Measuring and Understanding

Various Aspects of Postpartum Distress

in Makkah, Saudi Arabia

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A thesis in fulfilment of the requirement for the degree of
Doctor of Philosophy

School of Public Health and Community Medicine
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Sydney, Australia

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Postpartum Distress is a significant public health problem, in Saudi Arabia, with no documented studies for Makkah. This study comprised of two phases. First, the quantitative study which aimed to assess 1) the prevalence of Postpartum Distress in women using a combination of measures, an approach previously not used with Arabic women, 2) valid cut-off scores for the Edinburgh Postnatal Depression Scale (EDPS) and Being a Mother-13 Scale (BaM-13), 3) transient and enduring distress. Second, the qualitative study to explore the conceptualisation of Postpartum Depression (PPD) and accessibility to primary mental health services.

A questionnaire was administered to 354 women attending primary health care centres. Participants completed four measures: EPDS, Faces Scales, Matthey Generic Mood Question (MGMQ) and BaM-13. Two weeks later, the measures were repeated with 185 women through telephone interviews. They also responded to the Mini-International Neuropsychiatric Interview and attributional probing. 11 women and 9 primary health care providers were interviewed in-depth to understand conceptualisation of PPD and accessibility to services.

The prevalence of Depression was 19.5% using usual DSM criteria in which 16.2% had Major Depression and 3.2% had Minor Depression. Using attributional probing, the Major Depression rate dropped from 16.2% to 8.1%. The impact of Anxiety appears to be less than Depression (24.9% to 15.1%). Prevalence based on self-reported measures was also examined. Based on the validated cut-off score of EPDS in this study (7 or more), approximately 29% of women scoring high on Time 1 no longer scored high two weeks later. Comparison of four self-report measures to screen performance was also tested.

Women identified symptoms of PPD; most did not acknowledge it as an illness. Social and supernatural causes were considered as major contributors to PPD. Stigma and transport were significant barriers for accessibility.

The prevalence rate of PPD was high especially among Saudi women, yet they did not recognise PPD as an illness. EPDS and BaM-13 showed good psychometric properties. However MGMQ performed well in detecting Postpartum Distress on the other measures. Culture and religion underpin how PPD is conceptualised and have an influence on accessibility. Early screening integrated with maternal and child health services Postpartum Distress is recommended.

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Dedication

I dedicate this thesis to

My husband Nizar

for his endless love, ultimate support, incredible encouragement and trust in me.

My children Saleh and Alyah

for their endless love and enormous patience.

My parents Hashim and Zakiah

for their continuous love, support and prayers.
Acknowledgments

Praise be to Allah first and foremost.

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me so much and you believed in my capability. I am so proud to be the daughter of such great parents.

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Thank you to all of you!
Conference presentations arising from this thesis


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Abstract

Postpartum Distress is a significant public health problem, in Saudi Arabia, with no documented studies for Makkah. This study comprised of two phases. First, the quantitative study which aimed to assess 1) the prevalence of Postpartum Distress in women using a combination of measures, an approach previously not used with Arabic women, 2) valid cut-off scores for the Edinburgh Postnatal Depression Scale (EDPS) and Being a Mother-13 Scale (BaM-13), 3) transient and enduring distress. Second, the qualitative study to explore the conceptualisation of Postpartum Depression (PPD) and accessibility to primary mental health services.

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Women identified symptoms of PPD; most did not acknowledge it as an illness. Social and supernatural causes were considered as major contributors to PPD. Stigma and transport were significant barriers for accessibility.
The prevalence rate of PPD was high especially among Saudi women, yet they did not recognise PPD as an illness. EPDS and BaM-13 showed good psychometric properties. However MGMQ performed well in detecting Postpartum Distress on the other measures. Culture and religion underpin how PPD is conceptualised and have an influence on accessibility. Early screening integrated with maternal and child health services Postpartum Distress is recommended.
## Abbreviations

<table>
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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>95% CI</td>
<td>95% confidence interval</td>
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<tr>
<td>AADA</td>
<td>Acute Adjustment Disorder with Anxiety</td>
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<td>APA</td>
<td>American Psychological Association</td>
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<tr>
<td>BaM-13</td>
<td>Being a Mother Scale -13</td>
</tr>
<tr>
<td>BCG</td>
<td>Bacillus Calmette–Guérin</td>
</tr>
<tr>
<td>BaM-13 Scale</td>
<td>Being a Mother -13 Scale</td>
</tr>
<tr>
<td>CDSI</td>
<td>Central Department of Statistics and Information</td>
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<tr>
<td>DSM-IV</td>
<td>Diagnostic and Statistical Manual for Mental Disorders, fourth edition</td>
</tr>
<tr>
<td>DSM-IV-TR</td>
<td>Diagnostic and Statistical Manual for Mental Disorders, fourth edition, text revision</td>
</tr>
<tr>
<td>DSM-5</td>
<td>Diagnostic and Statistical Manual for Mental Disorders, fifth edition</td>
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<tr>
<td>EM</td>
<td>(illness) explanatory model</td>
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<tr>
<td>EPDS</td>
<td>Edinburgh Postnatal Depression Scale</td>
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<td>GAD</td>
<td>generalized anxiety disorders</td>
</tr>
<tr>
<td>GPs</td>
<td>general practitioners</td>
</tr>
<tr>
<td>HCPs</td>
<td>health care providers</td>
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<tr>
<td>M</td>
<td>Mean</td>
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<tr>
<td>MGMQ</td>
<td>Matthey Generic Mood Questions</td>
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<td>MINI</td>
<td>Mini-International Neuropsychiatric Interview</td>
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<tr>
<td>MoH</td>
<td>Ministry of Health</td>
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<tr>
<td>OCD</td>
<td>obsessive-compulsive disorder</td>
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<td>PHC</td>
<td>primary health care</td>
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<tr>
<td>PPD</td>
<td>postpartum depression</td>
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<td>PTSD</td>
<td>post-traumatic stress disorder</td>
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<td>SA</td>
<td>Saudi Arabia</td>
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<td>SD</td>
<td>standard deviation</td>
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<tr>
<td>SR</td>
<td>Saudi Riyals</td>
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<tr>
<td>UNSW</td>
<td>University of New South Wales</td>
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<tr>
<td>WEF</td>
<td>World Economic Forum</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Chapter 1
Introduction

Postpartum Depression has been recognised as the most prevalent mood disorder after childbirth (Stewart, Robertson, Dennis, Grace, & Wallington, 2003) and is now recognised globally as a public health problem. The postpartum period increases women’s vulnerability to poor mental health (Stocky & Lynch, 2000; Dennis & Chung-Lee, 2006). During this period, women most commonly suffer from psychiatric complications such as Postpartum Depression (PPD) and Anxiety (Wisner, et al., 2013). This thesis focuses on Postpartum Distress which includes PPD and Anxiety disorders.

Studies show that PPD affects approximately 20% of women during the first year postpartum (Gavin, et al., 2005). Moreover, according to Wisner and colleagues (2013), PPD and Anxiety frequently co-occur. Yet, postpartum women who have symptoms of Depression are more likely to report Anxiety symptoms. Hendrick, Altshuler, Strouse and Grosser (2000) found 73% of women who had PPD experienced Anxiety symptoms. Nevertheless, approximately 10% of postpartum women meet criteria for a diagnosis of Anxiety alone (Miller, Pallant, & Negri, 2006; Reck, et al., 2008). Therefore, in addressing PPD, it is also important to consider Anxiety. If PPD and Anxiety is unrecognised or are left untreated, the impact is significant, not only for the mother but also the infant, family and society (Dennis & Ross, 2006; Chaaya, et al., 2002). More details are provided in Chapter 3.

There is a wide range of literature documenting PPD; however, literature on postpartum Anxiety has received little attention (van der Veldt, Lok, Pop-Purceleanu, Tendolkar & van Eijndhoven, 2014; Wenzel, Haugen, Jackson & Brendle, 2005; Wenzel, 2011). Studies reporting PPD are mostly from Western countries, with a few studies coming from Arab countries that specifically focus on PPD. More details are provided in Chapter 3.

There are a few recent studies from Saudi Arabia that have focused on PPD only. These studies report a rate of PPD ranging from 6.3% to 35.2% (Alasoom & Koura, 2014; Alharbi & Abdulghani, 2014; Al-Johani, 2007; Amr, Balaha, & Al Moghannum, 2012;
Amr & Balaha, 2010). There is inconsistency in the rates reported in these studies. The inconsistency is likely due to the variation of the assessment tools used and time of assessment (further details in Chapter 3). Despite these few studies, still there is minimal available data on PPD in Saudi Arabia. This thesis aims to address this gap by focusing on Postpartum Distress in Makkah, Saudi Arabia.

Many countries have successfully addressed postpartum health of the mother. In some countries, such as Australia (Beyondblue, 2011), routine screening for PPD and related disorders has become a national public health policy for women. The purpose of screening is to identify the women most at risk of Depression and Anxiety, provide appropriate treatments and improve clinical outcomes (Yawn, LaRusso, Bertram, & Bobo, 2015). Despite the fact that PPD has become increasingly recognised as a significant health problem in Saudi Arabia, the provision of mental health services, especially during the postpartum period, is neglected. There is no routine screening for the mental health of postpartum mothers in primary health care settings, even though these settings provide most of the antenatal care and postpartum follow-up; the latter is scheduled with the baby’s vaccination visits. In the absence of screening for Postpartum Distress, there is no service data available on the Postpartum Distress situation in Saudi Arabia.

Detection of Postpartum Distress is usually conducted using a self-report measure, first as a screening measure and then followed by a diagnostic interview to confirm whether women meet the diagnostic criteria of Depression or Anxiety or not (Cox, Murray, & Chapman, 1993; