.2.1 Introduction

In both samples, an Afrikaans version of BDI (Beck et al., 1961; Beck et al., 1988) was used as the self-report measure of the severity of depressive symptoms (see Appendix B). The purpose of the BDI is to assess the severity of depressive symptoms in a target population of adults aged 16 years and older. The BDI was developed in concert with criteria for diagnosing depressive disorders contained in the DSM-III and is widely used in clinical psychology and psychiatry for assessing the intensity of depression symptomatology in psychiatric patients and for detecting possible depression symptomatology in non-psychiatric populations (Beck et al., 1961; Beck et al., 1988; Moon Park & Dimigen, 1995). The BDI is reported to have good psychometric properties and has been frequently used in general depression research (Moon Park & Dimigen, 1995) and in research on postpartum depression (Beck & Gable, 2001; Lee et al., 2001; O'Hara et al., 1990). The BDI has also been used extensively in cross-cultural contexts (Bonilla et al., 2004).

###### 4.1.4.2.2 Composition of test items

The BDI (Beck et al., 1961) consists of 21 items representing symptoms and attitudes indicative of depressive symptomatology. The items include: (a) mood, (b) pessimism, (c) sense of failure, (d) lack of satisfaction, (e) guilt feelings, (f) sense of punishment, (g) self-dislike, (h) self-accusation, (i) suicidal wishes, (j) crying, (k) irritability, (l) social withdrawal,

(m) indecisiveness, (n) distortion of body image, (o) work inhibition, (p) sleep disturbance, (q) fatigue, (r) loss of appetite, (s) weight loss, (t) somatic preoccupation, and (u) loss of libido (Beck et al., 1961; Beck et al., 1988).

#### 4.1.4.2.3 Administration and scoring

Respondents are asked to read each statement and indicate which statement best describes how they had been feeling and functioning in the past two weeks. In 19 of the 21 items, participants are required to indicate, on a four-point scale ranging from 0 to 3 in ascending levels of intensity, from the absence of a symptom (for example, “I do not feel sad”) to a severe level (for example, “I am so sad or unhappy that I can’t stand it”). In the two remaining items (which concern changes in sleeping patterns and changes in appetite) participants note any increases or decreases in these behaviours.

The instrument takes an average of 10 minutes to complete when self-administered and is scored by summing the ratings given to each of the 21 items (Beck et al., 1961; Beck et al., 1988). The maximum possible score on the BDI is 63, with high scores indicating a high level of depressive symptoms. Scores on the BDI can be interpreted in the following manner: none to minimal depression (0-9), mild to moderate depression (10-18), moderate to severe depression (19-29), and severe depression (30-63) (Beck et al., 1961; Beck et al., 1988).

The BDI can be divided into two subscales measuring two different aspects of depression: (a) emotional symptoms of depression (cognitive-affective scale) (items 1-14), and (b) the physical symptoms of depression (somatic-performance scale) (items 15-21) (Moon Park & Dimigen, 1995; O’Hara et al., 1990).

#### 4.1.4.2.4 Standardisation

Self-report measures have the advantage of being relatively inexpensive and easy to use. Administration of these measures requires little time or previous training, which permits

wider use of standardized interviews. Despite the contradictory findings about the value of the BDI (Beck et al., 1961) as a measure of clinical depression, the instrument has been widely accepted as a standard criterion measure in the United States and in a number of translations throughout the world (Moon Park & Dimigen, 1995; Tashakkori et al., 1989).

#### 4.1.4.2.5 Reliability

The reliability and validity of the BDI (Beck et al., 1961) has been fully documented in the United States and European contexts (Beck, 2001). Bonilla et al. (2004) propose that the reliability of the BDI is supported in different cultural contexts as well as in different samples (such as clinical and community populations).

Criticism of the BDI (Beck et al., 1961) has focused on the instrument's lack of specificity in detecting diagnosable episodes of depression (Whiffen, 1988). Whiffen claims that although the sensitivity of the BDI is generally high, the instrument is not perfect, with reported false negative rates that range from 7% to 29% when compared to depressive diagnoses. This variability indicates that before the BDI is used to screen for depressive symptoms estimates of its sensitivity and specificity for that particular population should be determined.

Using the optimal cut-off point of 10/11 for a study population consisting of Chinese postpartum women, Lee et al. (2001) found the sensitivity of the scale to be 82% and specificity 89%. Positive predictive value was reported to be 50% and negative predictive value 97%. The authors state that these results indicate the BDI (Beck et al., 1961) is useful for screening for depressive symptoms in a postpartum sample as these figures are comparable to those of the EPDS (Lee et al., 2001).

##### 4.1.4.2.5.1 Internal consistency

A meta-analysis conducted by Beck et al. (1988) on research studies focusing on the psychometric properties of the BDI (Beck et al., 1961) with psychiatric and non-psychiatric

samples, were reviewed for the years 1961 through June, 1986. The coefficient alphas for psychiatric populations ranged from 0.76 through to 0.95 and the mean coefficient alpha was 0.86. For 15 non-psychiatric samples Beck et al. reported that the mean alpha was 0.81 (ranging from 0.73 to 0.92). The BDI was found to produce high coefficient alphas, regardless of whether assessments were based on psychiatric patients or non-psychiatric samples.

#### 4.1.4.2.5.2 Stability

Beck et al. (1988) presents 10 studies that reported pre- and post-test administrations of the BDI (Beck et al., 1961). The time intervals between the pre- and post-tests ranged from hours to weeks. The range of Pearson product-moment correlation coefficients for psychiatric patients ranged from 0.48 to 0.86, and the coefficients for non-psychiatric subjects ranged from 0.60 to 0.83. Beck et al. states that, due to the lower boundary of the non-psychiatric samples range, these samples displayed more stable BDI scores than the psychiatric patients. The high correlations for non-psychiatric groups suggest that the BDI demonstrates substantial stability over a weeklong period (Beck et al., 1988).

#### 4.1.4.2.6 Validity

A meta-analysis of studies on the BDI's (Beck et al., 1961) psychometric properties by Richter, Werner, Heerlim, Kraus and Sauer (1998) report advantages with the BDI's high content validity and validity in differentiating between people with depressive symptoms and people without depression.

Validity can be broken down into the following categories: content validity, concurrent validity, construct validity and discriminant validity. Each of these will be discussed in turn.

Firstly, the content of the BDI was obtained by consensus from clinicians regarding symptoms of depressed patients (Beck et al., 1961).

Secondly, for concurrent validity, Beck et al. (1988) determined that the BDI (Beck et al., 1961) is related to clinical constructs of depression ( $>0.60$ ), and demonstrates strong positive relationships with four well-researched instruments measuring depression. These being: (a) the Hamilton Psychiatric Rating Scale for Depression (HSRD), (b) the ZUNG, (c) the MMPI - Depression Scale (MMPI-D scale), and (d) the Multiple Affect Adjective Checklist Depression Scale (MAACL-D scale). The BDI's relationships with the instruments were found to be comparable, regardless of whether the sample was psychiatric or non-psychiatric.

The construct validity of the BDI has been evaluated using factor analysis (Bonilla et al., 2004). Beck et al. (1988) reported that the BDI has been found to include three to seven factors, depending on the method of factor extraction. These include factors that reflect negative attitudes towards self, performance, impairment, and somatic disturbances, as well as a general factor of depression (Deville, 2005).

Beck et al. (1988) report that in their meta-analysis it was determined that studies bearing on the discriminant validity of the BDI indicated there is support for the BDI in its ability to differentiate between psychiatric and non-psychiatric samples. There is evidence that the BDI also differentiates subtypes of depression (Beck & Gable, 2001). BDI symptoms discriminate medical patients and non-medical patients and people without depressive symptoms, even though the BDI contains performance and somatic symptoms that could be attributed to the medical conditions themselves. The BDI is also noted to distinguish between major depressive and generalized anxiety disorders (Beck et al., 1988).

#### 4.1.4.2.7 Reliability and validity for use in South Africa

The BDI (Beck et al., 1961) has not been standardized in South Africa but has been successfully used in recent South African studies (Lester & Akande, 1997; Seedat, Nyamai, Njenga, Vythilingum & Stein, 2004; Spangenberg & Pieters, 1991; Ward, Flisher, Zissis, Muller & Lombard, 2003).

#### 4.1.4.2.8 Translation

The translation of the BDI (Beck et al., 1961) from English to Afrikaans was authorized by the Foundation for Cognitive Therapy and Research in 1988 (Moller, 1990). The translation was conducted by means of the Brislin method of back translation. However, the translated version was not standardized. Thus, the Afrikaans version of the BDI (Moller, 1990) has not yet been validated for use with a local population. In utilizing a standardized measure of symptoms of depression insight may be provided into its suitability with use in a non-English speaking community sample.

#### 4.1.5 Data collection procedures

##### 4.1.5.1 Sampling techniques

##### 4.1.5.1.1 Community

Sampling used in cross-sectional surveys is generally probabilistic sampling. This manner of sampling provides greater confidence that the sample adequately represents the population. In probability sampling, each population element (person) has some known specifiable probability of being included in the sample. The major probability sampling methods are simple random sampling and stratified random sampling (Graziano & Raulin, 2000). The participants for the “mixed” (males and females) community sample were selected through simple random sampling.

For the depression survey, a municipal map of the town of Kylemore acted as the sampling frame for a random sample of adult inhabitants. In a random sample, the researcher controls the sampling process but has no control (apart from age and childbearing guidelines) over which individuals are selected. Whether an individual is selected or not, is determined by chance (Katzenellenbogen, Joubert & Abdool Karim, 1997). The survey was conducted over a six-hour period on two pre-determined days, one in July 2002 and one in August 2003. The town was divided according to streets and pairs of interviewers were

randomly assigned a section on which to focus. This ensured that all sections of the town (wealthier and poorer) were surveyed.

The interviewers went door-to-door asking possible participants if they wouldn't mind helping students from the University of Stellenbosch in a research study concerned with how things are with the community members of Kylemore – how they feel about themselves, their world and the future. Participants were then informed that the interview would consist of some questions and that it would take between 10 to 30 minutes to complete. After a brief introduction and description of the process, the consent form was then presented to the participant, which was then signed by the participant depending on whether they decided to continue. If the participant declined to participate the interviewer made note of this and the reasons provided by the participant on a separate observation form. The participants were then asked to complete the following questionnaires: an identification form, a demographic form and a BDI (Beck et al., 1961). All forms were filled in by the interviewers, except for the BDI. After the interview the interviewer noted their observations of the participant on an observation of interviewer form. This information provided qualitative data not reflected in the other forms.

#### 4.1.5.1.2 Postpartum participants

Participants of the Maternal Mental Health Project of the WMHRP were recruited from Kylemore Clinic. All women visiting the Kylemore Clinic for prenatal and, or, postnatal visits during the period March 2002 – March 2004 were asked to participate in the project. Using a prospective design, the women were recruited during pregnancy, or soon after childbirth, and followed through for six months postpartum. In the Maternal Mental Health Project participants were interviewed at four different points in time by the same trained interviewer. One prenatal interview and three postpartum interviews (three days post birth, three months post birth and six months post birth) were conducted. These interviews consisted of

extensive open-ended interviews and covered a variety of topics (current symptomatology, personal and family history, coping mechanisms, violence, substance abuse, reproductive health issues and sexuality), but focused more specifically on women's experiences of pregnancy, termination of pregnancy, birth and early motherhood. The interview questions were aimed at exploring how the women themselves interpret and make sense of their experiences. After the lengthy open-ended interview the respondent was asked to complete or answer several standardised questionnaires. These included the general health questionnaire and the BDI (Beck et al., 1961). After the interview the trained interviewer was required to fill in a journal noting the participants behaviour, actions, appearance and anything of interest that was not covered by the interview and the questionnaires.

As part of the second stage of the larger study, the present research study focused on the data collected during the three-month and six-month postpartum interviews.

#### 4.1.5.2 Interviewers

The interviewers (involved in data collection for both community and postpartum samples) were graduate students of Psychology at Stellenbosch University involved in WMHRP. Honours students who wanted to participate in the Maternal Mental Health Project of the WMHRP were asked to fill in an application form that included a brief CV (containing relevant experience and University courses attended) and a brief motivation as to why they wanted to participate in the study. Those that were selected received formal training for the interviewing from Prof. Kruger and senior members of the research team.

#### 4.1.5.3 Completion of questionnaires

Of the entire combined gendered community sample, 23 questionnaires were invalid, 14 in the 2003 sample and nine in the 2002 sample. Altogether, 231 questionnaires were completed for the community samples.

In the postpartum sample, of the thirty-eight questionnaires handed out at three-month assessment, only two were not complete. At six-months postpartum 34 questionnaires were completed, only one was invalid.

#### 4.1.6 Data analysis

Several independent t-tests were performed to test the research hypotheses. This statistical test is the most appropriate method of analysis to use when working with data from a between-groups design as the t-test evaluates the size of the difference between the means of the two groups (Graziano & Raulin, 2000). A major disadvantage in using t-tests is that only two groups can be compared at a time.

The data received from the community sample are divided into 2002 and 2003 categories, both of which are further split into three subcategories. The subcategories are: male, female (who have not given birth in the previous six months) and “mixed” (males and females) community data.

The postpartum sample BDI scores are also divided into two categories, three-month postpartum and six-month postpartum scores.

Independent t-tests were executed on the 2002 and 2003 groups respectively, first with the three-month postpartum scores followed by the six-month postpartum scores. These statistics are reported in the following chapter. Statistical analyses were conducted using SPSS for Windows, version 9.0.

#### 4.1.7 Ethical responsibilities

It is important that research participants are protected against deception, dangerous procedures and invasion of privacy. Potential invasions of privacy occur when researchers examine highly personal and sensitive areas of psychological adjustment, such as private thoughts or fears (Graziano & Raulin, 2000).

In an attempt to reduce possible risk exposure to participants, most Universities adopt the following ideas: scientific research must offer potential benefits to society in general (as well as to specific scientific disciplines) and the participants basic rights must be respected, including their right to confidentiality of personal information, their right to informed consent and their right of minimisation of risks to which people could be exposed during the research process (Mouton, 2001).

All participants in the present study were presented with a consent form, which was read and agreed to by the participant before proceeding onto the questionnaire (see Appendix C). In these informed consent forms the following issues were highlighted:

- the purpose of the study;
- explanation of what the questionnaire entails and the time required for completion of the questionnaire;
- confidentiality and specific measures to ensure confidentiality during the research stages;
- participants' right to discontinue participation in the interview, or at any stage of the research, for any reason;
- the availability of resources (telephone numbers of counsellors and counselling services) should respondents find any questions painful, or become aware of personal problems during any stage of the research, and would like to speak to someone.

In this chapter the research methods were explained. In the following chapter results of the data analysis are presented.

## CHAPTER FIVE: RESULTS

In order to determine whether rates of depressive symptoms during the postpartum period differ from rates of depressive symptoms in men and women who are not postpartum, the level of depressive symptoms experienced by childbearing women (as measured by the BDI) (Beck et al., 1961) are observed at two assessments (three and six months postpartum). In addition, two male samples, two nonpostpartum female samples and two “mixed” (males and females) samples from a low-income community are assessed using the same measures of depression symptoms.

In this chapter the results from the BDI (Beck et al., 1961) are presented. First, the severity of depressive symptoms (as expressed by the BDI) and the prevalence rates are provided. This is followed by results of independent t-tests, which were used to determine whether there is a significant difference between the levels of depressive symptoms experienced in the postpartum groups in comparison to the male, nonpostpartum and “mixed” (males and females) community groups.

### 5.1 Prevalence of depressive symptomatology

#### 5.1.1 Postpartum

Table 23

*Prevalence Rates of Mild, Moderate and Severe Depression Three Months and Six Months Postpartum*

	Severity of depression			
	Mild	Moderate	Severe	Total
	F (%)	F (%)	F (%)	F (%)
Group				

Three months ( $n=36$ )	9 (23.7)	5 (13.2)	0	14 (36.9)
Six months ( $n=33$ )	7 (20.6)	8 (23.5)	1 (2.9)	16 (47)

Table 23 indicates that at the three-month postpartum assessment, 14 participants achieved a score of 10 or above on the BDI. Nine (23.7%) met the criteria for mild-depression and five (13.2%) for moderate depression. In the sixth month postpartum group, 16 participants achieved a score of 10 or higher on the BDI, with one participant meeting the criteria for severe depression. Thus, the prevalence rate of depressive symptoms at the three months postpartum assessment is 36.9% and 47% at the sixth month assessment.

### 5.1.2 Community

Table 24

*Prevalence Rates of Mild, Moderate and Severe Depression in the 2002 Community Sample*

Group	Severity of depression			
	Mild	Moderate	Severe	Total
	F (%)	F (%)	F (%)	F (%)
Male ( $n=40$ )	8 (20)	7 (17.5)	2 (5)	17 (42.5)
Female ( $n=91$ )	26 (28.6)	16 (17.6)	5 (5.5)	47 (51.7)
“Mixed”	34 (37.9)	23 (18.9)	7 (5.7)	64 (52.5)

Out of the 40 male 2002 community participants, 42.5% scored 10 or above on the BDI. Twenty percent of which achieved a score between 10 and 18 in the mild category, 17.5% in the moderate category and 5% in the severe category. In the female subgroup of 2002, 28.6% met criteria for mild depression, 17.6% for moderate depression and 5.5% for severe depression. Altogether, the 2002 community sample has a 52.5% prevalence rate of depressive symptoms.

Table 25

*Prevalence Rates of Mild, Moderate and Severe Depression in the 2003 Community Sample*

Group	Severity of depression			
	Mild	Moderate	Severe	Total
	F (%)	F (%)	F (%)	F (%)
Male ( $n=34$ )	16 (42.1)	4 (10.5)	3 (7.9)	23 (60.5)
Female ( $n=75$ )	23 (27.1)	6 (7.1)	8 (9.4)	37 (43.6)
“Mixed”	39 (35.8)	10 (9.2)	11 (10.1)	60 (55.1)

It is indicated in table 25, 23 of the 34 of the 2003 male participants experienced depressive symptoms. Three of which experienced severe depressive symptoms, four moderate depressive symptoms and 16 mild depressive symptoms. In the female 2003 sample, 23 of the 75 participants scored 10 or above on the questionnaire, eight of which met the criteria for severe depressive symptoms, six moderate symptoms, and 23 mild depressive symptoms. There is a 55.1% prevalence rate of depressive symptoms in the 2003 community sample.

## 5.2 Comparison of total BDI scores

### 5.2.1 Comparison of BDI scores: 2002 community and three months postpartum

Table 26

*Independent T-Test Results of Total BDI Scores in the 2002 Community and Third Month Postpartum Samples*

Group	M	SD	df	$t^*$	$p^{**}$	CI (95%) for MD

2002 "mixed" sample	12.20	9.25	70.428	1.823	.073	-.26 and 5.85
Three months postpartum	9.36	7.61				
2002 female sample	12.47	9.67	83.100	1.889	.062	-.16 and 6.38
Three months postpartum	9.36	7.61				
2002 male sample	11.43	9.23	71	1.044	.300	-1.88 and 6.03
Three months postpartum	9.36	7.61				




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\* =  $p < .05$

\*\* = two-tailed significance

Three independent *t*-tests were conducted to establish whether low-income women three months postpartum experienced higher levels of depressive symptoms than: (1) men and women in the 2002 community sample combined, (2) men in the 2002 community sample and (3) women (who had not given birth in the previous six months) in the 2002 community sample. The results in Table 26, demonstrate that there were no significant differences between the levels of depressive symptoms in the three month postpartum group ( $M = 9.36$ ,  $SD = 7.61$ ) and the 2002 community group ( $M = 12.20$ ,  $SD = 9.25$ ),  $t(70.428) = 1.823$ ,  $p > .05$ . Nor was there a significant difference between levels of depressive symptoms experienced in the three month postpartum sample ( $M = 9.36$ ,  $SD = 7.61$ ) and the 2002 male community

sample ( $M = 11.43$ ,  $SD = 9.23$ ),  $t(71) = 1.044$ ,  $p > .05$ , nor the 2002 female community sample (who had not given birth in the previous six months) ( $M = 12.47$ ,  $SD = 9.67$ ),  $t(83.100) = 1.889$ ,  $p > .05$ .

### 5.2.2 Comparison of BDI scores: 2002 community and six months postpartum

Table 27

*Independent T-Test Results of Total BDI Scores in the 2002 Community and Sixth Month Postpartum Samples*

	M	SD	df	$t^*$	$p^{**}$	CI (95%) for MD
Group						
2002 "mixed" sample	12.20	9.25	153	.002	.998	-3.81 and 3.82
Six months postpartum	12.15	10.94				
2002 female sample	12.47	9.67	116	.155	.066	-.24 and 7.56
Six months postpartum	12.15	10.94				
2002 male sample	11.43	9.23	68	-.298	.766	-5.53 and 4.09
Six months postpartum	12.15	10.94				

\* =  $p < .05$

\*\* = two-tailed significance

Three independent *t*-tests were conducted to establish whether low-income women sixth months postpartum experienced higher levels of depressive symptoms than: (1) “mixed” (males and females) 2002 community sample, (2) men in the 2002 community sample and (3) women (who had not given birth in the previous sixth months) in the 2002 community sample. As indicated by the results in Table 27, there were no significant differences detected between the rates of depressive symptoms observed in the sixth month postpartum group ( $M = 12.15$ ,  $SD = 10.94$ ) and the 2002 “mixed” community groups ( $M = 12.20$ ,  $SD = 9.25$ ),  $t(153) = .002$ ,  $p > .05$ . Nor was there a significant difference between levels of depressive symptoms experienced in the sixth month postpartum sample ( $M = 12.15$ ,  $SD = 10.94$ ) and the 2002 male community sample ( $M = 11.43$ ,  $SD = 9.23$ ),  $t(68) = -.298$ ,  $p > .05$ , nor the 2002 female community sample (who had not given birth in the previous six months) ( $M = 12.47$ ,  $SD = 9.67$ ),  $t(116) = .155$ ,  $p > .05$ .

### 5.2.3 Comparison of BDI scores: 2003 community and three months postpartum

Table 28

*Independent T-Test Results of Total BDI Scores in the 2003 Community and Third Month Postpartum Samples*

	M	SD	df	<i>t</i> *	<i>p</i> **	CI (95%) for MD
Group						
2003 “mixed” sample	13	10.99	143	1.853	.066	-.24 and 7.56
Three months postpartum	9.36	7.61				

2003 female sample	12.25	11.07	95.575	1.606	0.111	-.68 and 6.47
Three months postpartum	9.36	7.61				
2003 male sample	14.71	10.78	67	2.251	.028	.57 and 9.43
Three months postpartum	9.36	7.61				

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\* =  $p < .05$

\*\* = two-tailed significance

Three independent *t*-tests were conducted to establish whether low-income women three months postpartum experienced higher levels of depressive symptoms in comparison to: (1) “mixed” (males and females) 2003 community sample, (2) men in the 2003 community sample and (3) women (who had not given birth in the previous six months) in the 2003 community sample. In Table 28, it is demonstrated that there is a significant difference between the levels of depressive symptoms in the three month postpartum sample ( $M = 9.36$ ,  $SD = 7.61$ ) and the male 2003 community sample ( $M = 14.71$ ,  $SD = 10.78$ ),  $t(67) = 2.251$ ,  $p < .05$ . No significant difference was detected between the rates of depressive symptoms in the three month postpartum sample ( $M = 9.36$ ,  $SD = 7.61$ ) and the 2003 “mixed” (males and females) BDI scores, ( $M = 13$ ,  $SD = 10.99$ ),  $t(143) = 1.853$ ,  $p > .05$ , and the three month postpartum sample ( $M = 9.36$ ,  $SD = 7.61$ ) and the 2003 female community sample (who had not given birth in the previous six months) ( $M = 12.25$ ,  $SD = 11.07$ ),  $t(95.575) = 1.606$ ,  $p > .05$ .

#### 5.2.4 Comparison of BDI scores: 2003 community and six months postpartum

Table 29

*Independent T-Test Results of Total BDI Scores in the 2003 Community and Sixth Month Postpartum Samples*

	M	SD	df	<i>t</i> *	<i>p</i> **	CI (95%) for MD
Group						
2003 “mixed” sample	13	10.99	140	.397	.692	-3.45 and 5.18
Six months postpartum	12.15	10.94				
2003 female sample	12.25	11.07	106	.044	.965	-4.47and 4.67
Six months postpartum	12.15	10.94				
2003 male sample	14.71	10.78	63	.834	.407	-3.15 and 7.65
Six months postpartum	12.15	10.94				

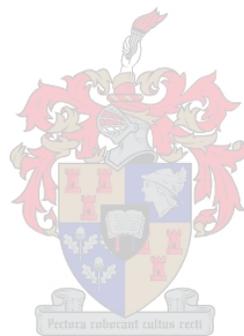
\* =  $p < .05$

\*\* = two-tailed significance

Three independent *t*-tests were conducted to establish whether low-income women six months postpartum experienced higher levels of depressive symptoms than: (1) “mixed” (males and females) 2003 community sample, (2) men in the 2003 community sample and (3) women (who had not given birth in the previous six months) in the 2003 community sample. The results depicted in Table 29 indicate that there was no significant difference in the levels of depressive symptoms experienced in a sample of low-income women six months

postpartum ( $M = 12.15$ ,  $SD = 10.94$ ) and a 2003 female community sample (who had not given birth in the previous sixth months) ( $M = 12.25$ ,  $SD = 11.07$ ),  $t(106) = .044$ ,  $p > .05$ . Nor was there a significant difference between levels of depressive symptoms experienced in the sixth month postpartum sample ( $M = 12.15$ ,  $SD = 10.94$ ) and the 2003 male community sample ( $M = 14.71$ ,  $SD = 10.78$ ),  $t(63) = .834$ ,  $p > .05$ , nor the “mixed” 2003 community sample ( $M = 13$ ,  $SD = 10.99$ ),  $t(140) = .397$ ,  $p > .05$ .

A discussion of these results in relation to the research question and hypotheses of the present study follow in the next chapter.



## CHAPTER SIX: DISCUSSION AND CONCLUSION

### 6.1 Introduction

The present study aimed to establish whether low-income women in a rural community in South Africa experienced an increase in depressive symptomatology during the first six months postpartum as compared to the existence of depressive symptomatology experienced by men and nonpostpartum women in the community.

In this chapter there is first a presentation of the prevalence rates of depressive symptomatology that were detected in the postpartum and nonpostpartum community samples. Following this is a discussion on the comparison of postpartum BDI (Beck et al., 1961) scores with the community BDI (Beck et al., 1961) scores and how these findings shed light on the research hypotheses. Alternative reasons for the findings of the present study, limitations and concluding remarks are also presented.

### 6.2 Prevalence rates of depressive symptomatology

#### 6.2.1 Postpartum

The period prevalence rate for depression as estimated by the BDI (Beck et al., 1961) (criterion  $> 9$ ) was found to be 41.7% for the total postpartum sample. The three-month point prevalence rate was found to be 36.9% (with 13.2% experiencing moderate levels) and the six-month point prevalence rate 47% (23.5% were recorded to experience moderate levels and 2.9% severe levels of depressive symptoms). These results are similar to that found in prenatal and postpartum assessments conducted in the same population by Storkey (2005). Storkey found a three-month prevalence rate of 37.9% and a six month prevalence rate of 48%.

In a similar South African population Cooper et al. (1999) reported finding a 34.7% three month point prevalence rate. Although the prevalence rates of depressive symptoms

detected in the present study cannot be directly compared with Cooper's results (as Cooper's results were based on the SCID as a criteria measure of clinical depression), results from the two studies indicate that in two low-income South African communities there is a high occurrence of depression and depressive symptoms postpartum.

The three-month point prevalence rate in the present study is similar to that reported by Lawrie et al. (1998) in an urban clinic sample in Johannesburg, South Africa. Using the EPDS as a measuring instrument, Lawrie et al. detected 24% of his participants experienced symptoms of depression at six weeks postpartum.

The three-month and six month point prevalence rates found in the present study are higher than those reported in population and primary care studies in other developing countries (Chandran et al., 2002; Patel et al., 2002). Chandran et al. (2002), in a prospective community based study in rural India, detected a rate of 14% with the EPDS. In India, Patel et al. (2002) detected a rate of 23% (using the EPDS) at approximately two-months postpartum and 22% prevalence rate at six-months postpartum. In Zimbabwe, the prevalence rate as assessed by the SSQ (the Shona Screening Questionnaire) was found to be 16% in a sample of 500 postpartum women from a peri-urban area (Nhiwatiwa et al., 1998).

Prevalence rates of postpartum depression reported in the present study also exceed those reported in developed countries, for example 18.4% as measured with the GHQ (Boyce et al., 1993) and 9.1% as measured with the EPDS (Murray & Carrothers, 1990), in Australia and the United States respectively.

Other researchers (such as Kumar and Robson (1984) who reported a prevalence of 14.9% in an English sample) have employed diagnostic criteria, therefore, the percentage of depression cannot be compared with that indicated by the BDI (Beck et al., 1961), such as that reported by the present study, and other self-report depression inventories. Results from studies employing diagnostic criteria (for example the DSM-III) (O'Hara et al., 1984) suggest

that the prevalence rate for the syndrome of postpartum depression is approximately 10% (O'Hara et al., 1990).

### 6.2.2 Community

The point prevalence rate for depressive symptoms as estimated by the BDI (Beck et al., 1961) (criterion  $> 9$ ) was found to be 52.5% and 55.1% in the two "mixed" (males and females) community samples (2002 and 2003 respectively). The community rates reported in the present study are much higher than that detected by self-report depression inventories in previous community studies conducted in South Africa. For example, Rumble et al. (1996), in a two-stage case identifying method in the village of Mamre, reported a 27% prevalence rate with the SRQ at the first stage-screen. Also using the BDI (Beck et al., 1961) Lester and Akande (1997) reported a prevalence of depressive symptoms of 11.8% in a South African student sample and 7.3% in a Nigerian student sample.

In combination with the results from previous South African community studies, the findings of the present study are in support of the proposal that depressive symptoms are common in low-income communities in South Africa.

The 2002 and 2003 "mixed" community point prevalence rates of depressive symptoms appear to be higher than those reported in community studies in other developing countries. In a post-hoc analysis of studies conducted in developing countries, by researchers Patel et al. (1999), the prevalence rates of common mental disorders were found to be 52%, 23% and 35% for samples in Chile and Brazil (Pelotas and Olina), as detected by the GHQ and the SRQ. In India, 46% of the urban sample met the criteria for a depressive disorder (Patel et al., 1999).

In agreement with previous research findings, suggesting women have a higher rate of depressive symptoms than men (Hollifield et al., 1990; Kessler et al., 1994; Sonnenberg et al., 2000), a 51.7% depressive symptomatology rate was observed in the 2002 sample of

nonpostpartum women, in comparison to 42% depressive symptomatology rate found in the 2002 male sample. However, in contrast to epidemiological studies, in which findings led to the proposal that women are twice as likely to be affected by depression and depressive symptomatology than men, elevated rates of symptoms of depression were detected in the male 2003 sample (60.5%). This rate is higher than that found in the 2003 nonpostpartum female community sample (43.6%).

One of the most salient findings of the present study is the apparent high prevalence of depressive symptoms in the community as measured by the BDI. It is possible that the high rates of depressive symptomatology are related to social factors, including poverty. The prevalence of depressive symptoms detected in the community is in accordance with the claim that poor communities in the developing world are especially vulnerable to risk of depressive disorders due to socio-economic hardship (Augusto et al., 1996; Cooper et al., 2002; Patel et al., 2001).

### 6.2.3 Conclusion

Contrary to the observations of Augusto et al. (1996), Kumar and Robson (1984) and Whiffen (1992), the postpartum sample of the present study was not found to have higher levels of depressive symptomatology than the nonpostpartum community samples. In fact, a lower percentage of postpartum women were noted to experience depressive symptoms in comparison to the “mixed” (males and females) community samples. These findings contrast with the findings reported by O’Hara et al (1990), who detected higher rates of depression in postpartum women than in nonpostpartum women. O’Hara’s research found at nine weeks postpartum the childbearing sample experienced higher levels of depressive symptomatology than their nonpostpartum counterparts. However, the difference was not significant (O’Hara et al., 1990).

The lower prevalence rate of depressive symptoms postpartum, detected in the present study, compared with the male, nonpostpartum female and “mixed” community prevalence rates is in accordance with several research studies (Cooper et al., 1988; Cox et al., 1993; Kumar & Robson, 1984; O’Hara et al., 1984). The authors of these studies report that the prevalence of non-psychotic depression is not significantly elevated during the puerperium. The findings in these studies highlight the possibility that the prevalence of clinical depression or depressive symptomatology in postpartum women is no higher than that found in the general population.

### 6.3 Comparison of postpartum BDI scores with community BDI scores

The results obtained in the present study indicated that the levels of depressive symptoms, based on the mean BDI (Beck et al., 1961) scores, experienced by the three month postpartum samples were not significantly higher than those experienced by the 2002 male sample, the 2002 nonpostpartum female sample, nor the “mixed” 2002 community sample.

The results obtained indicated that the levels of depressive symptoms, based on the mean BDI (Beck et al., 1961) scores, experienced by the three month postpartum sample were not significantly higher than those experienced by the 2003 male sample, 2003 nonpostpartum female sample, nor the “mixed” 2003 community sample. However, a significant difference was detected between the rate of depressive symptomatology experienced by the three month postpartum sample and the 2003 male community sample.

Contrary to expected findings, the male community members who participated in the 2003 survey reportedly experienced significantly higher levels of depressive symptoms than the three-month postpartum sample. Based on this finding, it may be suggested that men in this population are just as likely to experience high levels of depressive symptoms as women in the postpartum period. These findings suggest that in this low-income rural community,

postpartum women may not be at an increased risk for developing depressive symptoms at three and six months after childbirth.

According to the results found in the present study the level of depressive symptoms, as measured by the BDI (Beck et al., 1961), experienced by the sixth month postpartum sample was not significantly higher than that experienced by the 2002 male sample, the 2002 nonpostpartum female sample, nor the “mixed” 2002 community sample.

Finally, the level of depressive symptoms, as measured by the BDI (Beck et al., 1961), experienced by the sixth month postpartum sample was not significantly higher than that experienced by the 2003 male sample, the 2003 nonpostpartum female sample, nor the “mixed” 2003 community sample. However, a significant difference was detected between the rate of depressive symptomatology experienced by the sixth month postpartum sample and the 2003 male community sample.

Contrary to expected findings the male community members who participated in the 2003 survey experienced significantly higher levels of depressive symptoms than the six-month postpartum sample. Based on this finding, it is suggested that men in this population are just as likely to experience high levels of depressive symptoms as women in the postpartum period. These findings suggest that in this low-income rural community, postpartum women are not at an increased risk for developing depressive symptoms at three and six months after childbirth. Therefore, this finding does not support the medical and social science models proposal that postpartum women are biologically and psychologically more vulnerable to the development of depressive illness. Thus, based on the present findings, the link between childbirth and depression is not supported.

The results found in the present study are consistent with results, obtained by researchers in developed countries, where no significant difference in the prevalence of depression or depressive symptomatology between puerperal and nonpuerperal cohorts was

detected (Cooper et al., 1988; Cox et al., 1993; Nott, 1987; O'Hara et al., 1990; Troutman & Cutrona, 1990; Whiffen & Gotlib, 1992). The non-significant results also support the findings of Patel et al. (2002), who compared the prevalence rates of depression in puerperal samples with community studies in developing nations and found that his results did not indicate the period after childbirth as a time of increased vulnerability for the development of clinical depression or depressive symptomatology in his sample population.

While more recent studies in developed countries have reported a higher incidence of depressive symptoms among women than among men (Kessler et al., 1994; Paykel, 1991; Strebel et al., 1999) the converse appears true in earlier studies. The Old Order Amish in Pennsylvania are a subgroup in the United States that leads a 19<sup>th</sup> century way of life. The Amish have been reported to experience high levels of affective disorders (Paykel, 1991). In this community Paykel (1991) detected rates of clinical depression to be equal for the sexes (Paykel, 1991). In some developing countries, such as India, Guinea and Zimbabwe, more men than women have been diagnosed as being depressed (Weissman & Klerman, 1977). Recent studies have also reported findings that suggest rates of depression in communities in western countries are increasing particularly for young men, and that the rates of depression in men and women are becoming similar (Paykel, 1991). Such historical trends and cultural differences suggest that biological vulnerability is perhaps too simplistic an explanation for gender differences.

#### 6.4 Alternative reasons for findings

There are at least three possible explanations for the findings of the present study that would be consistent with the assumption that the postpartum period is a high-risk time for the development of depression and depressive symptoms for women.

One possible explanation for the lack of a significant difference between the postpartum and community groups is that the community samples were atypically at risk for

depression and depressive symptoms. However, this does not appear to be the case as this sample was composed of data from two community surveys, one conducted in 2002 and one conducted in 2003. The prevalence rate of depressive symptoms for the 2002 community (52.5%) is very similar to the point prevalence found in the 2003 community (55.1%).

