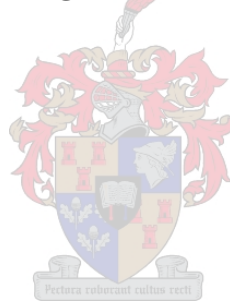


THE PREVALENCE AND FACTORS INFLUENCING POSTNATAL DEPRESSION IN A RURAL COMMUNITY

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DECLARATION

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ABSTRACT

Mental health is still the step-child of Health Services, although many studies show the serious negative impact it has on the mother, baby and the family.

Knowledge about Postnatal Depression (PND) and associated risk factors which influence the development of PND is vital for early detection and intervention.

Worldwide PND affects on average 10-15% of women after giving birth regardless of socio-economic status, race or education. Studies also reveal that the prevalence of PND is as high as 40-60% amongst women after giving birth.

The goal of the study was to investigate the prevalence and factors influencing PND in a rural setting, in the Witzenberg Sub-district. The objectives included determining the prevalence of PND and identifying the contributing risk factors associated with PND.

A descriptive explorative research design with a quantitative approach was applied. The target population was (N=1605) mothers, 18 years and older who gave birth in this Sub-district in one year, A convenience sampling method was used to select the study sample of (n=159/10%) participants who met the criteria and who gave voluntary permission to take part in the study.

Validity and reliability was supported through the use of validated questionnaires EPDS and BDI including a questionnaire based on demographical, psychosocial and obstetrical data. In addition experts in statistics, nursing and psychiatry were consulted including language experts who validated the correctness of the Afrikaans and Xhosa translated questionnaires. A pilot study was conducted to test the feasibility of the study and all data was collected personally by the researcher with the support of two trained field workers.

Ethics approval was obtained from Stellenbosch University and permission from the Department of Health, Provincial Government of the Western Cape, including informed written consent from each participant.

The data was analysed with the assistance of a statistician and are presented with histograms and frequency tables. The relationship between continuous response variables and nominal input variables was analysed using analysis of variance (ANOVA). Various statistical tests were applied to determine statistical associations between variables such as the chi-square tests

using a 95% confidence interval. Non-parametric tests such as the Mann-Whitney U-test or Kruskal-Wallis test were used for randomised design. Levene's test was used for Homogeneity of Variance and the Bonferonni test of probability.

The study revealed that 50.3% of the mothers, who participated in the study, had PND. Various risk factors were determined in this study that influences the development of PND. Results include statistical associations between PND and the following:

- unplanned babies and unwelcome babies ($p < 0,01$)
- life events ($p = 0.01$)
- partner relationship ($p < 0.01$)
- family and social support ($p < 0.1$)

Furthermore, the majority of the participants (53.8%) with PND ($n = 80$) had a history of a psychiatric illness which was shown with significance ($p < 0.01$), the majority of the participants (63.5%) were unmarried and 23.8% were teenagers who suffered from PND.

Recommendations include promoting healthy lifestyles, empowerment of women, prevention of teenage pregnancies, early and holistic assessment for symptoms of PND and appropriate referral.

In conclusion the prevention and promotive measures, early detection of PND and appropriate referrals and treatment are critical in managing maternal, child and family well being.

OPSOMMING

Geestesgesondheid blyk die stiefkind van gesondheidsdienste te wees, ten spyte daarvan dat navorsing die negatiewe impak wat dit op moeder, baba en die gesin het bevestig.

Kennis van postnatale depressie (PDN) en verwante risiko faktore wat die ontwikkeling van PND beïnvloed is van uiterste belang vir die vroeë opsporing en ingryping daarvan.

PND affekteer gemiddeld 10%-15% van vroue wêreldwyd wat dit ervaar nadat hulle geboorte geskenk het, ongeag sosio-ekonomiese status, ras of opleiding. Navorsing dui daarop dat die voorkoms van PND so hoog is soos 40%-60% onder vrouens nadat hulle geboorte geskenk het.

Die doel van hierdie studie was om die prevalensie van PND en die faktore wat PND beïnvloed in 'n landelike nedersetting in die Witzenberg Subdistrik te ondersoek. Die doelwitte sluit die bepaling van die prevalensie van PND in en die identifisering van die risiko faktore wat daartoe aanleiding gegee het.

'n Beskrywende verkennende navorsingsontwerp met 'n kwantitatiewe benadering is toegepas. Die teikengroep was (N=1605) moeders, 18 jaar en ouer wat geboorte geskenk het in hierdie subdistrik binne een jaar. 'n Gerieflikheidssteekproef metode is gebruik om die deelnemers (n=159/10%) te selekteer wat aan die kriteria voldoen het en vrywillig toestemming gegee het om aan die studie deel te neem.

Geldigheid en betroubaarheid is gerugsteun deur die gebruik van geldige vraelyste, naamlik EPDS en BDI wat 'n vraelys insluit wat gebaseer is op demografiese, psigososiale en verloskundige data. Hierbenewens is deskundiges in statistiek, verpleegkunde en psigiatrie geraadpleeg, asook taalkundiges wat die taalkorrektheid van Afrikaans en Xhosa vertaalde vraelyste nagegaan het. 'n Loodsondersoek is uitgevoer om die haalbaarheid van die navorsing te toets en alle data is persoonlik deur die navorser met die hulp van 'n opgeleide veldwerker ingesamel.

Etiese goedkeuring is verkry van die Universiteit van Stellenbosch en toestemming van die Departement Gesondheid, die Provinsiale Regering van die Wes-Kaap, asook skriftelike toestemming van elke deelnemer.

Die data is ontleed met die bystand van 'n statistikus en is deur frekwensie tabelle aangebied. Die verhouding tussen volgehoue/aaneenlopende respons veranderlikes en nominale inset/invoer veranderlikes is ontleed deur gebruik te maak van die analise van variansie (ANOVA). Verskeie statistiese toetse is toegepas om die statistiese assosiasies tussen veranderlikes vas te stel soos die chi-kwadraat toetse deur 'n 95% betroubaarheidsinterval te gebruik. Nie-parametriese toetse soos die Mann-Whitney U-toets of Kruskal-Wallis toets is gebruik vir ewekansige ontwerp. Levene se toets is gebruik vir homogeniteit van variansie en die Bonferonni toets vir waarskynlikheid.

Die toets het bewys dat 50.3% van die moeders wat aan die studie deelgeneem het, het PND. Verskeie risiko faktore is in hierdie studie vasgestel wat die ontwikkeling van PND beïnvloed. Resultate sluit statistiese assosiasie tussen PND en die volgende in:

- onbeplande babas en onwelkome babas ($p < 0,01$)
- lewensgebeure ($p = 0.01$)
- lewensmaat verhoudings ($p < 0.01$)
- familie en maatskaplike ondersteuning ($p < 0.1$)

Vervolgens het die meeste van die deelnemers (53.8%) met PND ($n=80$) 'n geskiedenis van 'n psigiatriese siekte met 'n beduidenis ($p < 0.01$), die meeste van die deelnemers (63.5%) is ongetroud en 23.8% is tieners wat aan PND ly.

Aanbevelings sluit die bevordering van gesonde leefstyle, die bemagtiging van vrouens, voorkoming van tienerswangerskappe, vroeë en holistiese assessering van simptome van PND in en die aangewese verwysing.

Daar kan tot die slotsom gekom word dat voorkoming- en bevorderingsmaatstawwe, vroeë opsporing van PND en aangewese verwysings en behandeling, krities is in die hantering van moeder-, kind- en gesinswelstand.

DEDICATION

To my late mother and father, who lay the foundation of my life, as well as to my husband Trevor and our children to whom I am infinitely grateful for their love, support and consideration.

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ABBREVIATIONS AND ACRONYMS

PANDA	Post and Antenatal Depression Association
WHO	World Health Organization
UNFPA	United Nations Population Fund
EPDS	Edinburgh Postnatal Depression Scale
BDI	Beck Depression Inventory
PND	Post Natal Depression
NGO	Non Governmental Organization
CSP	Comprehensive Service Plan
CWD	Cape Winelands District
NSF	National Service Framework

CHAPTER 1: SCIENTIFIC FOUNDATION OF THE STUDY

1.1 INTRODUCTION

The World Health Organization (WHO) predicts that depression will be the second greatest cause of premature death and disability worldwide by the year 2020 (WHO, 2008:2). The prevalence of postnatal depression (PND) is currently considered to be 10%-15%, but is still increasing and becoming a serious public health problem (WHO, 2008:3). A study in a South African peri-urban settlement, Khayelitsha, identified the prevalence of PND as high as 34.7% at two months postnatal (Tomlinson, Cooper, Stein, Swartz and Molteno, 2006:83). According to Halbreich and Karkun (2006:97-111), in some countries such as Singapore, Malta, Malaysia, Austria and Denmark there are very few reports on PND or postpartum depressive symptoms, where as in countries such as Brazil, Guyana, Costa Rica, Italy Chile, South Africa, Taiwan and Korea, it is very predominant. The studies demonstrated a wide range of PND from almost 0%-60%. Groenewald (2006:60) identified that in the Witzenberg Sub-district there is a marked increase in mental health users from 347 in 2001 to 491 in 2006.

According to Ramchandani, Richter, Stein and Norris (2009:279-284), 16% of women will most likely experience PND during the postpartum time.

1.2 RATIONALE

Postnatal depression (PND) is a universal and serious mood disorder that occurs within a few weeks after birth and causes considerable risks to the mother, the developing child and the entire family (Horowitz and Goodman, 2004:264-273). It has long been known to compromise a mother's capacity to optimally care for her newborn. She no longer enjoys activities that she is used to and struggles to function normally (Nauert, 2009:24-26).

In rural areas the resources such as psychiatric nurses, psychologists, occupational therapists and psychiatrists are limited. Most of the times the primary health care nurses are the only service providers. Consequently, prevention of PND is a priority and has become challenging.

None of the previous research on PND concentrated on the incidence of postnatal depression in a rural area. By doing this study, the researcher will evaluate the prevalence and associated risk factors of PND in a rural setting. The Annual Health Status Report of 2006 of the Department of

Health, shows a marked increase in mental health users in the Witzenberg Sub-district. The statistics of PND increased from 347 in 2001 to 491 in 2006 in the Witzenberg as described above by Groenewald (2006:60). These are matters of concern to the researcher, who previously worked as a primary health care nurse in the clinics and currently works as a psychiatric nurse. She is responsible for the psychiatric service delivery in the district hospital, Witzenberg Sub-district, Cape Winelands District (CWD). The significance of this research project will thus be to identify the incidence of PND, and to investigate the contributing risk factors in a rural area. This will enable these health care providers to identify patients at risk more readily and manage the condition more appropriately.

The doctors are positioned at the district hospitals some kilometers away from the rural clinics. The psychiatrist only visits the hospital monthly for outreach and support. The referral psychiatric hospitals are 50km-150km from the sub-district. Consequently, the visiting community psychiatric professional nurse has to do the initial assessment for PND or the professional nurse at the primary health care clinic often refers the patient to the psychiatric professional nurse. The mental health nurses often have to determine whether a patient requires intervention and also plan the care accordingly.

According to Ramchandani, Richter, Stein and Norris (2008:279-284) and Cooper, Tomlinson, Swartz, Landman, Molteno, Stein, McPherson and Murray (2008:2), in their studies regarding PND in Khayelitsha, depression, anxiety, stressful life events and low levels of social support were identified as key maternal risk factors in this area. In children of mothers who experienced PND, an increasing risk of emotional, behavioural, cognitive, impairment in mother-infant interaction, including other physical health problems were detected. Cooper et al. (2008:1-8), in their research in Khayelitsha, confirms these serious consequences of PND. An increased rate of insecure attachment and impaired cognitive development was found in especially boys, as well as an elevated rate of behavioural and emotional problems that may, if not addressed, lead to more serious problems later in life. This research also supports that of Davies, Howells and Jenkins (2003:249) that PND is prevalent in all cultures. Bina (2008:568-592), confirms that cultures have different rituals and beliefs and these may affect the severity of PND.

Although 10%-15% of mothers (Tammentie, Tarkka, Astedt-Kurki and Paavilainen, 2002:240), and 10%-20% women world-wide are affected by PND (Sellers, 2008:580), PND is still an under diagnosed condition. According to Horowitz & Goodman (2004:265), PND affects approximately 500,000 mothers in the United States each year and about one in five mothers may be affected

by a major mental disorder in the first 12 months following childbirth. Therefore, if PND is left untreated, it can lead to affective, cognitive, behavioural and physical problems. This may not only have an extremely negative effect on the mothering role and mother-child relationship, but on the total existence of the affected mother's family (Robertson, Allwood & Gagliano, 2005:278). Some of the signs and symptoms of PND in a mother may include bouts of crying, melancholy, emotional lability, guilt, anxiety, feelings of inadequacy and over-anxiousness about her baby in spite of evidence that the baby is thriving. Physical problems include sleeping problems and loss of appetite (Jacob, 2008:483). According to Frisch and Frisch (2002:257), depression may rapidly transform a person from relatively normal function to psychosis, but with early recognition and treatment, it can be prevented.

According to Edwards, Galletly, Semmler-Booth and Dekker (2008:45-50), all women who give birth are very vulnerable, but the logistic regression analysis for psychosocial risk factors shows the following results:

- 88% of women demonstrate at least one psychosocial risk factor
- 35.6% were abused as children
- 34.9% had suffered recent major life stresses
- 24.5% had thoughts of self-harm
- 8% admitted to recently hitting or hurting someone in anger and
- 5% had been victims of violence since becoming pregnant.

The lack of statistics on the CWD of the Western Cape Province, together with the information as described above, provide enough evidence for further research into this problem within this district. The Annual Health status report of CWD, confirms the significance of the study. It is therefore important that PND be addressed through women's health- and child health services. Consequently, early detection and treatment could be enhanced to ensure a positive outcome of healthy families.

1.3 SIGNIFICANCE OF THE STUDY

By completing this research it may contribute to the improvement of the mental health services of the District. The research has the potential to assist in early detection and management of PND, specifically with the implementation of the 2008/2009 Comprehensive Service Plan (CSP), with specific reference to Psychiatry (Department of Health, 2008:189-200).

1.4 PROBLEM STATEMENT

In view of the above, the lack of scientific evidence about the prevalence and factors contributing to PND in the Witzenberg Sub-district, has made it essential that this problem be investigated scientifically.

1.5 RESEARCH QUESTION

According to Polit, Beck and Hungler (2001:97), a research question refers to a statement of the specific enquiry that the researcher wishes to address. The research question which guided this study was: **What is the prevalence of PND and the factors contributing to PND in the Witzenberg Sub-district of the Western Cape Province?**

1.6 GOAL OF THE STUDY

The goal of this study was to investigate the prevalence of PND and the factors contributing to PND in a rural area, the Witzenberg Sub-district of the Western Cape Province.

1.7 OBJECTIVES

The objectives for this study were to determine the:

- prevalence of PND in the Witzenberg Sub-District
- risk factors associated with PND in the Witzenberg Sub-District

1.8 RESEARCH METHODOLOGY

In this chapter a brief discussion on the research methodology applied is described, a more in-depth approach is described in chapter 3.

1.8.1 Research design

A descriptive and exploratory research design with a quantitative approach was applied in this study.

1.8.2 Population and sampling

The target population for this study was (N=1605) based on the mothers of all births during 2008/2009 in the Witzenberg Sub-district. Therefore, a sample (n=159/10%) of mothers was drawn through convenience sampling according to the criteria for participation in the study.

1.8.2.1 Specific criteria

- Mothers who lived in the Witzenberg Sub-District

- Mothers who gave birth during 2010
- Mothers who participated had to be at 6, 10 and 14 weeks postnatal
- Mothers 18 years and older because these mothers are regarded as adults and are able to give consent independently

1.8.3 Data collection tool

Data were collected by utilizing the following instruments:

- A questionnaire was designed based on the objectives, literature study and experience of the researcher (Annexure F)
- The Edinburgh Postnatal Depression Scale (EPDS) to identify participants with PND (Annexure G)
- The Beck Depression Inventory (BDI) to test the severity PND after identification with the EPDS. (Annexure H).

1.8.4 Pilot study

A pilot study was conducted using (n=15/10%) of the actual sample of the main study according to the criteria. It was conducted under the similar conditions as the main study at a clinic not included in the study.

1.8.5 Reliability and validity

The reliability and validity was ensured through the use of experts in the fields of statistics, nursing and research methodology, including a pilot study. A language expert validated the translated questionnaires.

1.8.6 Data collection

The researcher with the support of two field workers collected the data personally. A structured interview was conducted for collection of the data using data collection tools.

1.8.7 Data analysis

All data was analysed and interpreted with the help of a qualified statistician from the University of Stellenbosch. A computer software program, STATISTICA, was used. Data were expressed in frequencies and tables and Statistical tests such as the chi-square was applied to determine associations between various variables.

1.9 ETHICAL CONSIDERATIONS

The researcher obtained written permission from the Committee for Human Science Research of the Faculty of Health Sciences, Stellenbosch University (Annexure D). The researcher also received written consent from the Research Coordinating Committee of the Department of Health, Provincial Government of Western Cape (Annexure E). Voluntarily informed written consent was obtained from all participants in their preferred language namely English, Afrikaans or Xhosa and they were assured that their signatures were only obtained for consent purposes (Annexure A, B & C).

The proposed research study adhered to the ethical principles of The Declaration of Helsinki, World Medical Association (WMA) (2008:1-5).

1.10 DEFINITIONS

Depression: According to Frisch and Frisch (2006:883), it is a state in which an individual experiences an intense feeling of sadness, hopelessness, has no drive or sense of future.

Major Depression Episode: The DSM-IV-TR makes a fundamental distinction between a mood episode and a mood disorder. A mood episode is the experience of of a strong feeling of depression, mania, or a combination of both for a period of at least two (2) weeks. The symptom must be present newly or have obviously worsened over the pre-episode state and must be present almost every day for the utmost of the day for two (2) continuous weeks Frisch & Frisch (2006:262)

Mental disorder: The psychological syndrome or behaviour or pattern related with distress or disability or increasing risk of suffering, pain, death or loss of freedom, Frisch and Frisch (2006: 883).

Postnatal Depression (PND): Is depression after child birth. It often starts in or after the third week of delivery. It is a more serious form of emotional distress and appears rather later than the “blues”. The derivations of PND sometimes can be visible during the postnatal period or sometimes referred to as puerperium, but are frequently only fully recognizable months later in the first year after birth. This depression may last for weeks, months or even years after origination, according to Sellers (2008:580).

Postnatal psychosis: According to Robertson et al. (2005:79), postnatal psychosis is not a separate illness, but one of the major psychotic disorders that manifests, perhaps for the first time, during the postnatal period.

Puerperium: According to Leifer (2008:224), the puerperium, also known as the postpartum period, is the period six (6) weeks from the birth of the child to the restore of the uterus and other organs to a prepregnant state.

1.11 CHAPTER OUTLINE

The chapter outlay of the thesis is as follows:

Chapter 1: In this chapter a brief introduction, the rationale for the study, problem statement, research question, the goal, objectives, a synopsis of the methodology applied and ethical considerations are described.

Chapter 2: A literature review related to PND and conceptual theoretical framework is described in this chapter.

Chapter 3: A more in depth description of the research methodology is discussed in this chapter.

Chapter 4: The data analysis, interpretation and discussion applicable to the analyses are explained in this chapter.

Chapter 5: In this chapter the conclusions and the recommendations based on the scientific evidence obtained in the study are described.

1.12 SUMMARY

The prevalence of postnatal depression (PND) is currently considered to be 10%-15%, but is still increasing and becoming a serious public health problem (WHO, 2008, 2-3). As stated a study in a South African peri-urban settlement, Khayelitsha, identified the prevalence of PND as high as 34.7% at two months postnatal (Tomlinson et al. 2006:83). In the Witzenberg District psychiatric service users are becoming a growing concern as described in an annual report of the area under study in which it is shown that the psychiatric service users have increased from 347 in 2001 to 491 in 2006 (Groenewald, 2006:60).

1.13 CONCLUSION

In this chapter the researcher described the background and rationale for the study, including the goal and objectives and a brief overview of the methodology applied in the study. The literature review will be discussed in the following chapter.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The literature review conducted describes specific aspects related to PND including a conceptual framework. It gives an overview of the literature with regard to the prevalence of postnatal depression. In addition, the symptoms of PND and the possible predisposing risk factors thereof are also described.

2.2 REVIEWING AND PRESENTING THE LITERATURE

According to Burns and Grove (2009:92), the purpose of a literature review in quantitative research is to direct and give depth to the study. The sources for the literature review of this study are theoretical and empirical. The theoretical component consists of theories, models and conceptual frameworks while the empirical component consists of sources from various studies published in journals, books and theses.

2.3 OVERVIEW OF POSTNATAL DEPRESSION (PND)

According to Stewart, Robertson, Dennis, Grace and Wallington (2003:4), postnatal depression is a fundamental public health problem and affects about 13% of women within a year of the birth of a child. Although levels of depression do not seem to be higher in women in the period after childbirth compared to age matched control women (10-15%), the levels of first onset and severe depression are raised by at least three-fold. The level however in teenage mothers have been reported to be as high as 26% (Stewart et al. 2003:58).

This is substantiated further by Fraser and Cooper (2009:691), who indicate that almost 10% of all postnatal mothers will acquire a depressive disorder, while Ramchandani et al. (2009: 279-284), found that it is most likely to occur in 16% of women during the postpartum time.

Mental disorders, especially major depression, add extensively to the non-fatal burden of disease and are the second leading cause of mental disabilities. Mental illness is one of the most neglected illnesses in South Africa. In SA the ratio between psychiatrist and patient/client is 1: 357 142 and psychologist and patient/client is 1: 312 500 (Moultrie and Kleintjes, 2005:347-365).

According to Chew-Graham, Chamberlain, Turner, Folkes, Caulfield and Sharp (2008:1-13), PND is one of the main diagnoses in the National Service Framework (NSF) for Mental health.

The significance of this public health challenge is that it affects up to 15% of women, and may lead to long-term adverse effects for maternal mood and child development.

Currò, De Rosa, Maulucci, Maulucci, Silvestri, Zambrano & Regine (2009:1-2), states that PND is a severe condition, which can be described as “a thief who steals maternity”. Up to 50% of the cases are diagnosed, and almost 49% of women who go for help are severely depressed. According to Darcy, Grzywacz, Stephens, Leng, Clinch and Arcury (2011:249-257), nearly one third of employed participants (32,7%) in their study stated substantial depressive symptoms at four months postnatal.

Furthermore, Nauert (2009:24-26), states that it is fairly evident that PND will influence the mother’s capability to care for her baby. The researcher further also found that the babies of the mothers who suffer from PND scored the poorest on all outcome measures after nine months. Crawford and Hickson (2000:45), state that Falkov already in 1996 showed that the greater part of fatal child abuse incidence happens in families with mental disorders.

Herrera, Reissland and Shepherd (2004:29-39), further confirms that depressed mothers in contrast with non-depressed mothers boosted their infants more and condoning their behaviours. Compensating for the lack of positive touch from their mothers, infants of depressed mothers in contrast to infants of non-depressed mothers spent larger periods of time in touching self rather than mother or toy. The 6-month-old infants of mothers with depressed mood encompassed fewer affective and informative features in their speech than their counterparts.

2.4 THE PUERPERIUM

According to the WHO the first 28 days after birth is referred to as the neonatal period and the post-partum period commences an hour after the delivery of the placenta, and this period ends six weeks after birth (WHO, 1998:7). However, despite this definition it has become a known fact that a mother may experience PND symptoms after birth and can prolong until 16 months after birth as shown in a study by Darcy et al. (2011:249-257).

Fraser, Cooper and Nolte (2009:642), define the puerperium as the period from birth to six to eight weeks postnatal, during which the woman physiologically and psychologically adjusts to

motherhood. Leifer (2008:224) defines the puerperium, also known as the postpartum period, as the 6-weeks interlude commencing from the birth of the child to the return of the mother's uterus and other organs to what it was before the pregnancy. An *arbitrary* period separates the phase into immediate postpartum (within the first 24 hours), early postpartum (the first week), and late postpartum (within the second to sixth week).

During this period, the husband or partner and other family members will be confronted with a time of challenges and adjustments. These can be made easier and it can be the most blissful time, or it can cause misery and lead to anxiety, stress and depression. The outcome depends on prenatal preparation and postnatal support (care and guidance), given to the mother and her family, according to Sellers (2008:583).

2.5 CATEGORIES OF POSTNATAL MOOD DISORDERS

According to Runyion (2011:3), postnatal mood disorders are normally divided into three categories: postnatal blues, also known as "baby blues", postnatal depression and postnatal psychosis.

2.5.1 Postnatal blues

These occur in 50% to 70% of all new mothers. Most mothers who experience this recover within 3-5 days after birth.

2.5.2 Postnatal depression

Postnatal depression is the second type which occurs in approximately 10% of new mothers. Signs and symptoms normally occur soon after birth, but may be seen even as late as one year thereafter. PND is a serious mental disorder in women and, if not detected and treated early, may be harmful to mother, baby and the entire family.

2.5.3 Postnatal psychosis

The third type of PND is postnatal psychosis and may happen in 1% - 2% of new mothers in their postnatal period. This condition is very dangerous to the life of both the mother and baby. Although infanticide is rare, it does occur in 1 out of 250, 000 mothers after birth. (Runyion, 2011:3).

According to Leifer (2008:346), the woman who suffers from this condition has at risk herself as well as her new born baby. Kneisl and Trigoboff (2009:412), state that women

with a previous postpartum mood episode with psychotic features or with a family history of bipolar disorder have an increased risk of the condition.

2.6 ETIOLOGY

According to Runyon (2011:8), the incorporation of many factors such as integration of biochemistry, hormonal functioning, genetic history and psycho-social factors such as stressful life events concedes the potential for the occurrence of PND. The consideration of the effect of the brain chemistry of the female reproductive events is important in any assessment of depression in women. Chan, Williamson and McCutcheon (2009:108-117), confirm that hormonal changes during pregnancy and childbirth can cause PND.

2.7 PSYCHOPATHOLOGY OF PREGNANCY AND CHILDBIRTH

According to Fraser et al. (2009:643), it is alarming that psychotic illnesses are increasing steeply and the incidence of mild and moderate PND are decreasing after giving birth. They further state that childbirth increases the risk of reappearance of PND by women with previous mental illnesses and for women with chronic illnesses such as schizophrenia. These mothers are at an even greater risk for a relapse and may have a problem caring for their baby. Fraser et al. (2009:645), further state that although many mothers may recover by about six months, results however show that 30% of women will stay ill at one year and over 10% at two years postnatal.

According to Tomlinson, Cooper and Murray (2005:1044-1054), the effects of poverty and the disparities in South Africa are apparent across all components of child development. Children are subjected to poor growth, underdevelopment and tend to quit school at an early stage. The study further shows the incidence of such difficulties is linked with child psychological interruption as shown in a study of children in Khayelitsha, which found that 40% of these children had one or more psychiatric illnesses. The outcomes of these turbulences in the mother-child liaison are short-tempered and inhibit children who may probably develop unstable bonding, preventing good mother-child relationships.

According to Tomlinson et al. (2005:1044-1054), the incidence of PND is 34% at 2 months and 12.4% at 18 months postnatal. It shows that in the group of insecure child attachment, 54.1% of mothers encounter PND at 2 months in relation to the 28.3% of PND of secure connected children.

Emotional disturbances after birth as described by Sellers (2008:580), can be classified in three ways:

- “The Blues” are experienced in about 80% of all new mothers
- Depression is more severe and affecting approximately 10-20% of women world-wide
- Psychosis is very rare and occurrence is about 1%

According to Fraser et al. (2009: 646), there is a five times greater risk for women to be referred to a psychiatrist in the year after birth, than at any other time in their lives. The risk factor profiles for antenatal depression, PND and parenting anxiety are different, but are interrelated. Antenatal depression is the strongest forecaster of PND and in turn PND is the strongest predictor for parental fear. These findings give medical direction and propose that early detection and treatment of perinatal depression is of utmost importance (Leigh and Milgrom, 2008:1-11). Milgrom, Gemmill, Bilszta, Hayes, Barnett, Brooks, Ericksen, Ellwood and Buist (2008:147-157), describe in their study that antenatal depressive symptoms seem to be as common as the postnatal depressive symptoms. The key antenatal risk factors are earlier depression, present depression or tenseness and insufficient companion support.

2.8 THE SYMPTOMS OF PND

The following are possible symptoms of PND if it is experienced longer than two weeks after birth or sometimes months later during the first year after birth: symptoms of powerlessness, despair, extremely dependent, low libido, fatigue, tearful for no specific reason and the absurd fear that the baby is in danger or something will happen to the baby (Sellers, 2008:581).

Fraser and Cooper (2009:692-694), divides the symptoms into **two categories**: severe and mild depressive symptoms.

The features of **mild depressive illness** are similar to those as described by Sellers (2008:581), as stated above.

- Clinical features of **severe depressive illness**: *Somatic syndrome*, where sleeping patterns are broken, awakening early in the morning, daily mood changes, weight- and appetite loss or appetite changes, loss of concentration, fatigue, mental functioning is slowing down and lack of energy. These symptoms can easily be misjudged as other factors. The invasive *anhedonia* or *loss of pleasure* in the ordinary daily tasks, the lack of happiness and fear of the future may also be the cause of misunderstanding by the

mother. She may feel that she does not love her baby or is not a good mother which could easily be ascribed to attachment problems. Anhedonia is one of the most hurting symptoms during this time, where the opposite is expected. This leads to *guilt feelings, incompetence and worthlessness*. Lastly, *overrated morbid beliefs* can be present.

Davies, Howells and Jenkins (2003:248-255), state that in severe cases of PND, suicidal risk, harm to herself or the baby are very high. According to Leigh and Milgrom (2008:9), early detection and intervention may reduce both the severity of the symptoms and the occurrence of perinatal depression.

2.9 PREDISPOSING RISK FACTORS

2.9.1 Maternal age and marital status

According to Darcy et al. (2011: 249-257), depressive symptoms are significantly more common among younger mothers, between 18-24 years old.

Runyion (2011:6) shows in her study that the risks of PND are much higher in younger women, especially those who have a previous history of mood disorders and estimated 30% - 40% will develop an episode of PND. In addition, Brown, Harris, Woods, Buman and Cox (2011:1), show in their longitudinal study that depressive symptoms are more prevalent in young adolescent mothers who do not receive enough social support.

According to Crawford and Hickson (2002:46), the transitional phase of a teenage mother from adolescence to adulthood and childhood to motherhood can arouse a crisis, as adolescent pregnancy causes an early transition to parenthood.

2.9.2 Socio-economic level

The components of an individual's standard of living are reflected in occupation, income and educational level (Kozier, Erb, Berman and Burke, 2000:173). According to Stellenberg (2000:65), there is worldwide reliable evidence that the socio-economically disadvantaged people suffer a heavier burden of illnesses and have higher mortality rates than others.

According to Milgrom et al. (2008:147-157), maternal age is related to PND symptoms but they further state that lower socio-economic levels have the tendency to be a risk factor and so is the lower educational level. Darcy et al. (2011:249-257), also emphasise in their study that symptoms of depression are substantially higher amongst mothers with lower educational

levels, and who are unmarried and are poor. Substantiated further according to Tomlinson et al. (2006:83), PND is higher in socio-economically disadvantaged areas in SA as shown in a study in Khayelitsha in which the rate is as high as 34.7%.

Karmaliani, Asad, Bann, Moss, McClure, Pasha, Wright and Goldenberg (2009:414-424), in their study show that 18% of mothers were anxious and depressed which associated this with the unemployment of a husband and a lower household income.

2.9.3 Obstetric risk factors

Yang, Shen, Ping, Wang and Chien (2011:158-164), show in their study that the mothers who undergo an emergency caesarean section have a greater risk of developing PND than those who have an instrumental or normal vaginal delivery. According to Wewerinke, Honig, Heres and Wennink (2006:295), an emergency caesarean section, unplanned or unwanted pregnancy, pregnancy-related hypertension and early discharge from the hospital are obstetric risk factors that may cause PND.

2.9.4 Biological factors

According to the PANDA (2009:6-10), biological factors such as a genetic predisposition to develop depression and hormonal changes, such as rapid drop in pregnancy hormones can have an affect on the brain chemistry.

The possible aetiology of postnatal affective disorders is the rapid decline in the levels of reproductive hormones that occur after delivery. Although it has been insinuated that postnatal depression is caused by low levels of progesterone or oestrogen or high levels of prolactin, no consistent association could be found between the variables Stewart et al. (2003:34). In addition, according to Milgrom et al. (2008:147-157), PND is linked to the history of miscarriage and pregnancy termination.

2.9.5 Nutrient deficiencies and PND

A study by Beard, Hendricks, Perez, Murray-Kolb, Berg, Vernon-Feagans, Irlam, Isaacs, Sive and Tomlinson (2005:267-271), show a relationship between maternal iron deficiency anaemia and postpartum emotions and cognition. Iron deficiency anaemia (IDA), is the most common single nutrient deficiency in the world with estimates of >50% of women of reproductive age who are affected. Significant results that arise from this particular study show that:

- PND, stress and cognitive impairment in poor women may be related to the existence of IDA and

- depression and stress respond to iron therapy.

The study reveals that there is a strong correlation between iron status and depression, pressure and cognitive processes in poor African mothers during their postnatal period.

2.9.6 Previous psychiatric history

According to Runyon (2011:6), women with a prior history of depressive episodes have a higher risk for emerging PND than women with no previous history of depression. The risk of PND is highest in women 25 years of age with a prior history of mood instability. It is estimated that among these women, 30% to 40% will have a postnatal episode of depression.

Reck, Stehle, Reinig and Mundt (2004:77-87), state that there is a significant relationship between mothers who have a history of maternal blues and PND. Their study shows that the prevalence rate among German women is 55.2% and that German mothers should therefore be carefully observed during their postnatal period.

Furthermore, Harlow, Vitonis, Sparen, Cnattingius, Joffe and Hultman (2007:42-48), in their study found that almost 10% of women develop postnatal psychosis after giving birth for the first time if they were previously hospitalized for psychiatric morbidity. They emphasise the importance of early detection and treatment through adequate assessment of a previous history for psychiatric symptoms as a result of childbirth.

Substantiated further by Wewerinke et al. (2006:294), they emphasise that the main risk factor for PND, is a history of mental illness, which may result in obstetric difficulties and may weaken the mother-infant relationship. The most predictive factor for PND is previous psychiatric history during pregnancy, prenatal anxiety and poor marital relationships (Kirpinar, Gözüm and Pasinlioğlu, 2001:422-431).

2.9.7 Life events

According to Naku, Nakasi and Mirembi (2006:207-214), there is a significant association between negative life events and major PND, particularly if there was death in the immediate family as shown in this study (49.5%). Halbreich and Karkun (2006:98), in their study found globally high rates of PND within diverse cultures. They further indicate that the major risk factors are partner complications and communal stress such as observing an aggressive crime and fear of being killed. Furthermore, intimidating pressures in life may affect the new mothers

who are preparing for their first born. New mothers are anxiously looking forward to the new born and then undergo severe disturbances (Ramchandani, et al., 2009:279-284).

Urquia, O'Campo, Heaman, Janssen and Thiessen (2011:4), in their study show that violence during pregnancy may lead to PND especially when threats and physical violence are experienced before and continuing during pregnancy. Disturbing or insulting upbringing, complicated or traumatic pregnancy or a delivery and problematic intimate partner or family relationships, can cause PND (PANDA, 2009: 1-10).

Karmaliani et al. (2009:414-424), indicate that although socio-economic factors may be associated with psychological distress, the strongest factors associated with PND are physical, sexual and verbal abuse. Forty-two percent and twenty-three percent of women respectively who experience this abuse had peri-natal depression and anxiety compared to eight percent of those mothers who did not experience abuse. Additional traumatic life events for some women, like disasters, can lead to lower foetal growth, but do not have a significant effect on the gestational age at birth. The severity of experience is the major predictor of mental illness during pregnancy and postpartum periods (Harville, Xiong and Buekens, 2010:713-728).

2.9.8 Partner relationship, family and social support

According to Milgrom et al. (2008:147-157), the lack of social support either by partner, friends or family are significant factors which contribute to the development of PND. Factors such as marital stress, poor postnatal sexual relationships and infantile memories may aggravate the problem (Sellers, 2008:581). Women with constant support during labour will experience a shorter labour period, a natural vaginal birth and a lesser need for pain relief or anaesthesia in the intrapartum period (Hodnett, Gates, Hofmeyer and Sakala, 2007:1-11).

In summary according to Boyce and Hickey (2005:605), a considerably high risk for PND was related with (1) being 16 years and younger, (2) past history of mental illness, (3) exposure to one or more life events, (4) marital disappointment, (5) lack of social support, (6) susceptible personality and (7) having a unwanted sex of the baby. This study proves that psychosocial risk factors mainly in the area of social assistance and behaviour style are significantly related to PND.

2.9.9 Infant factors

Ueda, Yamashita and Yoshiba (2006:187), show in their study that there is a relationship between paediatric illness and maternal depression. Caring for ill babies put an extra load, physically and mentally on the mother in her postnatal period.

Darcy et al. (2011:249-257), found that children of women with PND have more distress and pain and consequently also greater impairment in health related to the quality of life. They further state that 47.7% of the mothers with depressive symptoms reported that their infants experience gastrointestinal problems, in comparison to the mothers without significant depressive symptoms (26.1%).

2.10 OTHER FACTORS

2.10.1 Personality traits

According to All-on-Depression-Help (2009:1), some personality types are disposed to suffer from depression. Individuals who tend to be negative in their way of thinking, likely to brooding and excessive worry, anxiety, experiencing low self esteem, many times over dependant on other persons and those who have very limited inherent skills to deal with stress.

Several personality styles have been proposed as susceptibility traits for developing depression although there are methodological problems related with classifying such traits and there is no unique personality style that has been found to predisposed women to postnatal depression Westwood (2006:52).

2.10.2 Genetic factors

All-on-Depression-Help (2009:1) stated that studies show certain types of depression (examples being seasonal depression, dysthymia, bipolar disorder) seem to be prevalent in specific familial lineages. Though research in this area is ongoing and inconclusive at this point, efforts are to understand which genes predispose an individual to depression. However, there is no hard rigid evidence for being at risk for depression just because of family history of suffering thereof. It is highly unlikely that depression can be solely because of genetic factors.

Millar and Walsh (2000:38), state that twin and adoption studies show that persons do inherit some predisposition to depression. They further state that medical studies also confirm that biochemical factors contribute and play a certain role in depression, although the exact action

and results remain indistinct. Studies show a reduction of monoamine metabolites, particularly noradrenaline and serotonin in the cerebrospinal fluid and urine is associated with people suffering from depression.

2.10.3 Cultural and religious aspects

In a study on cross-cultural and social diversity to determine the prevalence of PND and depressive symptoms conducted in various countries, results show that PND is undetected and that the women at risk hardly ever are acknowledged, not during prenatal visits at the clinics, or at the delivery wards. The study further reveals that this especially happens in developing countries where mental health is not important and attention is lacking. The study shows that up to 80% of women are not diagnosed by their physicians (Halbreich and Karkun, 2006:98).

Chan et al. (2009:108-118), indicate that culture does play a role in how women express their feelings. Australian women will be more inclined to express their emotions through guilt, whereas Hong Kong women, do it through shame. Guilt feelings seem to be more prevalent amongst Western cultures, but are also found in nearly all cultures, as well as among non-Christians. They further stated that in every culture the feelings of guilt and shame are present and functions as censors of conduct. The main difference is in the central values of a culture and how their defilement inspires creation of guilt and shame.

2.11 CONCEPTUAL AND THEORETICAL FRAMEWORK

The conceptual theoretical framework which guided this study is based on the clinical and social models and psychosocial theories of depression and holistic approach of nursing (Figure 2.1).

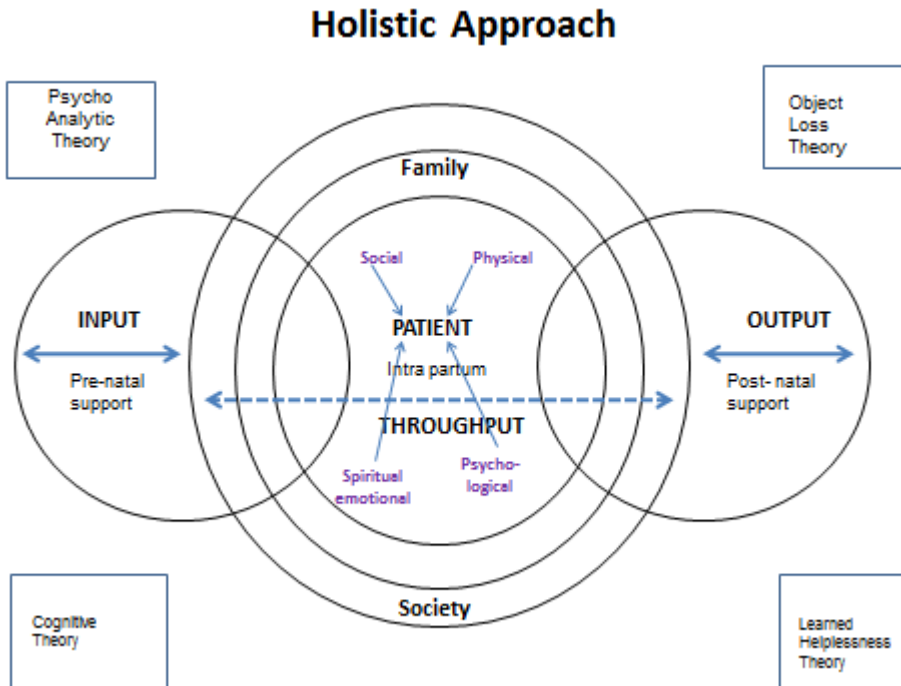


Figure 2.1: The holistic approach and nursing theories (Figure 2.1 by researcher)

2.11.1 Holistic approach

Holistic nursing encompasses all nursing which has the aim of enrichment and of always healing the person as a whole. This approach recognises the importance of the two views of holism which covers the interrelationships of the bio-psycho-social-spiritual aspects of the person. The researcher sees this holistic view of the mind - body relationship as essential in caring for the patient at all times because multiple factors contribute to illnesses. Through this approach effective and quality nursing care are enhanced (Kneisl and Trigoboff, 2009:872).

2.11.2 Clinical or medical model

According to Shah and Mountain (2007:375) a contemporary description of the medical model incorporates medicine's significant ideals, to facilitate precision and transparency, without denying its shortages. The 'medical model' is a process whereby, informed by the best

available evidence, medical doctors provide or healthcare interventions for improvement of health of the client or patient.

2.11.3 The Biopsychosocial model

According to Garcia-Toro and Aguirre (2006:683-691), there are two essential etiological views about mental conditions, biomedical and psychosocial. The biopsychosocial model has insisted to integrate these two perspectives in a scientific manner and signals their interdependence and interconnection.

2.11.4 Theories of depression

According to Frisch and Frisch (2002:257), depression is such a serious and overwhelming experience for the human being which rapidly transforms a person from virtually normal functioning to psychosis. There are several psychological theories that aim to explain the cause of mood disorders. The four major theories that best explain depression are: the *psychoanalysis theory*, the *object loss theory*, the *learned helplessness theory* and the *cognitive theory*.

2.11.4.1 Psychoanalytic Theory

Psychoanalysis originates from the studies of Sigmund Freud who viewed dreaming as a window space into the conscious mind. He points out that depression represents “conflict between the **ego** (the conscious self) and **superego** (an inner voice, something like an internalized parent)”. In the case of depression, the superego penalizes the ego for having prohibited wishes or for not living up to the superego’s expectancies (normally similar to those of one’s real parents). This conflict results in anger, guilt and self-hate and turned inward; these processes in turn cause depression (Frisch & Frisch, 2002:257).

This concept *firstly* allows the nurse and therapists to discover how incidents in childhood and expectations of parents can have an effect on present feelings.

Secondly, the psychoanalysis tracks the origins of depression into childhood; it therefore promotes the recognition that those children or adolescents may be substantially depressed and thus also the adolescent mother (Frisch & Frisch, 2002:257).

Medic8 Family health Guide (2009:1-4), emphasises that women think they must be perfect and a “super mom” which is unrealistic and can lead to PND.

2.11.4.2 *Object loss theory*

Object loss theory is also based on psychoanalysis, but is derived from a specific historical event. Bowlby, in Frisch and Frisch (2002:257) states that to be mentally healthy as an adult, a close and loving relationship with the mother is required.

Two important observations Bowlby made were:

- Traumatic loss early in life may cause depression and subsequent loss in adulthood may also serve as a stimulus that can cause depression.

This theory may be essential to understand the personal histories of the person who is depressed and who particularly has a traumatic experience and was filled with loss during childhood.

2.11.4.3 *Learned helplessness theory*

According to Frisch and Frisch (2002:257), this theory is based on Seligman's work (1974) and defines *helplessness* as the sense of loss of control over life events and defines *hopelessness* as the sense that no one can do anything about life's events. This theory is based on the individual's belief and that it is not a specific situation that causes depression, but a person's belief that nothing can be done to make things better. Learned helplessness is caused by a series of reinforcements in one's environment that takes the control away, producing a personality trait of "*giving up*". A person, who struggles with learned helplessness in growing up, does not have a sense of herself as a master of her own destiny and then lacks the skill of incentive and trying.

2.11.4.4 *Cognitive theory*

According to Frisch and Frisch (2002:257-258), the cognitive theory arose in contrast to psychoanalysis. The psychoanalysis highlights the unconscious childhood which is derived from the adult emotional experiences. Clients "*think about their feelings*", for them it is more vital for the recovering process than "*deep understanding of the origins of those feelings*". The cognitive theory describes the client as depressed because he accepts the opinion of himself and the world that concedes to hurting emotions, dysfunctional thoughts and maladaptive behaviour. If the client learns to see the entire world differently he can adopt a self-esteem that is healthier and therefore, more functional.

These theories are significant for this study, because it is imperative for health care workers to understand depression, the origin thereof, what the possible causes and consequences are in order to understand and manage clients most effectively.

2.12 SUMMARY

Reviewing the literature on this important period of a woman's life could be a time that is regarded as the best times for many women but could be a most threatening time for others. As shown in the reviewed literature it is a common complication of childbearing and as such represents a substantial public health problem. This is a time of a woman's life in which a myriad of physical, emotional, psychological and also developmental changes take place.

This indeed is a very challenging endeavour as literature reveals that mothers during this time need support and understanding. Various studies have shown that this is a common phenomenon which can be related to various risk factors such as environmental, social and psychological life events.

2.13 CONCLUSION

In this chapter, a literature review about PND with specific reference to an overview of PND prevalence and risk factors that influence the mental health of mothers after birth and the development of PND are described. Global reviews of literature on PND are researched and these show that risk factors like demographic and socio-economic factors can be associated with PND. The literature therefore emphasises the importance of early detection and treatment to prevent serious consequences. A conceptual theoretical framework which guides this study is described. In the next chapter the research methodology applied in this study is described.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The goal of this chapter is to provide an overview and rationale for the research methodology applied in the study to investigate the prevalence of post natal depression in the Witzenberg Sub-district, a rural area in the Cape Winelands District. The research methodology that was used in this study will be described.

3.2 GOAL OF THE STUDY

The goal of this study was to evaluate the prevalence and risk factors contributing to PND in a rural area, the Witzenberg Sub-district, Cape Winelands East District of the Western Cape Province.

3.3 OBJECTIVES

The objectives for this study were to:

- determine the prevalence of PND in the Witzenberg Sub-district
- identify the risk factors associated with PND in the Witzenberg Sub-district

3.4 RESEARCH METHODOLOGY

3.4.1 Research design

This study is a descriptive, exploratory, study with a quantitative approach which was applied to evaluate the prevalence of PND and the contributing risk factors of PND in a rural area, the Witzenberg Sub-district. Supported by the research of Burns & Grove (2005:26), this study aims to describe the prevalence of PND, and the risk factors contributing to the development of PND.

Research design is a plan for supervising or managing the research and by which control is gained over influences that might affect the desired outcome. The quantitative studies design stipulates the procedures the researcher aims to follow in order to develop interpretable accurate information. (Burns & Grove, 2007:42).

Terre Blanche and Durrheim (2004:30) confirmed that the research design should provide a plan that stipulates how the research will be implemented in such a way that it would address the research problem. The research design further guarantees that the research is conducted in a structured and logical way.

3.4.2 Population and sampling

According to Burns and Grove (2009:714), population indicates to all the elements which can be: individuals, objects, events or substances that meet the sample criteria for inclusion in a study, sometimes referred to as the target population.

The study population for this study, comprised of all the mothers, 18 years and older, who gave birth in the Witzenberg Sub-district, and who attended the post natal clinic at 6 weeks, 10 weeks or 14 weeks. According to the statistician, Prof D Nel, it is neither practical nor necessary to study all the individuals in the study population. Therefore, in this study, the mothers were chosen by convenience sampling when they brought their babies to the clinic for immunizations at the specified periods.

To have ensured that the sample of clinics was representative, the researcher made use of probability sampling namely simple random sampling when the clinics were chosen as supported by Meyer, Naude and Van Niekerk (2004:273). Each clinic in a specific category thus had an equal chance of being part of the study. There were eight (8) clinics in the Witzenberg Sub-district, of which five (5) were in low socio economic areas and three (3) in the middle socio-economic areas as classified by the Socio-Economic Data 2006, Cape Winelands DM, Witzenberg Integrated Development Plan (2007/2011:24-30). These areas are categorized as low socio-economic and middle socio-economic areas, as guided by the data source on poverty, annual household income, indigent households, employment and classification of occupation in each area. Research done by Dennis (2005:n.p), indicates that further investigation regarding PND, as a public health concern, will need the inclusion of women of different socio-economic backgrounds, as well as ethnic diverse participants.

Four clinics (50%) were chosen as the best representative sample for the study as condoned by the statistician, Prof D Nel. Two (2) clinics in the lower socio-economic areas and two (2) clinics in the middle socio-economic areas formed part of the study, in order to have ensured a representative sample for the study. A simple random sampling method was applied to choose the clinics. The clinics were chosen by numbering the clinics situated in the low socio- economic

areas and placing the five numbers, written on five folded papers in a container and the same was done with the names of the three other clinics. Two numbered papers were taken from each container. All the clinics had an equal chance to be part of this study. The clinics that were drawn from the container are:

Low socio-economic areas	1) Naledi Pandor Clinic	Nduli
	2) Bella Vista Clinic	Bella Vista
Middle Socio-economic areas	1) Annie Brown Clinic	Ceres
	2) Tulbagh Clinic	Tulbagh

3.4.2.1 *Specific criteria*

- Mothers who lived in the Witzenberg Sub-District
- Mothers who gave birth during 2010
- Mothers who participated had to be at 6, 10 and 14 weeks postnatal
- Mothers 18 years and older because these mothers are regarded as adults and are able to give consent independently

3.4.3 **Instrumentation**

Data were collected by utilizing the following instruments:

- A questionnaire to determine the demographic data and psychosocial risk factors
- The Edinburgh Postnatal Depression Scale (EPDS)
- The Beck Depression Inventory (BDI) to test the seriousness of PND

3.4.3.1 *Questionnaire for demographic data and psychosocial risk factors (Annexure F)*

A questionnaire specifically designed by the researcher was administered to determine the demographic data and psychosocial risk factors of the participants. The content was specifically about the following:

- Maternal age
- Marital status
- Level of education
- Pregnancies and children
- Mode of delivery
- Psycho-social factors
- Psychiatric history
- Social support

3.4.3.2 *The Edinburgh Postnatal Depression Scale (EPDS) (Annexure G).*

According to Tammentie et al. (2002:242), the EPDS is a validated, self-rating questionnaire, developed especially for identifying PND. According to the American Academy of Pediatrics

(2011:1) the Edinburgh Postnatal Depression Scale may be used by individual researchers and clinicians and can be photocopied for their own use without seeking permission from the publishers.

Cox, Holden and Sagovsky (1987:782-786) stated that the EPDS scale may be reproduced by users without further permission providing they respect copyright by quoting the names of the authors, the title and the source of the paper in all reproduced copies. The EPDS is used by researchers for studies worldwide and has been validated in studies and its sensitivity is approximately 96%.

According to Lawrie, Hofmeyr, De Jager and Berk (1998:1340-1344), the EPDS was administered verbally to participants in a study of a South African community and was shown as a valid instrument in the urban South African society. It was translated into one of the six languages. In addition, it was validated against the Diagnostic and Statistical Manual (DSM - 1V). The researchers further indicated that the EPDS does not require that the health worker have special knowledge of psychiatry and was consequently used by a research midwife. The questionnaire is easy to administer and takes approximately 15 minutes to complete and is generally accepted by participants. The questionnaire consists of 10 questions specifically about the participants' feelings in the past seven days including the day she was interviewed. The goal of EPDS is to determine whether the participant suffered from PND.

3.4.3.3 *The Beck Depression Inventory (BDI) (Annexure H)*

The Beck Depression Inventory (BDI), created by Dr. Aaron Beck, is one of the most widely used instruments to measure the severity of depression. This instrument is administered after possible depression is diagnosed, in order to evaluate the severity thereof. The BDI is a well-known screening instrument in the mental health field. It is recommended for research, as well as in the clinical setting for its reliability and validity. Each question consists of a set of at least four possible choices, with values ranging from 0-3. No values are visible on the participants' copy to minimize the risk of the participant manipulating the outcome, by choosing answers of specific value. The BDI was used since 1961 after exposure to several tests to confirm the validity and the legal responsibility. The high correspondence coefficient on the split-half analysis and the substantial relationship between the individual group category scores determine the instrument's substantial reliability (Beck, Ward, Mendelson, Mock and Erbaugh, 1961:53-63).

The main languages that are spoken in the Witzenberg Sub-district are Afrikaans and Xhosa, therefore the questionnaires were translated into these languages, as well as English because

all three languages are spoken in the Western Cape Province. After the translation of the questionnaires into Xhosa and Afrikaans it was confirmed for correctness with a language expert in these languages to ensure that all three versions were the same.

3.4.4 Pilot study

This pilot study was done at a clinic in the same sub-district, comparable to the other clinics where the actual study was conducted. The clinic was not part of the actual sample of the clinics used in the study. The purpose of the pilot study was to test the feasibility of the study, the instruments and suitability of the research design. A sample of (n=15/10%) of the sample of the main study was drawn according to the specific criteria set for the main study i.e. 5 participants at the clinic at 6 weeks, 10 weeks and 14 weeks in the post natal period. A total of 15 participants were examined under the same circumstances as the main study which contributed to the validity and reliability. The participants of the pilot study were excluded from the main study. Shortcomings regarding the instruments and design were rectified before the main study began.

3.4.5 Reliability and validity

According to De Vos, Strydom and Fouché (2002:160), the validity of an instrument depends on the accurate measurement of the concept in question i.e. the question is: does the instrument actually measure what it is supposed to measure? Reliability is the extent to which an instrument consistently measures a concept that it intended to measure (Burns & Grove, 2005:494; Cluet & Bluff, 2007:112). By using more than one instrument in this study it contributed to validity and reliability.

Different aspects of validity were used to assess the questionnaire. Face validity refers to whether the instrument looks as though it is measuring the appropriate construct (Polit & Beck, 2008:458). According to Burns and Grove (2009:700), face validity verifies that the instrument looked like or gave the appearance of measuring the content desired for a study. Content validity concerns the degree to which an instrument has an appropriate sample of items for the construct being measured and adequately covers the construct domain (Polit & Beck, 2008:458). Construct validity examines the fit between conceptual and operational definitions of variables and determines whether the instrument actually measures the theoretical construct that it purports to measure (Burns & Grove, 2009:693). For the purpose of this study, experts' in the fields of nursing, psychiatry, research methodology and statistics were consulted to ensure face, construct, criterion and content validity.

The use of the demographic instrument assisted in measuring the factors contributing to PND followed by the EPDS instrument which measured the presence of PND. The use of the BDI instrument determined the severity level of the PND in those participants in which PND was identified.

The EPDS as described in section 3.4.3 is a generally accepted instrument which measures the incidence of depression (Edwards & Galletly et al. 2008:95). Both the EPDS and the BDI were successfully used in previous studies and is also well known screening tools and proven to be valid. The relationship between the scores on the inventory and the clinical ratings of the depth of depression and the power to reflect clinical changes in the depth of depression, contribute to the validity of the BDI (Beck et. al.1961:59-60). In line with Cluett and Bluff (2007:112), in both the EPDS and the BDI, the same questions were asked more than once, but in different ways. This adds to the reliability of the instruments. The pilot study also added to the validity and reliability, because all three the instruments were pre-tested and rectified where necessary after the pilot study.

3.4.6 Data collection

Data collection was done by the researcher with the help of two trained field workers with some nursing background and who were fluent in Afrikaans, English and Xhosa. The field workers were trained beforehand in the interpretation of the different questionnaires and the process of data collection. Their role was to assist with interpretation.

The ethical implications, as well as the reason and objectives for the study were explained to each participant personally.

The questionnaire was self-administered and where participants had a problem understanding it, it was explained by the researcher or the trained field worker if Xhosa was applicable.

3.4.7 Data analysis

All data were analysed with the assistance of a qualified statistician from the University of Stellenbosch. MS Excel was used to capture the data. STATISTICA data analysis software system Version 9 (StatSoft Inc: 2009) was used. Data were expressed in frequencies, tables and histograms. Medians or means were used as the measures of central location for ordinal and continuous responses and standard deviations and quartiles as indicators of spread. The relationship between continuous response variables and nominal input variables was analysed using analysis of variance (ANOVA). Statistical associations were determined by using the chi-

square tests on a 95% confidence interval between various variables and the normal descriptive statistical analysis. If the variances differed significantly ($p < 0.05$) it was an indication to rather interpret a non-parametric test like the Mann-Whitney U-test or Kruskal-Wallis tests used for randomised design.

The chi-square test is a statistical test, used to assess differences in proportions and is symbolised as X^2 (Polit and Beck, 2008:749). According to Neuman (2006:372), a descriptive statistic, as used in this study, describes the strength of the association between two variables.

According to Burns & Grove (2009:502), the Bonferroni test is used to control the increase of significance, when different aspects of the same data must be performed.

The Mann-Whitney U test is a non-parametric test, used to test the differences between two independent groups, based on rank scores (Polit & Beck, 2008:757).

3.5 ETHICAL CONSIDERATIONS

The research study adheres to the ethical principles of *The Declaration of Helsinki*, whereby the participants benefit through the research project. The participants were evaluated for PND and if diagnosed positively they were referred for psychiatric treatment as needed and received counselling. The researcher who is also a trained psychiatric nurse and employed in the services of the Western Cape Health Department for this purpose added much value to supporting the participants who were identified with PND.

The researcher obtained written permission from the Committee for Human Science Research at the Faculty of Health Sciences of the University of Stellenbosch (Annexure D). The researcher also received written consent from the Research Coordinating Committee of the Department of Health, Provincial Government of Western Cape (Annexure E). The operational managers of the clinics were contacted through written letters and via e-mail to explain, organize and plan the research study at the clinics.

The researcher explained to the participants that they had a choice to withdraw from the study at any stage and that their decision would not influence any further service rendered to them. Therefore, to ensure that all participants were participating voluntarily, informed written consent was obtained from all participants in the preferred language namely English, Afrikaans or Xhosa (Annexure A, B & C). Confidentiality, anonymity and privacy concerning all information were ensured.

Only the researcher has access to the individual identifiable data and this is kept in a locked cupboard at the home of the researcher. The collected data is private and will be distributed in the form of a research report to the various stakeholders.

3.6 SUMMARY

A descriptive research design with a quantitative approach was applied with the use of three instruments for the collection of the data. The target population was mothers older than 18 years of age who gave birth in the Witzenberg Sub-district and attended the antenatal clinic at 6 weeks, 10 weeks or 14 weeks for the immunization of their babies. A pilot study was conducted, data was collected personally by the researcher with the assistance of two field workers and analysed with the assistance of a statistician.

3.7 CONCLUSION

In this chapter, the researcher described the research methodology related to the project. The different steps of the methodology of the project were described. The procedures involving data analysis and interpretation are discussed in the next chapter.

CHAPTER 4: PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.1 INTRODUCTION

In this chapter, the analysed results of this study are interpreted, discussed and presented in tables and frequencies. All data were analysed with the assistance of a qualified statistician from the University of Stellenbosch. MS Excel was used to capture the data. STATISTICA data analysis software system Version 9 (StatSoft Inc: 2009) was used. The data are presented in a quantitative form as the questionnaire only consisted of closed questions.

A descriptive statistical analysis was done together with analysis of variance (ANOVA) methods, including various statistical tests to determine any statistical relationships between variables.

ANOVA methods are used when ordinal response variables are compared versus a nominal input variable. The Mann-Whitney U-test or the Kruskal-Wallis tests are used for randomized designs.

The relationship between nominal variables was investigated with contingency tables and appropriate chi-square tests.

A p-value of $p < 0.05$ represents statistical significance in hypothesis testing and 95% confidence intervals are used to describe the estimation of unknown parameters.

4.2 DESCRIPTION OF STATISTICAL ANALYSIS

In this chapter the results of the statistical analysis of the data are described.

A full description of the tests used during the data analysis was given in chapter 3.

The discussion of the outcomes regarding all variables covered in the questionnaire follows next.

4.3 SECTION A: DEMOGRAPHIC AND OBSTETRIC FACTORS

4.3.1 Maternal age

Results show that (n=121/ 76.1%) of the participants are adults while (n=38/23.9%) were teenagers (table 4.1).

The EPDS test showed (n=19/23.8%) of (n=80) teenagers had PND.

Using the BDI test, results show that amongst the teenagers (n=5/21.7%) of (n=23) had severe PND, while (n=8/20.5%) of (n=39) had moderate and (n=6/33.3%) of (n=18) had mild PND.

Allen, Insabella, Porter, Smith, Land and Phillips (2006:55-65) also confirm that early adolescence brings about a considerable increase in the occurrence of depressive symptoms along with serious long-term sequelae.

Table 4.1: Maternal age

Maternal age	n	%
Teenagers	38	23.9%
Adults	121	76.1%
TOTAL	159	100%

4.3.2 Marital status

The majority of the participants (n=101/63.5%) were unmarried, followed by participants who were married (n=29/18.2%) (Table 4.2). According to the EPDS test for PND a total of (n=80/50.3%) of the participants suffered from PND. A bivariate analysis showed that (n=45/45%) of the unmarried participants, (n=18/69.2%) of the married participants and (n=16/61.5%) of the living together participants suffered from PND. However, according to the BDI test a total of (n=39) participants had moderate PND which included (n=15/38%) married and (n=19/48.7%) unmarried. Twenty-three participants had severe PND of which (n=13/56.5%) were unmarried participants.

Westwood (2006:52) stated that women heading a lone parent family are at greater risk of developing PND, however in contrast with this study marital status does not play a significant role in PND.

Table 4.2: Marital status

Marital status	n	%
Unmarried	101	63.5
Married	29	18.2
Living together	26	16.4
Divorced	1	0.6
Widow	1	0.6
Never married	1	0.6
TOTAL	159	100%

4.3.3 Level of education

The majority of the participants (n=54/34%) have indicated that they passed grade 10-11 followed by participants (n=42/26.4%) who passed grade 12. Only (n=12/7.5%) have a tertiary education (Table 4.3). The study shows no significant statistical relationship between the level of education and PND. However, in contrast to a study conducted by Tammentie et al. (2002:240-246), mothers with fewer years of education have more depressive symptoms.

Table 4.3: Level of education

Level of Education	n	%
No schooling	0	0
Grade 1-3	0	0
Grade 4-5	6	3.8
Grade 6-7	11	6.9
Grade 8-9	34	21.4
Grade 10-11	54	34.0
Grade 12	42	26.4
Tertiary	12	7.5
TOTAL	159	100

4.3.4 Pregnancies and children

Most of the participants (n=71/44.9%) have only one (1) pregnancy followed by (n=39/24.7%) had two (2) pregnancies (Table 4.4). Using the Levene's test for Homogeneity of Variance the effect between pregnancies and the BDI test has shown with significance ($p < 0.03$). Results in a study by Tammentie et al. (2002:240-246), show that the number of pregnancies and the deliveries of children are not associated with PND.

Table 4.4: Pregnancies

Pregnancies	n	%
One	72	44.9
Two	39	24.7
Three	32	20.3
Four	10	6.3
Five	6	3.8
TOTAL	159	100%

The majority of the participants (n=76/48%) had one child followed by (n=40/25%) who had two children (Table 4.5). Using the Levene's test for Homogeneity of Variance the effect between pregnancy and the BDI test has shown with significance ($p < 0.01$)

Table 4.5: Children

Children	n	%
None	1	1
One	76	48
Two	40	25
Three	30	19
Four	10	6
Five	0	0
Six	2	1
TOTAL	159	100%

4.3.5 Mode of delivery

As shown in table 4.6 (n= 133/83.7%) of the total number (n=159) participants had normal births followed by (n=25/15.7%) who delivered via caesarean section. A further analysis show that of the (n=80) participants with PND (n=71/88.8%) had normal births. According to the BDI test (n=21/93.3%) of (n=23) had severe PND, while (n=33/84.6%) of (n=39) had moderate PND.

The study show that mode of delivery is insignificant in PND. The study of Yang et al. (2011:158-164) show that the risk of obtaining PND is lower in mothers with a normal vaginal delivery or an instrumental vaginal delivery in comparison to mothers with an emergency caesarean section. The study further reveals that women who had an elective caesarean section had a higher risk than those who had an emergency caesarean section.

Table 4.6: Mode of delivery

Mode of delivery	n	%
Normal births	133	83.7
Caesarean section	25	15,7
Instrumental	1	0.6
TOTAL	159	100

4.3.6 Postnatal period 6-10-14 weeks

The number of participants at the various time intervals of 6-10-14 weeks were almost the same in number, varying between n=52 and n=54. The analysis further showed that n=21/39.6%, n=30/57.7% and n=29/53.7 of the participants had PND at the particular week intervals 6-10-14 weeks respectively. No significant associations were determined between the postnatal period and PND (Table 4.7).

Table 4.7: Postnatal period 6-10-14 weeks

Postnatal period	n	%
6-weeks	53	33.3
10 weeks	52	32.7
14 weeks	54	34
TOTAL	159	100

4.4 SECTION B: DEMOGRAPHIC AND PSYCHO-SOCIAL FACTORS

4.4.1 Employment

Table 4.7 showed that (n=95/59.7%) of the participants were unemployed and (n=101/63.5%) of the partners were employed. The results further showed that (n=49/61.3%) of the participants with PND (n=80) are unemployed. According to the BDI test (n=16/69.6%) of (n= 23) had severe PND and (n=24/61.5 %.) of (n=39) had moderate PND.

Furthermore, despite the fact that (n=48/60%) of the participants' partners were employed, they suffered from PND. The BDI test also showed that (n=13/56.5%) of (n=23) of the participants whose partners are employed had severe PND and (n=24/61.5%) of (n=39) had moderate PND.

A statistical difference is shown between self-employed and EPDS using the Mann-Whitney U test (p=0.04).

It can be concluded as shown by the results that employment does not play a role in the presence or absence of depression, which is in contrast to previous research as Horowitz and Goodman (2004:264-273) found that low socio-economic status may increase PND.

Table 4.8: Employment

Employment	n	%
Self-employed: Yes	64	40.3
Self-employed: No	95	59.7
TOTAL	159	100
Partner employed: Yes	101	63.5
Partner employed: No	58	36.5
TOTAL	159	100

4.4.2 Income and levels of income

The results showed that (n=119/74.9%) of the participants have an income (table 4.7) while (n=40/25.1%) have no income. Table 4.8 shows that the majority of participants (n= 88/55.3%) received an income less than R1000. A further analysis showed that of the number of participants who suffered from PND (n=80), (n=19/47.5%) of these participants received no income and (n=61 /76.3%) have an income.

According to the BDI test, participants with an income (n=31/79%) of (n=39) had moderate PND while (n=17/21.3%) of (n=23) had also severe PND.

Table 4.9: Income

Income	n	%
No income	40	25.1
Single income	65	40.9
Family income	54	34
TOTAL	159	100

Table 4.10: Income levels

Income levels	n	%
R 0- 500	69	43.4
R 501-1000	19	11.9
R1001-3000	49	30.8
R3001-5000	9	5.7
R5001-10 000	11	6.9
R10 000+	2	1.3

TOTAL	159	100
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4.4.3 Psychiatric history

4.4.3.1 *Psychiatric history: Self*

Table 4.10 shows that (n=65/40.9%) have a history of psychiatric illness. Results further show that participants with a history of a psychiatric illness (n=43/53.8%) of (n=80) had PND. A significant statistical difference is shown between PND and a history of psychiatric illness using the Chi-square statistical test (df=1) =11.19, $p < 0.01$.

The BDI test shows a small difference in the level of depression between those participants with a history (n=19/48.7%) and participants with no history (n=20/51.3%) of (n=39) who had moderate PND. It further showed that participants with a history (n=17/73.9%) of (n=23) had severe PND.

A statistically significant difference is shown between both the results of the EPDS ($p < 0.01$) and BDI ($p = 0.01$) tests and a psychiatric history using the Mann-Whitney U test.

Using the Levene's test for Homogeneity of Variance the effect between psychiatric history and PND was shown with significance ($p < 0.01$).

Reck et al. (2004:77-87) confirms that there is a significant relationship between mothers who previously experience maternal blues and PND.

4.4.3.2 *Psychiatric history: Family*

An analysis of whether the participant has a family history of psychiatric illnesses is shown in table 4.10. The majority (n=138/86.8%) have no family history.

The results further showed that (n=67/83.9%) of (n=80) had no family history of psychiatric illnesses, but experienced PND.

The BDI test showed that participants with no family history, (n=18/78.3%) of (n=23) had severe PND, (n=34/87.2%) of (n=39) had moderate PND and (n=15/83.3%) of (n=18) had mild PND.

According to this study family psychiatric history is an insignificant factor in PND.

This is in contrast with the study of Westwood (2006:52), who states that there is a link between PND and family history of affective disorders. It was argued that childbirth can trigger depression in women who have a genetically susceptible disorder.

Table 4.11: Psychiatric history

Psychiatric history	n	%
Self: Yes	65	40.9
No	94	59.1
TOTAL: Self	159	100
Family: Yes	21	13.2
No	138	86.8
TOTAL: Family	159	100

4.4.4 Life events

Analysis shows that n=67(42.1%) of participants experienced a major life event (Table 4.11).

In addition results illustrate that of the 80 participants who suffered from PND (n=80), n=39(48.8%) experienced major life events, while n=16(20%) had a minor event and n=21(26.3%) had no life event experiences.

According to the BDI test, the results further show that participants who had a major life event n=23(58.9%) of n=39 had moderate PND and n=12(52.2%) of n=23 had severe PND. Results also show that participants with no life events out of n=39, had also moderate PND.

Furthermore, the study also shows a statistical significant difference between PND and life events using the chi-square test ($df= 12$)=25.14, $p= 0.01$.

Using the Levene's test for Homogeneity of Variance, a significant statistical difference is shown between life events and BDI test ($p=0.01$).

Similar results are obtained in a study by Ali, Ali and Azam (2009:1186-1471), that mothers who experience domestic violence have difficulty in breastfeeding and this is significantly associated with PND. In addition, Urquia et al. (2011:1-9) confirm in their study that most violent incidents are related to PND, particularly in combination with threats. Harville, Xiong and Buekens (2010: 713-728), indicate that there is evidence that disaster may also influence maternal mental health.

Table 4.12: Life events

Life events	n	%
Major events	67	42.1
Minor events	39	24.5
No events	47	29.6
Minor and Major	5	3.2
Minor and minor	1	0.6
TOTAL	159	100

4.4.5 Partner relationship

Table 4.9 shows that n=65(40.9%) of participants were in an unsatisfactory partner relationship. Of the 80 participants who suffered from PND, n=44(55%) had an unsatisfactory relationship with their partners, while n=36(45%) experienced satisfactory relationships. The BDI test shows that n=21(91.3%) of 23 participants who had PND, had severe PND. Further results show that n=20(51.3%) of n=39 had moderate PND.

In addition, where there were satisfactory relationships, n=19(48.7%) of n=39 experienced moderate PND and n=15(83.3%) of n=18, experienced mild PND.

A statistical significant difference between partner relationship and PND was shown using the chi-square test ($df=2$) = 26.25, $p < 0.01$.

The EPDS and BDI tests show a statistical significant difference between EPDS and partner relationships and BDI and partner relationships ($p < 0.01$), using the Mann-Whitney U-test.

Furthermore, the Levene's test also show a significance between PND and partner relationships ($p < 0.01$).

The results obtained in this study show that partner relationship is associated with PND. These results are aligned with results obtained in a study by Horowitz and Goodman (2004: 264-273), who found in their study that poor quality of relationships may increase PND.

Table 4.13: Partner relationships

Partner relationships	n	%
Unsatisfactory	65	40.9
Satisfactory	94	59.1
TOTAL	159	100

4.4.6 Family and Social support

The majority of the participants (n=123/77.4%) received family and social support. However, of the number of participants who suffered from PND (n=80), (n=52/65%) of these participants received family or social support. A statistical significant difference is shown between family and social support and PND using the chi-square test (df= 1) = 14.71, p= <0.01.

According to the BDI test, the participants with family and social support (n=15/83.3%) of (n=18) suffered from mild PND, while (n=28/71.8%) of (n=39) experienced moderate PND. However those participants who received no family or social support the majority (n=14/60.9%) of (n=23) had severe PND and (n=11/28.2%) of (n=39) had moderate PND.

The Mann-Whitney U- test show a statistical significant difference between the EPDS test and family or social support (p=< 0.01).

Furthermore, the Levene's test also show a significant difference between family or social support and BDI results (p= <0.01).

The study conducted by Boyce and Hickey (2005:605-612), are aligned to this study who found that psychosocial risk factors are closely related to PND. Milgrom et al. (2008:147-157), in their study show that the lack of social support either by partner, friends or family are significant factors which contribute to the development of PND.

Table 4.14: Family and social support

Family and social support	n	%
Yes	123	77.4
No	36	22.6
TOTAL	159	100

4.4.7 Baby Factors

The majority of participants (n=96/60.4%) as shown in table 4.13 had unplanned babies. Of the 80 participants who suffered from PND (n=42/52.5%) were unplanned pregnancies and (n=25/31.3%) were planned babies.

The BDI test further shows that of the unplanned babies (n=11/47.8%) of (n=23) had severe PND, while (n=20/51.3%) of (n=39) had moderate and (n=11/61.1%) of (n=18) had mild PND.

Participants with planned babies (n=14/35.9%) of (n=39) had moderate PND.

The Kruskal Wallis test shows a significant difference between baby factors and PND ($p=0.03$), between the EPDS test and baby factors ($p= 0.03$) and between the BDI and the baby factors ($p=0.01$).

The Bonferonni test of probability also shows a statistical difference between unplanned and unwelcome babies ($p<0.01$) and between planned and unplanned ($p<0.01$). It further shows a significant difference between planned and unwelcome babies ($p<0.01$).

The results on this variable are in disagreement with a study conducted by Grote et al. (2010:1186-1471), that maternal postnatal depression does not have any effects on offspring growth in high income countries.

Study of Tomlinson et al. (2005:81-86), show that an unplanned pregnancy also contributed to maternal depression.

Table 4.15: Baby factors

Baby Factors	n	%
Unplanned	96	60.4
Planned	46	28.9
Unwelcome	13	8.2
Other Factors	4	2.5
TOTAL	159	100

4.5 SUMMARY

The data collected during this study was analysed, interpreted and discussed in this chapter. The researcher successfully explored and investigated the research question, i.e.

- What is the prevalence of PND and the contributing risk factors in a rural area?

The researcher used scientific investigative techniques to determine the risk factors influencing the mental health status of the mother in her postnatal period. The following objectives were reached

- to determine the prevalence of PND in the Witzenberg Sub-district
- identify the risk factors associated with PND in the Witzenberg Sub-district

Results show that 40.9% of the mothers have a history of psychiatric illness. Results further show that participants with a history of a psychiatric illness (53.8%) of (n=80) had PND. The study revealed that 50.3% of the mothers, who took part in the study, suffer from PND.

Among the risk factors for the development of PND unplanned babies (60.4%) is one the biggest risk factors. Another risk factor is unsatisfactory partner relationships. The study shows that 49.1% of participants were in an unsatisfactory partner relationship. Of the 80 participants who suffered from PND, 55% had an unsatisfactory relationship with their partners.

The majority of the participants (63.5%) who were unmarried suffered from PND indicating that this is a contributing factor.

According to the EPDS test for PND a total of (n=80/50.3%) of the participants suffered from PND.

4.6 CONCLUSION

The study has shown an extremely high prevalence rate of PND with risk factors contributing to this mental disorder in the Witzenburg Sub-district, a rural area. Through the clinical practice of the researcher it has been shown that this serious mental health disorder is being underestimated.

Recommendations based on the scientific evidence obtained during this research are described in chapter 5.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter will draw conclusions grounded on scientific evidence obtained in this study with reference to the results of related studies. The goal, objectives, purpose, research question and also the limitations of this study are concisely discussed and recommendations are made which may alleviate the problem.

5.2 OBJECTIVES

The following objectives were determined for this research study, which were investigated:

- the prevalence of PND in the Witzenberg Sub-district
- the risk factors associated with PND in the Witzenberg Sub-district

These objectives were met by an extensive research study that aimed at detecting the demographic and psycho social factors that have an effect on the mental health of the mothers and which may cause postnatal depression in the Witzenberg Sub-district, a rural area in Cape Winelands District.

5.2.1 The prevalence of PND in the Witzenberg Sub-district

In order to determine the prevalence of PND in the Witzenberg Sub-district two instruments were utilized namely the Edinburgh Postnatal Depression Scale and the Beck Depression Inventory (BDI).

5.2.1.1 *The Edinburgh Postnatal Depression Scale (EPDS) (Annexure G)*

The EPDS as described in 3.4.6, is a self-reporting questionnaire, but also a screening tool which was used with the purpose of determining who of the participants (n=159) could be categorized as having PND. The instrument consists of 10 questions with a total score of 30. All questions had to be answered and a cut off score above 14 determined PND for this study. The cut-off point was based upon the researcher's clinical experience as a registered psychiatric professional nurse of the Witzenberg Sub-district from which the sample was drawn and is underpinned by the literature researched. Communities of this sub-district have shown that they were often exposed to critical situations such as gender based violence, unemployment and unplanned babies all of which were affecting them psychologically. The total number of

participants, (n=159) completed the questionnaire successfully of which the result showed that (n=80/ 50.3%) was categorized as having PND. The results of this study do not correspond to the world-wide prevalence rate of 12-15% as found in many of the community surveys of postnatal depression, but is similar to a study by Sankapithilu, Nagaraj, Undaru, Nanjegowda and Nagaraja (2010:1-5), who state that some of the studies have demonstrated PND up to 60%.

5.2.1.2 The Beck Depression Inventory (BDI) (Annexure H)

The BDI is the most widely used instrument to assess the severity of depression as described in section 3.4.6. According to the Encyclopedia of Mental Disorders (2011) the BDI is designed to be used by well-informed mental health professionals who are trained in the use and interpretation of it. The researcher as described in paragraph 5.2.1.1 above was equipped to administer such a test. The data obtained about who the participants were with PND (n=80/50.3%) as identified by the EPDS, were further analysed to determine the severity of PND using the BDI. The results obtained were as follows:

- A Score < 15: Mild Depression (n=18)
- B Score 15 - 30: Moderate Depression (n=39)
- C Score >30: Severe Depression (n=23)

It may therefore be concluded that the prevalence rate of PND in the Witzenberg Sub-District is 50.3%.

5.2.2 The risk factors associated with PND in the Witzenberg Sub-district

A questionnaire as described in section 3.4.6 was applied to determine the demographic, obstetric and psychosocial risk factors for PND that were successfully completed by (n=159) participants. Most risk factors identified in this study and associated with PND are supported by results obtained in studies of the WHO (WHO/UNFPA, 2008:8).

5.2.2.1 Section A: Demographic and obstetric factors

Section A reflected data obtained about the demographic and obstetric factors which may influence the development of PND. This section included questions related to risk factors associated with PND such as age, marital status, mode delivery, level of education, income, number of pregnancies and children.

It was identified that (n=19/23.8%) of the total number of participants with PND (n=80) were teenagers. Allen et al. (2006:55-65) found in their study that teenage pregnancy contributes to the development of PND. This is substantiated further by Harrowitz and Goodman (2004:264-273), who confirm that pregnancy at a very young age may increase PND.

The majority of the participants (n=101/63.5%) were unmarried of which (n=45/45%) had PND. According to Tannous, Gigante, Fuchs, and Busnello (2008: 1186/1471-244) having a partner or spouse remain important for protection. Women in low income populations and those with no partner or spouse do most probably require further care to early detect and prevent PND.

Although the study shows that the mode of delivery is insignificant in PND, further analysis shows that 88.8% of the participants (n=80) with PND had normal births. Sankapithilu et al. (2010:1-5), support the study as they found no significant correlation between PND and mode of delivery.

The study shows no significant statistical relationship between educational level and PND. However, in contrast to a study conducted by Tammentie et al. (2002:240-246), mothers with fewer years of education had more depressive symptoms.

No significant results between PND and the number of children or pregnancies have been shown. Similar results are shown in a study by Tammentie et al. (2002:240-246), who found that there is no association between the number of pregnancies or children and PND.

5.2.2.2 Section B: Demographic and psycho-social factors

Section B reflected data obtained about demographic and psycho-social factors.

The following factors were included in this chapter: employment, income, psychiatric history, life events, partner relationship, family or social support and baby factors.

The majority of participants with PND (n=80) are unemployed (n=49/61.3%). A further analysis shows that (n=38/47.5%) of these participants received no income.

Furthermore, (n=43/53.8%) of participants with PND (n=80) had a psychiatric history

A significant statistical difference is shown between PND and a history of psychiatric illness ($p < 0.01$).

In addition, results illustrate that of the participants who suffered from PND (n=80), (n=39/48.8%) experienced major life events. The study also shows a statistical significant difference between PND and life events ($p= 0.01$).

The results obtained in this study show that partner relationship is statistically associated with PND ($p<0.01$). These results are aligned with results obtained in a study by Horowitz and Goodman (2004: 264-273), who found in their study that poor quality of relationships may increase PND. Roux, Anderson and Roan (2002:25-36), confirm that lacking partner support or closeness or partner abuse are found in nearly one in three of the women with PND. In this study a statistical significant difference is shown between family and social support and PND ($p= <0.01$).

The Bonferonni test of probability also shows a statistical difference between unplanned and unwelcome babies ($p<0.01$) and between planned and unplanned babies ($p<0.01$). Study of Tomlinson et al. (2005:81-86), show that an unplanned pregnancy also contributes to maternal depression.

In conclusion the risk factors as discussed and identified in the Witzenberg Sub-district contribute to the development of PND.

5.3 RECOMMENDATIONS

The recommendations are based on preventative and promotive measures, as in most cases PND can be prevented and if diagnosed early the level of severity and consequences of the problem may be curtailed.

5.3.1 Early assessment

An early and holistic assessment of the pregnant women during the antenatal period should be done to identify any risk factors and clinical symptoms of depression. Early detection of women at risk or underlying symptoms of depression will necessitate early referral and or treatment. Assessment should be holistic and continuous during the mother's pregnancy and during the post-partum period. Treatment may include individual and group psychotherapy (Horowitz and Goodman (2004:264-273). Referral to a psychiatrist may include psychopharmacological treatment depending on the severity.

5.3.2 Nutritional supplements

An assessment of the nutritional status of the patient is specifically important during the antenatal visits as the midwife needs to ensure that the mother understands the importance of a balanced diet and taking her supplements ferrous sulphate and folic acid tablets. Beard et al. (2004: 267-271), show a strong relationship between iron status and PND.

5.3.3 Health education: Prenatal- and postnatal classes

It is recommended that prenatal and postnatal classes for all mothers and fathers be introduced and that this becomes a norm and not an exception. It should form part of the mother and child health care policy in Primary Health Care. In these classes mothers and fathers can be informed about the delivery process, the importance of the development of the foetus and the baby, healthy balanced diets, exercise, preparation for the new born, possible complications during pregnancies and birth.

5.3.4 In-service and continuous professional development

It is recommended that midwives and the primary health care practitioners receive continuous professional development and in-service training to ensure that they are skilled and competent in recognizing risk factors, clinical symptoms of depression and in being able to manage depression in the pre and postnatal periods. These nurses should be empowered to take the appropriate measures when factors or any symptoms are identified. This is supported by Tammentie et al. (2002:240-246).

5.3.5 Family planning

Unwanted and unplanned pregnancies could be prevented through health education emphasising the importance of family planning. This could be done through campaigns by the clinics, communities and the media. Furthermore, the clinic services should be more accessible, accountable and adaptable to the needs of the clients.

5.3.6 Batho Pele principles

The Batho Pele principles should be applied judiciously in all health care institutions ensuring that health care professionals have positive attitudes towards the health care users which may contribute to better health for all. Through the application of positive attitudes by putting “people first”, caring for and serving the people, the promotion of mental health and prevention of mental illnesses can be ensured. Value is added to the total wellbeing of the mother and child and prevents serious illnesses when managing the mother and child through the “holism” approach.

5.3.7 Prevention of teenage pregnancies

All stakeholders of the communities including churches, NGOs schools, SAPS, Departments of Education and Social Development and Health, should apply a unified approach in combating the pathologies of society which contribute to the high incidence of pregnancy. Social pathologies include crime, sexual abuse and prostitution.

5.3.7.1 Role of Department of Education

Sex education should be introduced at schools before learners become sexually active to empower them with the required knowledge of sexual activities which may result in pregnancy and sexually transmitted diseases.

Life orientation classes at school should emphasise the prevention of teenage pregnancies which should include the consequences of early sexual activity. Much emphasis should be placed on career opportunities and career planning, having a vision and setting goals for the future.

5.3.7.2 Role of Department of Health

Unplanned pregnancies in this study showed to be a significant risk for PND. Therefore the Department of Health should apply all measures possible to prevent unwanted and unplanned pregnancies among teenagers.

The introduction of unique clinics especially designed for young adolescents should be user friendly for holistic health care programmes.

In addition, primary health care clinics should be adolescent friendly as many young teenagers are intimidated when visiting family planning clinics for contraceptives.

Furthermore, health care services should be more flexible and comply with the needs of the teenage clients.

School health programmes must be fully implemented at all schools, such as the Health Promoting Schools Initiative.

Health education for adolescents should include family planning education, the use of contraceptives and awareness programmes should be more visible.

Combating teenage pregnancies require a deliberation between the Department of Education, Social Development and Health to work together to be more effective in reaching the goal and objectives in preventing teenage pregnancies and better adolescent health.

5.3.7.3 Role of Department of Social Development

In collaboration with all stakeholders the role of the Department of Social Development in preventing teenage pregnancies is critical in the introduction of community programmes and supporting NGOs with various social development initiatives. Development programmes should include youth programmes such as leadership, career guidance, entrepreneurial skills development, empowerment workshops and prevention of women abuse.

5.3.8 Empowerment of women

The Gender and Women Associations should seriously focus on capacity building of women to empower women. The empowerment programmes should support the women to develop themselves to be independent. Skills development programmes must be implemented and encouraged by Local Government. The government of the day should review economic and social policies to guarantee social and economic resources like capacity building, education and training of women to enhance social security. It is the belief of the researcher that it will have a direct effect on the mental well-being of women and therefore motivate women for further education.

5.3.9 Education

The study shows that few women complete tertiary education. This therefore should be promoted, as education contributes to the empowerment of women. Special advocacy should be done to motivate and encourage women to be educated and should start already at school as described above in paragraph 5.3.6.1. Education enhances positive self-esteem and decreases feelings of hopelessness. Education also ensures quality jobs, income and healthy lifestyles.

5.3.10 Job creation

The Government and private sector should see job creation as a high priority. Social development must initiate social upliftment programmes as it would improve the health status of the mother, child and total family. Women must be empowered to create jobs to generate an income through skills development programmes.

Stellenberg (2000:66), shows that job-loss is highly stressful and can be considered as a form of bereavement. Stress can affect physical health and can result in increased levels of anxiety.

5.3.11 Partner, family and community support

It should be normal standard practice to allow support from the partner, family or friends whom the mother relates to best and is comfortable with during labour. According to Hodnett et al. (2007:1-11), support should be encouraged by the health care service and every effort possible is essential to ensure that the birth environment is empowering and non-stressful.

Marriage guidance and counselling programs can be given to promote the wellbeing of the mother, child and family.

5.3.12 Healthy lifestyles

Alcohol, smoking, bad eating and sleeping patterns may also affect the mental health of the individual. Exercise and healthy hobbies can be seen as relaxation therapies, but is also important for total wellbeing.

The commencement of comprehensive health programmes in preventive and promotive health focussing on all the aspects of a person in totality and all developmental stages are fundamental. Goal directed programmes should impact on the behaviour and lifestyle changes.

5.4 FURTHER RESEARCH

Research was only done in Witzenberg Sub-district and it is recommended that research is expanded to other rural Districts.

Further qualitative research should be done in the low-income rural areas in South Africa to understand the communities understanding of mental distress and therefore investigate their mental health needs. Through this health care professionals can intervene effectively through strategic planning.

5.5 LIMITATIONS OF THE STUDY

A limitation identified in this study was that the research was restricted to only one sub-district of the Cape Winelands East District. The research was conducted only in the public health services and predominantly participants were African and Coloured. White citizens' predominately use private clinics.

5.6 CONCLUSIONS

“...as many women before me, I “died” during childbirth. PND was the path through which I resurrected myself.” Words of a woman whose PND was identified very late, but was fortunate to survive after detection, treatment and support.

The theories of depression as described in chapter two, is of importance for the nurse to understand, detect early and apply effective treatment on the mother. Based on the outcome of this study it showed the importance of both the clinical and social science model when working with the mothers during the postnatal period. It is critical to apply the holistic approach and care as a whole to ensure efficacy with the best outcomes for both the mother and the child.

According to the WHO (2008:2-3), it is unfortunate that mental health is not specifically part of the Millennium Development Goals. However, three of the MDGs are directly or indirectly related to women's health. The MDGs concerned are:

- MDG 3: Promoting gender equality and empowering women
- MDG 4 Reducing child mortality
- MDG 5: Improving maternal health

It is therefore essential that integration of mental health care into the primary health care setting is expedited as it is closely related to achieving the Millennium Development Goals of improving maternal health, reducing child mortality, promoting gender equality, empowering women and reducing poverty. Cognizance should be taken that depression is associated with substantially reduced quality of life and functional capacity for the affected woman with PND. Poor maternal mental health is especially problematic for the infants of these mothers: It reduces caregivers' sensitivity and responsiveness at a time when children are entirely dependent on their mothers' wellbeing (UNFPA/WHO, 2007:1).

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ANNEXURES

Annexure A: Participation information – and consent form

TITLE OF RESEARCH PROJECT:

Evaluation of the prevalence of Postnatal Depression (PND) and Risk Factors in a rural setting.

Researcher: **Maggie Abrahams**
Psychiatry Department: **Ceres Hospital**
Contact details: **023 3169600**
Student number: **14000636**
Study Supervisor: **Dr. E Stellenberg**
Institution: **University of Stellenbosch**

Ms Maggie Abrahams, Registered Psychiatric Nurse at Ceres Hospital, is currently busy with M-Cur studies at above mentioned University.

The Research Project in the Witzenberg Sub-district on the prevalence of Postnatal Depression (PND) and the risk factors.

The objectives are:

1. To determine the prevalence of PND
2. To identify the risk factors

Assessment of PND will be done through questionnaires at four (4) clinics in the Sub-district by the researcher. (N'duli-, Bella Vista-, Annie Brown- and Tulbagh Clinic) Women at 6-, 10- and 14 weeks in their postnatal period will participate voluntary. When PND is detected, it will be managed immediately and necessary referral will be done. Strict confidentiality will be of essence and every participant will be handled with the greatest respect. The participation will be absolutely voluntary and what ever your decision, it won't influence the service and treatment you receive now or in the future. Assurance of service excellence and service of accountability will be maintained.

Participation is free and there will be no payment for participating. The advantage when you partake: A psychiatric evaluation will be done and therefore early detection and treatment are guaranteed. This will prevent harmful complications to your developing baby, you and also your family. This will ensure maximum development of the baby.

Thank you very much for your time and participation.

Signed at (place).....on (date).....2010

.....
Signature of participant

.....
Signature of witness

DECLARATION OF RESEARCHER

I (name of researcher).....declare that:

- I explained the information in the document to
- I spent time encouraging participants to ask questions and motivate them to answer them.
- I asked the client through the translator / or not through the translator. (If translator was not used, sign underneath)

Signed at (place).....on (date).....2010

.....
Signature of researcher

.....
Signature of witness

DECLARATION BY TRANSLATOR

I (name of translator).....declare that:

- I supported the researcher (name).....to explain the document in Afrikaans and Xhosa to (name of participant).....
- I spent time to encourage participants to ask questions and gave enough time to answer them.
- I have given the factual and accurate version as it was given to me.

Signed at (place).....on (date).....2010

.....
Signature of translator

.....
Signature of witness

Annexure B: Deelnemer inligtingsblad en toestemmingsvorm

TITEL VAN NAVORSINGSPROJEK:

Evaluasie in die voorkoms van Postnatale Depressie in 'n landelike omgewing

Navorser: **Maggie Abrahams**

Psigiatrie Afdeling: **Ceres Hospitaal**

Kontak besonderhede: **023 3169600**

Student nommer: **14000636**

Studie toesighouer: **Dr. E.L. Stellenberg**

Universiteit van Stellenbosch

Me. Maggie Abrahams, Geregistreerde Psigiatrie Verpleegkundige, Ceres Hospitaal, is tans (2009) besig met M-Cur studies aan die Universiteit van Stellenbosch.

Daar is tans 'n Navorsingsprojek in die Witzenberg Sub-distrik, aangaande die voorkoms van Postnatale Depressie (PND).

Die doelwitte is: 1. Om die voorkoms van Postnatale Depressie te bepaal.

2. Om die moontlike aanleidende risiko faktore te identifiseer.

Assessering van PND sal d.m.v. geldige vraelyste gedoen word by vier (4) klinieke in bg. Sub-distrik, deur die navorser soos hierbo genoem (Bella Vista-, N'duli-, Annie Brown- en Tulbagh Kliniek). Volwasse vroue in hul 6-,10- en 14 weke postnatale periode sal vrywillig deelneem. Indien PND bepaal word, sal dit onmiddellik hanteer word, deur haar gerus te stel, ondersteuning te bied en die nodige toepaslike verwysing te doen.

Streng vertroulikheid sal aan die dag gelê word en u sal met die absolute respek behandel word. Die deelname is absoluut vrywillig en ongeag u besluit u behandeling sal nie hierdeur benadeel word nie. Wees ten alle tye verseker van waardige en verantwoordelike diens.

Deelname aan die projek is heeltmaal gratis. U sal ook nie betaal word om deel te neem nie. Die voordeel van u deelname: U sal volledige psigiatryese evaluering ontvang en dus kan vroeë identifisering van PND plaasvind en hanteer word. Sodoende kan ernstige komplikasies

voorkom word vir u ontwikkelende baba/kind, u self en ook u hele gesin. Sodoende kan u kind maksimale ontwikkeling geniet!

Baie dankie vir u deelname en tyd. Wees verseker van volgehoue ondersteuning aan u.

Geteken te (plek).....op (datum).....2010

.....
Handtekening van deelnemer

.....
Handtekening van getuie

VERKLARING DEUR NAVORSER

Ek (naam van navorser)verklaar dat:

- Ek die inligting in die dokument verduidelik het aan
- Ek tyd spandeer het om vrae vra aan te moedig en te beantwoord.
- Ek het d.m.v. 'n tolk / of geen tolk assessering gedoen. (Indien 'n tolk betrokke was, teken asb. onderstaande verklaring)

Geteken te (plek).....op (datum).....2010

.....
Handtekening van Navorser

.....
Handtekening van getuie

VERKLARING DEUR TOLK

Ek (naam van tolk)verklaar dat:

- Ek, die navorser (naam).....ondersteun het om inligting in die dokument in Afrikaans en Xhosa aan (naam van deelnemer).....verduidelik het.
- Ek het vrae vra aangemoedig en voldoende tyd gespandeer om dit beantwoord.
- En feitelike korrekte weergawe gegee soos oorgedra is aan my.

Geteken te (plek)op (datum).....2010

.....
Handtekening van tolk

.....
Handtekening van getuie

Annexure C: Inxoxheba ngcazelo – kunye weform yemvumelwano

Isihloko Sophondo Lwepreject

Evaluation of the prevalence of Postnatal Depression (PND) and risk factors in a rural setting.

Umphandi : **Maggie Abrahams**

Icandelo : **Ceres Hospital**

Inombolo yemfonofono : **023 3169600**

Student Nombolo : **14000636**

Umququzeleli Zifundo : **Dr. E. Stellenberg**

Ui Ms Maggie Abrahams, ungunotlolo asemhethewni we psychiatric pwayakwisi bedlele sephondo Sase Ceres, okwangoku uxakeke Ngezifundo ze m-cur kwidyunivesiti ecasisiweyo ngasentla.

Leproject yaphondo apha ewitzenberg kw Sub district Iphand Nge Postnatal Depression (PND) Nange Nqosi Zayo

Into Ezibalelekileya zezi:

- 1) Ubuzaza balc PND
- 2) Kuqwalaselwe ubungazi bayo

Uvavanyo lwe PND Luzokwenziwa ngokwemibuzo kwiklinik ezine zesub – District. Ngobaphandi kwezi clinic zilandelyo. (N'duli-,Bella Vista-, Annie Brown kwi clinic ese Tulbagh. Omama abakwi 6-10 nabakwiveki ezilishumi elinesine. 14weekskwu PND Bazakuthatha.

Ngokwa mavolontiya ale PND sele icuthiwe. Izaku luwulwa kwakamsinyo futhi, xakuyi mfuneko uphondo luyakuqgithiselwa.

Ucwaningo oluyimpilo luyakubakho kakhulu nakuwuphi umthathi nxaxheba. Ngesikhulu isidima nesimilo abathathi nxaxheba bayakuzikhethela nesiphina isiqqibo, ayinakuchaphazela uvavanyo olufumana nguku nakwixesha elizayo. Inqginisekiso yomsebenzi omhle okhathalelekileyo.

