

## CHAPTER 1

### INTRODUCTION

#### 1.1 Aim of the Study

Postpartum depression (PPD) is a relatively common perinatal mental illness affecting, on average, approximately 13% of postpartum women. The prevalence of PPD is reportedly significantly higher in certain peri-urban areas of South Africa. Furthermore, it is estimated that up to 50% of mothers affected by this illness go undetected. Screening mothers for symptoms of postpartum depression after the birth of their babies is important for the wellbeing of the mother, her infant, and ultimately her entire family. This study aims to address the problem of the unavailability of an Afrikaans screening measure specifically for postpartum depression. The primary objective of this study is to provide an Afrikaans version of an existing postpartum depression screening measure – the Postpartum Depression Screening Scale (PDSS). Another objective of the study was to ascertain the level of agreement between the PDSS and two other self-report screening measures for depression, specifically whether all three screening measures identified the same subgroup of mothers as having major postpartum depression.

The etiology of perinatal mental illness is complex and likely to arise from the interaction of multiple risk factors: biological, psychological, social, and cultural. The final objective of the study is to determine the magnitude of the relationship between a

number of known risk factors for PPD and a positive screen for major postpartum depression.

## **1.2 Contextualising the Research**

The majority of women adapt well to having a new baby and the demands of motherhood. A significant percentage of women are, however, affected by perinatal mental illness. Postpartum depression is one of the more common perinatal mood disorders. The prevalence estimates vary widely and depend on a number of variables, namely, the assessment measure used, the sampling procedure, diagnostic criteria employed, and the location and cultural attributes of the population. In a very poor peri-urban settlement near Cape Town, South Africa, a 34.7% prevalence rate for PPD was reported (Cooper, Tomlinson, Swartz, Woolgar, Murray, & Molteno, 1999). This figure is roughly three times the expected rate internationally. High levels of social adversity were endemic in this South African population and maternal PPD was associated with disturbances in the mother-infant relationship and the absence of support from the woman's partner.

Numerous researchers have examined the risk factors for PPD. Meta-analyses have revealed that PPD develops from the interplay of multiple biopsychosocial and cultural factors (Beck, 1996a, 2001; O'Hara & Swain, 1996). Other researchers point out that biological, obstetric, psychosocial, and personality risk factors are significant (Kruckman & Smith, 2006).

Exposure to extreme societal stressors during the antenatal period, like being in danger of being murdered or witnessing a violent crime, is indicated as one of the strongest predictors of PPD in an urban South African cohort (Ramchandani, Richter, Stein, & Norris, 2009). This study aims to examine which of the known risk factors for PPD were present amongst mothers who screened positive for major PPD.

Research has shown that PPD is likely to have a negative impact on the mother, her infant and her family. In severe instances, it may be potentially devastating culminating in suicide or infanticide.

As a result there has been more focus in recent years on the early recognition of PPD. This is due to findings that early screening and intervention for PPD results in improved outcomes and increases the mother's chance for an earlier recovery (Hanna, Jarman, Savage, & Layton, 2004; Sobey, 2002). This is, however, often challenging as PPD shares certain physical symptoms that are considered normal in the postpartum period, like decreased libido, fatigue, lack of sleep, and appetite changes. PPD is also often experienced covertly making it difficult for health practitioners to identify. In many instances a general practitioner will only casually enquire about a new mother's mental status and is of the opinion that screening takes too much effort (Kumar & Robson, 1984; O'Hara, 1995, Seehusen, Baldwin, Runkle, & Clark, 2005). For these reasons missed diagnoses have been found to be frequent in situations which lack structured methods for evaluating mental health status (Evins, Theofrastous, & Galvin, 2000; Goldsmith, 2007; Reid et al., 1998).