Furthermore, the nonchildbearing comparison group was not assembled to match the postpartum group; it was assembled to be representative of the community of Kylemore. The only criterion for participation in the study was that participants should be over the age of 16 and if female to not be pregnant nor to have had a child in the past two years.

An alternative explanation for the similar rates of depression between the postpartum and community groups is that the sample of low-income mothers exhibited lower rates of depression than have other low-income postpartum women. However, the level of self-reported depressive symptomatology in the postpartum group fell within the range reported for previous studies of postpartum women conducted in similar populations (Cooper et al., 1999; Storkey, 2005).

A third possible explanation could be that participation in the Maternal Mental Health Research Project protected the childbearing women against depression and depressive symptomatology. There is evidence that women exposed to frequent contact with research workers will have a lower rate of postpartum depression than women who have relatively little contact with research workers (Kumar & Robson, 1984; O'Hara et al., 1990). Further research needs to be conducted to determine whether this explanation is a possibility for the postpartum participants of the present study.

As the present study used a differential research design it is difficult to avoid confounding variables. Confounding variables that may have had an effect on the dependent measure (the BDI score) (Beck et al., 1961) include age, relationship status, number of children, no religious affiliation, unemployment and lack of income. The postpartum sample

was much younger than the two community samples. All the postpartum participants were below the age of 40, whereas the mean age for the community samples was 42 years old. A larger number of community members were married (over 60% in both the 2002 and 2003 groups) compared to the postpartum sample, in which only 34% were married. The factor of number of children needs to be included in the community groups in order to compare this variable with the number of children in the postpartum sample. A much higher proportion of the postpartum sample reported no religious affiliation (19.5%) compared to the community samples (2.1% in the year 2002 and 0.8% in the year 2003). The level of unemployment and the percentage of participants from households receiving no monthly income are much lower in the postpartum sample compared with the community samples.

Thus, the results found in the present study could have been affected by factors of age, unemployment and lack of income, number of children, religious affiliation or relationship status. These confounding variables need to be controlled in future studies so one can determine which variables significantly influence the measure of depressive symptomatology.

## 6.5 Limitations

A cross-sectional research design was used to examine the implicit assumption upheld by the medical model that childbirth predisposes women to develop depressive symptoms. The quantitative nature of this design results in a lack of depth and insider perspective. Thus, the present study was unable to conceptualise women's depressive illness experience in a socio-political context.

A second limitation of quantitative analyses is that it can be very context specific. Results may be significantly different in other communities with different racial and socioeconomic compositions.

One of the weaknesses in using symptom-rating scales, such as the BDI (Beck et al., 1961), in a postpartum sample is that normal physiological changes of the puerperium may be

reflected as depressive symptoms. This finding applies equally in other populations (such as medically ill or older adults) where somatic symptomatology might be naturally elevated (O'Hara et al., 1984).

The usefulness of screening scales, such as the BDI (Beck et al., 1961), for the detection of depression in community samples of subjects in this population has not yet been confirmed. This may impose certain limitations on the reliability of the data.

A further shortcoming of the study, seen in light of the statistical analysis, is the large difference in the sample sizes of the postpartum group ( $n = 40$ ) and the two non-postpartum groups ( $n = 13$  and  $n = 123$ ). Although a difference may not influence the result of an independent t-test, it is still necessary to consider the possibility that it may have biased the results. When using sample sizes that are too low there is a possibility of the results being biased (Field, 2000). However, as the variations of the samples were normal, a sample of 40 participants is adequate to make the assumption of equal variances between the groups (Field, 2000). Statistically, 40 participants is a reasonably sized sample. A sample size of 40 or over 100 will generally produce very similar critical values in the independent t-test (Field, 2000), and will not inherently change the sample of distribution.

## 6.6 Conclusion

The present study formed part of a larger study run by the Women's Mental Health Research Project (WMHRP) at the University of Stellenbosch. The aim of the larger study is to obtain an understanding of the mental health needs of low-income women in a specific community by focusing on the prenatal and postpartum period (Storkey, 2005). The present study forms part of the second stage of the larger study by analysing data derived from the three month and six month postpartum interviews and the two community surveys, which took place in 2002 and 2003. The present quantitative study was conducted within a positivist empirical framework and was cross-sectional by design.

The study addressed the question as to whether rates of depressive symptoms during the postpartum period differ from rates of depression in men and women who are not in the postpartum period. As such, the aim of the study was to determine whether low-income women in a rural community in South Africa experienced an increase in depressive symptomatology during the first six month postpartum as compared to the existence of depressive symptomatology experienced by men and nonpostpartum women in the community.

In order to accomplish the objectives of the present study, the level of depressive symptoms experienced by childbearing women (as measured by the BDI) (Beck et al., 1961) were observed at two assessments (three and six months postpartum). In addition, a male sample, a nonpostpartum female sample and a “mixed” sample from the same low-income community were assessed using the same measures of depressive symptoms.

The results of this study do not support the hypothesis that childbirth uniquely predisposes women to develop depression in the first six months after childbirth. Firstly, the results showed that the sample of postpartum women, men and nonpostpartum women in the present study experienced higher levels of depressive symptomatology than has been reported in the majority of studies conducted in developing and developed countries.

Secondly, it was found that male participants in the 2003 community group experienced a significantly higher rate of depressive symptomatology than the women who were six months postpartum.

Thirdly, the results demonstrated that the postpartum women in the present investigation did not experience a significantly higher rate of depressive symptomatology than those experienced by men and nonpostpartum women in the community. It should be stressed, however, that the rates of depressive symptomatology was extremely high in all the experimental and control groups.

These findings indicate that the postpartum women in the present study are not at an increased risk of depressive symptoms after childbirth. These results call into question the implicit assumption that the first six months after delivery is a time of increased risk for non-psychotic depression among women.

It is important to remember the distinctions described earlier among three different postpartum psychiatric syndromes: maternity blues, postpartum depression and puerperal psychosis. The results of the present study concern only postpartum depression. Thus, the present results call into question only the extent to which depression and depressive symptomatology occur more frequently following childbirth than at other times during women's lives.

A number of issues regarding the controversy of postpartum depression were not addressed in the present study. Firstly, the present study does not address the question as to whether depressive symptomatology during the postpartum period is a continuation of previous psychological distress, or whether the rates of depressive symptomatology are higher postpartum as compared to prenatal depression rates. This question was addressed in a separate study conducted by the Women's Mental Health Research Project at the psychology department at the University of Stellenbosch (Storkey, 2005).

A second issue of concern not addressed in the present study is the validity of the BDI (Beck et al., 1961) for measuring depressive symptoms in a low-income rural community in South Africa. However, the present study was conducted based on the assumption that the BDI (Beck et al., 1961) is a valid measure of depressive symptomatology for low-income cross-cultural communities in South Africa.

Although the prevalence of depression during the postpartum period does not appear to be higher than that experienced by nonpostpartum adults, it does not suggest depression in the puerperium is not an area for concern. Maternal depression has been demonstrated to

result in long-lasting cognitive and emotional shortcomings and developmental problems in the child and negative bonding between mother and child.

The present study has provided relevant information on the statistics on depressive symptoms for a community in South Africa. These results are important as they provide knowledge and awareness of a current problem in all South Africa communities. During the present study it was uncovered that there is a high prevalence rate of depressive symptomatology in a low-income rural South African community. Although the majority of symptoms detected were not severe they are still experienced as distressing, disruptive and costly to the individual, the community and health services. As in other countries, problems of high rates of depressive disorders appear to be complicated by poor detection by general healthcare personnel. Concern has been expressed about high prevalence of depression in developing countries and the need to develop cost-effective intervention strategies. The findings of the present study endorse these concerns in relation to postpartum and community samples.



The present study focused on the mental health needs of a low-income community in the Western Cape, so as to provide epidemiological information on the extent of depressive symptomatology in this community, as well as to investigate the notion of postpartum depression.

#### 6.7 Recommendations for future research

An area of research that requires attention in South Africa is the use of western screening instruments for depression in peri-urban and rural communities. Preliminary information is required on the validity and reliability of the BDI (Beck et al., 1961) as a measure of depressive symptoms in a local South African context. Research on the validity and reliability of the BDI (Beck et al., 1961) is presently being conducted by the Women's Mental Health Research Project at the University of Stellenbosch. The purpose of this

research is to elucidate whether standard depression instruments, for example the BDI (Beck et al., 1961), can accurately measure depressive symptomatology in non-western populations (Coertzen, personal communication, September 21, 2005). .

As the prevalence rates of depressive symptomatology in the postpartum samples and the community samples in the present study were found to be higher than those reported by researchers in both the developed and developing world, factors associated with high depression and depressive symptomatology rates need to be investigated in a quantitative analysis.

Epidemiological studies need to be conducted in rural South African communities in order to determine whether high prevalence rates of depressive symptoms occur nationally. Empirical data is extremely important for the implementation of intervention strategies.

Qualitative research conducted in rural low-income communities In South Africa is also required as medical health professionals and researchers need to understand how individuals in communities experience and understand mental distress. It is essential for researchers to understand how women themselves make sense of their distress and to explore factors that may contribute to resilience in order for psychologists and other health care professionals to design effective intervention strategies.

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## APPENDIX A

## KYLEMORE DEPRESSION SURVEY 2005

## DEMOGRAFIESE BESONDERHEDE

Onderhoudsvoerder: \_\_\_\_\_ Respondentnummer:

\_\_\_\_\_

Huistaal: \_\_\_\_\_ Ouderdom: \_\_\_\_\_ Geslag: \_\_\_\_\_

## 1. HUISHOUDING

Samestelling van huishouding: \_\_\_\_\_

\_\_\_\_\_ Totaal No.: \_\_\_\_\_

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

\_\_\_\_\_

Kinders (geslag en ouderdomme): \_\_\_\_\_

\_\_\_\_\_

## 2. WERK

Werk (tipe / voltyds / deelyds / unemployed):

Self: \_\_\_\_\_

Partner: \_\_\_\_\_

Ouers: \_\_\_\_\_

## 3. INKOMSTE

Self: \_\_\_\_\_ Partner: \_\_\_\_\_ Huishouding: \_\_\_\_\_

**4. GELETTERDHEID**

Gemaklik met lees en skryf: \_\_\_\_\_ Skool tot standerd: \_\_\_\_\_

Ander opvoeding (Universiteit/Kollege/Tech): \_\_\_\_\_

**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 elektrisiteit in 'n huis? \_\_\_\_\_

**7. MAALTYE**

Maaltye gister? \_\_\_\_\_



## APPENDIX B

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  Nee

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.
- Ek het heeltemal belangstelling in seks verloor.



## APPENDIX C

KYLEMORE OPNAME  
VORM VIR OORWOë TOESTEMMING

Beste Deelnemer

Hiermee wil ons u graag versoek om deel te neem aan 'n navorsingstudie wat ondersoek instel na hoe dit met die mense van Kylemore gaan. Ons stel daarin belang om uit te vind hoe die mense van Kylemore oor hulleself, die wereld en die toekoms voel. Indien u bereid is om aan hierdie studie deel te neem, sal ons graag vir u 'n paar vrae oor u lewensomstandighede en u gemoed wil vra. Dit sal tussen 10 en 30 minute duur.



Ons vertrou dat die onderhoud interessant en nuttig sal wees vir elkeen wat aan hierdie studie deelneem. Sommige van die vrae wat gestel word, mag ontstellend wees. U moet asseblief kennis neem dat u die onderhoud te enige tyd kan beëindig, en dat u tydens die onderhoud kan weier om spesifieke vrae te beantwoord. 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 praat, 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.

Om die vertroulikheid van die navorsingsmateriaal te verseker, sal geen name op die vorms geplaas word nie, net nommers. Indien u toestemming gee dat ons u later kontak vir 'n

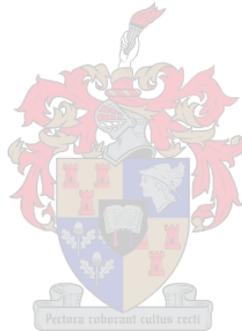
verdere onderhoud, sal ons u naam, telefoonnommer en kodenommer neerskryf sodat ons u later kan kontak. Alle inligting sal dus vertroulik gehou word.

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 navorsing betref, ek die hoofondersoeker, Dr. Lou-Marie Kruger by 808-3460, kan bel.**

\_\_\_\_\_

Handtekening van deelnemer



\_\_\_\_\_

Datum

\_\_\_\_\_

Handtekening van ondershoudvoerder

\_\_\_\_\_

Datum