Ukuthatha inxaxheba kuzakuba simahla akuzi kubakho bhatala okulungileyo xaku qhubekwa lepsychiatric izakwenziwa kwangoko uncedo novavanyo kuqinisekiwe lento izakunqanda. Ukubambezeleka kwe nqubela yosana, nawe kwakunye nosapho lento izaku qinesekisa uphuhliso oluphezulu lomntwana okanye usana.

Enkosi kakhulu ngenxaxheba kunye nexesha lakho.

Isayinwe (Indawo)..... ngomhla.....2010

.....

Umtyikityo womphandi

.....

Umtyikityo wenqina

ISIQINISEKISO SOMPHANDI

I (Igama lomphandi)..... Isiqinisekiso sokuba

- Ndiye ndacacisa incazelo ngoluxwebhu ku
- Ndichithe ixesha ndikhuthaza ndibuza imibuzo ndimcacisela nangempendulo.
.....
- Ndiye ndancediswa ekutolikeneni / nasekunga tolikini. (ukuba ukutolika khange kusetyenziswe sayina ngezantsi)

Isayinwe (indawa).....ngomhla2010

.....

Umtyikityo womphandi

.....

Umtyikityo wenqina

ISIQINISEKISO SETOLIKI

Mna(igama le toliki).....ndiqinisekile ukuba

- Ndiye ndaxhasa umphandi(igama).....ukuba ndicacise oluxwebhu ngesiBhulu nesiXHOSA ku: (igama lomthathi nxaxheba).....
- Ndiye ndachitha ixesha ndikhuthaza ukubuza imibuzo ndibanika ixesha elaneleyo ukuphendula imibuzo kubo.
- Ndiye ndabanika incazelo eqinisekileyo nembono zam ngendlela endiya ndachazelwa ngayo mna.

Isayinwe (Indawo).....ngomhla.....2010

.....

Umtyikityo wetoliki

.....

Umtyikityo wengqina



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Annexure D: Letter from the Ethics Committee

MAILED

Department of Nursing
2nd Floor, Teaching building
Stellenbosch University
Tygerberg campus
7505

Dear Ms Abrahams
Ms J Abrahams

ETHICS REFERENCE NO: N09/11/336

03 February 2010

A review panel of the Health Research Ethics Committee reviewed the above project on 9 December 2009 and it was approved on condition that further information must be submitted. This information was supplied and the project was finally approved on 3 February 2010 for a period of one year from this date. This project is therefore now registered and you can proceed with the work.

Please quote the above-mentioned project number in ALL future correspondence. Notwithstanding this approval, the Committee can request that work on this project be halted temporarily in anticipation of more information that they might deem necessary to make their final decision.

Please note that a progress report (obtainable on the website of our Division: www.sun.ac.za/rds) should be submitted to the Committee before the year has expired.



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The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly and subjected to an external audit.

Translations of the consent document in the languages applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372

Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr H el ene Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.



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RE : APPROVAL "The prevalence of post natal depression in a rural setting."

12 July 2011 09:44 Page 1 of 2

Fakulteit Gesondheidswetenskappe Faculty of Health Sciences

Verbind tot Optimale Gesondheid · Committed to Optimal Health

Afdeling Navorsingsontwikkeling en -steun · Division of Research Development and Support

Posbus/PO Box 19063 · Tygerberg 7505 · Suid-Afrika/South Africa

Tel.: +27 21 938 9075 · Faks/Fax: +27 21 931 3352

Approval Date:3 February 2010 Expiry Date:3 February 2011

MRS MERTRUDE DAVIDS

Yours faithfully

RESEARCH DEVELOPMENT AND SUPPORT

Tel: 021 938 9207 / E-mail: mertrude@sun.ac.za

Fax: 021 931 3352

12 July 2011 09:44 Page 2 of 2

Fakulteit Gesondheidswetenskappe Faculty of Health Sciences

Verbind tot Optimale Gesondheid · Committed to Optimal Health

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Posbus/PO Box 19063 · Tygerberg 7505 · Suid-Afrika/South Africa

Tel.: +27 21 938 9075 · Faks/Fax: +27 21 931 3352

Annexure E: Department of Health approval letter



Verwysing
Reference RP16 /2010
Isalathiso

Navrae
Enquiries Dr A Dearham
Imibuzo

Telefoon
Telephone 021 483 4193
Ifowuni

**DEPARTEMENT VAN GESONDHEID
DEPARTMENT OF HEALTH
ISEBE LEZEMPILO**

P.O. Box 400
Ceres. 6835

FAX: **023 3123569 (H) 023 3161135 (W)**

Dear Johanna M Abrahams

RE: The Prevalence of Post Natal Depression (PND) in a Rural Setting.

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research. Please contact Mrs Marvina Johnson to assist you with access to the facilities:

- Clinics: 1. Annie Brown - Mrs M Johnson Tel: (023) 348 8120
 2. Bella Vista
 3. Tulbagh
 4. N'duli

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final report within six months of completion of research. This can be submitted to the provincial Research Co-ordinator (healthres@pgwc.gov.za).
3. The reference number above should be quoted in all future correspondence.

We look forward to hearing from you.

Yours sincerely

DR J CUPIDO
DEPUTY-DIRECTOR GENERAL
DISTRICT HEALTH SERVICES AND PROGRAMMES
DATE:

CC: DR L PHILLIPS

DIRECTOR: CAPE WINELANDS

Annexure F: Demographic and psychosocial risk factors

Folder no.: _____ D.O.B. yourself _____ D.O.B. baby _____

Insert an X in the most appropriate block

1. DEMOGRAPHIC AND OBSTETRIC DETAILS

1.1 Maternal age:

--

1.2 Marital status:

	Married
	Unmarried
	Divorced
	Separated
	Widow
	Other Specify

1.3 Level of Education:

0	No Schooling
1	Grade 1 – 3
2	Grade 4 – 5
3	Grade 6 – 7
4	Grade 8 – 9
5	Grade 10 – 11
6	Grade 12
7	Tertiary

1.4 Pregnancies

	How many pregnancies
	How many children
	Specify.....

1.5 Mode of Delivery: last pregnancy:

	Normal delivery
	Caesarean section
	Instrumental

2. PSYCHO-SOCIO and DEMOGRAPHIC FACTORS

2.1 Employment / Unemployed and Income:

	Employed: self
	Unemployed: self
	Partner unemployed
	Partner employed
	Single income
	Family income

Income

1	≤ R500
2	R501 – R1000
3	R1001 – R3000
4	R3001 – R5000
5	R5001 – R10000
6	R10000+

2.2 Past psychiatric history:

	Family psychiatric history Specify.....
	Personal history of abuse (emotional, physical and sexual)
	Specify.....

2.3 Life events

	One or more life events
	Severity: minor
	Severity: major

2.4 Partner relationship:

	General dissatisfaction?
	Communicating problems?
	Relationship worsening?
	Emotional support?

2.5 Family/Social Support:

	Unsatisfactory support: Emotional / Practical
	Dissatisfaction with psychological crisis support
	Satisfactory support

2.6 Baby factors:

	Not desired sex of baby
	Baby unwelcome
	Colic or reflex
	Unplanned, but welcome

Administered / Reviewed by: _____

Date: _____

Annexure G: Edinburgh postnatal depression scale (EPDS)

Folder no.: _____

Address: _____

Date of birth: _____

Baby's DOB: _____

Contact no.: _____

Instructions

As you have recently had a baby, we would like to know how you are feeling now. Please **choose the answer that comes closest** to how you have felt **IN THE PAST SEVEN DAYS**, not just how you feel today. (Please tick your answer with an **X** in the circle)

Question 1

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

- As much as I always could
- Not quite so much now
- Definitely not so much no
- Not at all

Question 2

I have looked forward with enjoyment to things:

- As much as I ever did
- Rather less than I used to
- Definitely less than I used to
- Hardly at all

Question 3

I have blamed myself when things went wrong:

- Yes, most of the time
- Yes, some of the time
- Not very often

- No, never

Question 4

I have been anxious or worried for no good reason:

- No, not at all
- Hardly ever
- Yes, sometimes
- Yes, very often

Question 5

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

- Yes, quite a lot
- Yes, sometimes
- No, not so much
- No, not at all

Subtotal: _____

Question 6

Things have been getting on top of me:

- Yes, most of the time I haven't been able to cope at all
- Yes, ometimes I haven't been coping as well as usual
- No, most of the time I have coped quite well
- No, I have been coping as well as ever

Question 7

I have been so unhappy that I have difficulty sleeping:

- Yes, most of the time
- Yes, sometimes
- Not very often
- No, not at all

Question 8

I have felt sad or miserable:

- Yes, most of the time
- Yes, quite often
- Not very often
- No, not at all

Question 9

I have been so unhappy that I have been crying:

- Yes, most of the time
- Yes, quite often
- Only, occasionally
- No, never

Question 10

The thought of harming myself has occurred to me:

- Yes, quite often
- Sometimes
- Hardly never
- Never

Subtotal page 1: _____

Subtotal page 2: _____

Total Score: _____

Administered / Reviewed by: _____

Date: _____

Annexure H: Beck depression inventory (BDI)

Folder no. _____ D.O.B. yourself: _____ D.O.B. baby: _____

Instructions: Read statements carefully, and then pick out the **one statement** in each group that **best describes** the way **you have been feeling** during the **past two weeks, including today**. Circle the number. If several statements in the group seem to apply equally well, circle the highest number for that group. Only **one** can be chosen in any group. Including item 16 (changes in sleeping pattern) or item 18 (Changes in appetite).

<p>1. Sadness</p> <p>0 I do not feel sad.</p> <p>0 I feel sad much of the time.</p> <p>0 I am sad all the time.</p> <p>0 I am so sad or unhappy that I can't stand it.</p> <p>2. Pessimism</p> <p>0 I am not discouraged about my future.</p> <p>0 I feel more discouraged about my future than I used to be.</p> <p>0 I do not expect things to work out for me.</p> <p>0 I feel my future is hopeless and will only get worse.</p>	<p>7. Self-Dislike</p> <p>0 I feel the same about myself as ever.</p> <p>0 I have lost confidence in myself.</p> <p>0 I am disappointed in myself.</p> <p>0 I dislike myself.</p> <p>8. Self-Criticalness</p> <p>0 I don't criticize or blame myself more than usual.</p> <p>0 I am more critical of myself than I used to be.</p> <p>0 I criticize myself for all of my faults.</p> <p>0 I blame myself for everything bad that happens.</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

3. Past Failure

- 0 I do not feel like a failure.
- 0 I have failed more than I should have.
- 0 As I look back, I see a lot of failures.
- 0 I feel I am a total failure as a person.

4. Loss of Pleasure

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 0 I don't enjoy things as much as I used to enjoy.
- 0 I get very little pleasure from the things I used to enjoy
- 0 I can't get any pleasure from things I used to.

5. Guilty Feelings

- 0 I don't feel particularly guilty.
- 0 I feel guilty over many things I have done or should have done

- 0 I feel quite guilty most of the time.

9. Suicidal Thoughts or Wishes

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

10. Crying

- 0 I don't cry anymore than I used to.
- 0 I cry more than I used to.
- 0 I cry over every little thing
- 0 I feel like crying, but I can't

11. Agitation

- 0 I am no more restless or wound up than usual.
- 0 I feel more restless and wound up than usual.
- 0 I am so restless or agitated that it's hard to stay still
- 0 I am so restless or agitated that I have to keep

0 I feel guilty all of the time.

6. Punishment Feelings

- 0 I don't feel I am punished.
- 0 I feel I may be punished.
- 0 I expect to be punished.
- 0 I feel I am being punished.

13. Indecisiveness

- 0 I make decisions about as well as ever.
- 0 I find it more difficult to make decisions than usual.
- 0 I have much greater difficulty in making
- 0 I have trouble making any decisions.

14. Worthlessness

moving or doing something.

12. Loss of Interest

- 0 I have not lost interest in other people or activities
- 0 I am less interested in other people or things than before
- 0 I have lost most of my interest in other people or things.
- 0 It's hard to get interested in anything.

18. Changes in appetite

- 0 I have not experienced any change in my appetite
-
- 0 a My appetite is somewhat less than usual.
- 0 b My appetite is somewhat greater than usual.
-
- 0 a My appetite is much less than before.
- 0 b My appetite is much greater than usual.
-
- 0 a I have no appetite at all
- 0 b I crave food all the time

19. Concentration Difficulty

- 0 I do not feel I am worthless
- 0 I don't consider myself as worthwhile and useful as I used to.
- 0 I feel more worthless as compared to other people
- 0 I feel utterly worthless.

15. Loss of Energy

- 0 I have as much energy as ever.
- 0 I have less energy than I used to have
- 0 I don't have enough energy to do very much
- 0 I don't have enough energy to do anything

16. Changes in Sleeping Pattern

0 I have not experienced any change in my sleeping pattern.

-
- 0 a I sleep somewhat more than usual.
 - 0 b I sleep somewhat less than usual.
-
- 0 a I sleep a lot more than usual.
 - 0 b I sleep a lot less than usual.

- 0 I can concentrate as well as ever.
- 0 I can't concentrate as well as usual.
- 0 It's hard to keep my mind on anything for very long.
- 0 I find I can't concentrate on anything.

20. Tiredness or Fatigue

- 0 I am no more tired or fatigued than usual.
- 0 I get more tired or fatigued more easily than
- 0 I am too tired or fatigued to do a lot of the things I used to do.
- 0 I am too tired to do most of the things I used to do

21. Loss of interest in sex

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

-
- 0 a I sleep most of the day.
- 0 b I wake up 1-2 hours early and can't get back to sleep.

17 Irritability

- 0 I am no more irritable than usual.
- 0 I am more irritable than usual.
- 0 I am much more irritable than usual.
- 0 I am irritable all the time.

Subtotal Page 1: _____

Subtotal Page 2: _____

Total Score: _____

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Annexure I: Proof of editing



SERVICES



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TO WHOM IT MAY CONCERN

This letter serves to confirm that the undersigned

ILLONA ALTHAEA MEYER

has proof-read and edited the document contained herein for language correctness.

(Ms IA Meyer)

SIGNED