The use of screening scales specifically for postpartum depression in the weeks following childbirth allows for the early detection of mothers who suffer from PPD and referral for appropriate treatment and support. The PDSS is a brief 35-item self-report questionnaire that was developed to help practitioners identify and respond to PPD at an early stage (Beck & Gable, 2000). It was designed to assess the presence, severity and type of PPD by identifying women who are likely to meet the diagnostic criteria for a depressive disorder with postpartum onset, as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000; Beck & Gable, 2002). The PDSS is composed of seven symptom content scales which were derived from C.T. Beck's qualitative research studies on the subjective experience of PPD (Beck, 1992, 1993, 1996c). The PDSS demonstrates excellent psychometric properties (Beck & Gable, 2000, 2001c). The internal consistency reliability for the content scales and the overall scale reliability were excellent. When screening for major or minor PPD, the PDSS demonstrated the highest combination of sensitivity and specificity compared with two other instruments depression screening scales that have been used to screen for PPD (Beck & Gable, 2001a).

To effectively identify women with PPD from different cultures and language groups, there should be no language barrier in the screening process. In any psychological measure, it is important that the respondents understand the language of the assessment measure. Respondents who are not proficient in the language of the measure may introduce construct irrelevant components to the assessment process (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 1999).

The need for psychometrically sound instruments available in an appropriate language for the population being assessed has resulted in substantially more adaptations of instruments for use in multiple cultures and languages (Hambleton, 1994). The considerable cost of test development and an increase in globalisation has led to the widespread use of tests in other countries and an increased interest in cross-cultural research (e.g., Van de Vijver, 2002; Van de Vijver & Poortinga, 1997; Van de Vijver & Lonner, 1995).

The International Test Commission (ITC), under the leadership of Ron Hambleton from the United States of America, released Guidelines for Adapting Educational and Psychological Tests (Hambleton, 1994, 2001; International Test Commission, 2010). They address issues pertaining to the construct equivalence in the target language groups, guidelines pertaining to the methodology employed in instrument development and adaptation, guidelines pertaining to the administration process and procedures, as well as guidelines for score interpretations.

A number of other professional bodies have subsequently also provided clear standards and guidelines that need to be adhered to when using psychological tests. These include the Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 1999) and the Guidelines for Computer-based Tests and Interpretations (APA, 1986). The ITC later also developed the “International Guidelines on Test Use – Version 2000” (ITC, 2000) and the “International Test Commission Guidelines for Translating and Adapting Tests – Version 2010” (International Test Commission, 2010) to address issues of fairness and bias in test use and set standards for

the professional practice of assessment. These guidelines have become the benchmark for cross-cultural test adaptation around the world (Foxcroft, Roodt, & Abrahams, 2006).

Translation is an important component of the adaptation process. The goal of translating an instrument is to obtain another version of the instrument that is conceptually equivalent, with the same connotative meaning, to the original instrument. In cross-cultural research the linguistic translation as well as the cultural translation is important to produce an instrument that is equally valid in different languages and cultures.

In order to determine the cultural appropriateness of an instrument, it is imperative that item bias, differential item functioning, and construct equivalence be examined for the different groups (Foxcroft et al., 2006). Bias and equivalence are essential concepts in cross-cultural assessment. Equivalence (or the lack of bias) is a prerequisite for valid comparisons across cultural populations (Van de Vijver & Tanzer, 1997). The equivalence of an instrument's scores is challenged when bias is present (Van de Vijver, 2002). Attaining equivalence across different cultures and language versions of instruments is perhaps the central issue in cross-cultural comparative research (Van de Vijver, 2001; Van de Vijver & Leung, 1997b).

The translation methodology used is important as it has an impact on the equivalence of the different language versions and the instrument's cross-cultural validity. It must also be ensured that the instruments' testing instructions are translated using the same methodology as the items (Ægisdóttir, Gerstein, & Cinarbas, 2008).

A variety of translation techniques have been developed for adapting, translating, and re-norming psychological instruments for use in other cultures and languages (Ferraro, 2002; Fletcher-Janzen, Strickland, & Reynolds, 2000; Nell, 2000). These include back-translation, one-way translation, forward translation, parallel-blind translation, modified direct translation, pilot-testing, field testing, random probe, a committee approach, and decentering.

Researchers may opt to use one of three different translation procedures, namely, application, adaptation, and assembly (Van de Vijver & Leung, 1997a, 1997b). Application involves the literal translation of an instrument, assuming that the underlying construct is appropriate for each cultural group. Adaptations are appropriate when the translated version is open to changes in items and the addition of items to ensure construct equivalence is maintained and to eliminate bias (Van de Vijver & Tanzer, 1997). Assembly is used when an instrument requires dramatic adaptation from the original due to differential item functioning for the majority of items or aspects of the construct being measured, although salient for some cultures, are not covered by the instrument.

The various guidelines for adapting instruments together with the translation techniques and procedures for assessment across languages and cultures are important to eliminate bias and ensure construct equivalence. Careful consideration must also be given to the cultural applicability of the constructs being measured by an instrument (McGorry, 2000), in this case, the symptoms of PPD.

Childbirth and the transition to motherhood occur in a socio-cultural context, which is experienced and conceptualized in accordance with the mother's values, beliefs, and attitudes. Cultural factors, along with social, psychological, and biological perspectives must therefore be taken into account to fully comprehend PPD and its symptom definition and expression across different cultures (Bina, 2008; Cox, 1999; Leung, 2002). Although many studies across different countries have indicated that PPD is a universal experience, cultural attitudes, beliefs, ways of thinking, and cultural norms for behaviour and emotional responses influence how a mother experiences PPD, how she describes the symptoms, and how she seeks help. In different socio-cultural contexts the manner in which a mother's depression is confronted, discussed, and managed may vary. Some cultures have their own indigenous definitions for PPD along with explanations of its etiology (Bashiri & Spielvogel, 1999). Furthermore, the course of PPD is influenced, either positively or negatively, by cultural beliefs, meanings, and practices (Bina, 2008; Furnham & Malik, 1994; Kleinman, 2004). Cultural factors must therefore be taken into account when screening for PPD, and will be considered in this study.

This study aims to provide an Afrikaans version of the PDSS. The context within which this study was conducted concludes with a history of the Afrikaans-speaking people, the development of the Afrikaans language, and demographic features of the Afrikaans population in South Africa today.

It is believed that this study will make a contribution towards improving the screening of postpartum depression in Afrikaans-speaking South African women. This study will also provide valuable psychometric information for the Afrikaans version of

the PDSS and provide information about the risk factors for PPD in a South African sample.

### **1.3 An Overview of the Research Method**

Translation of the PDSS into Afrikaans was performed using a multiple translation technique: Brislin's back-translation method advocated by Brislin (1970) and the committee approach. A combination of the committee approach and the back translation technique has often been used by researchers (Van de Vijver & Leung, 1997b). The back-translation method was selected as it is regarded to be especially useful in cross-cultural research for checking the equivalence of the translations of measures in different languages (Bracken & Barona, 1991; Prieto, 1992). The committee approach has the advantage of a collaborative effort from a group of experts who have an input in the translation process. This improves the quality of the translation, reduces bias, and reduces misconceptions that a single person may bring (Ægisdóttir et al., 2008). This is especially true if the members have complimentary areas of expertise (Van de Vijver & Tanzer, 1997). Utilising a multiple translation method has been recommended to ensure semantic equivalence (Beck, Bernal, & Froman, 2003).

An IRT model, specifically the Rasch rating scale model is employed in this study as implemented by Winsteps (Linacre, 2009). Fundamental assumptions of the Rasch model are that the items assess a single or unidimensional construct and that the difference between person ability and item difficulty should determine the probability of any person being successful on any particular item. Person location (or person logit) and

item location (or item logit) are the two parameter estimates within the Rasch model. The Rasch model places person and items on a common logit scale to provide equal-interval measures. This allows for more accurate determination of means, variances, and reliability (Schumacker, 2004; Smith, 2004).

Rasch analysis is performed on the 35-item PDSS and its Afrikaans translation to determine how well the items define the underlying construct of postpartum depression in a South African sample. Rasch analysis is also performed on each of the seven dimensions of the PDSS to determine how adequately the attitude continuum which underlies each dimension is assessed. The overall fit of the data to a one-dimensional model is determined. If the data demonstrates a good fit to the model then the responses from individuals should correspond well with the responses that are predicted by the model.

The assessment of unidimensionality is an important determinant of the scale's internal construct validity (Hong & Wong, 2005). Unidimensionality is ascertained by a Rasch principal components factorial analysis of the residuals as well as by analysis of fit statistics or indices (mean-square infit and mean-square outfit). Individual item-fit indices and Pearson item-total correlations ( $r_{it}$ ) are examined as they indicate the degree to which the individual items define a unidimensional construct. Rasch analysis provides information on reliability estimates for the PDSS and Afrikaans PDSS in a South African sample. Invariance is determined through analysis of Differential Item Functioning (DIF). The category functioning of the PDSS and its Afrikaans translation is determined through Rasch analysis.

Convergent validity, an important aspect of construct validity, is examined to ascertain whether the PDSS correlates positively with other self-report screening scales for depression, namely the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987) and the 16 item Quick Inventory of Depressive Symptomatology (QIDS; Rush et al., 2003). The EPDS was developed to screen specifically for postpartum depression and is the most widely used screening questionnaire for PPD. The QIDS was designed to measure the severity of depressive symptoms, including all the criterion symptom domains required for the diagnosis of a major depressive episode as designated by the American Psychiatry Association Diagnostic and Statistical Manual of Mental Disorders - 4th edition (DSM-IV; APA, 1994). The QIDS has been used to examine the differences in the clinical features between postpartum and non-postpartum women and was considered a useful measure in the assessment of PPD (Bernstein et al., 2008).

The relationship between known risk factors for PPD and high scores on the PDSS amongst women in South African is determined through multiple regression analysis. Pearson's product-moment correlation is used to measure the associations among the scores on the PDSS, the EPDS and the QIDS.

#### **1.4 Orientation**

This study is presented in nine chapters. Chapter one has covered the aim of this study, the contextualisation of the research, given an overview of the research methodology employed, and an outline of the orientation.

Chapter 2 provides an overview of the types of perinatal mood disorders with a focus on the symptoms, prevalence and clinical course of PPD. Furthermore, the perspectives on the etiology of PPD as well as the risk factors and consequences of PPD are outlined.

Chapter 3 describes the importance of screening postpartum women for PPD in light of the fact that PPD may have serious implications for the mother, her infant, and the entire family. This chapter provides a review of screening measures available that assist in assessing, identifying and treating mothers who present with PPD. The PDSS is discussed in more detail with respect to its conceptual basis, psychometric properties, and comparative analysis of the performance of the PDSS with two other depression instruments.

Chapter 4 addresses cross-cultural assessment with a brief discussion of multicultural assessment in South Africa. Factors that influence cross-cultural assessment and methodological considerations for cross-cultural assessment are outlined. A review of the ethical guidelines for adapting cross-cultural assessment follows. Finally the different techniques and procedures that researchers use to prepare target language versions of existing instruments are described.

Chapter 5 explores some cultural approaches to the understanding of childbirth and related mental disorders as well as how these impact on adapting a postpartum depression screening measure cross-culturally.

Chapter 6 focuses on the history of the Afrikaans-speaking people, the development of the Afrikaans language, and demographic features of the Afrikaans population in South Africa today.

Chapter 7 presents the primary objectives of the study and the methods employed in conducting the study and analysing the results. The main features of the Rasch model are presented along with the advantages of using item response theory (IRT) techniques, like Rasch analysis, as opposed to classical test theory (CTT) based statistical models.

Chapter 8 begins with an overview of the descriptive statistics. The results of the Rasch analysis for the PDSS and the Afrikaans PDSS are presented and discussed next. This is followed by a presentation of the risk factors for PPD in this sample. Finally the comparative analyses of the PDSS, the QIDS-SR and the EPDS are presented.

Chapter 9 considers the major insights gained in the study as well as limitations and recommendations for future research.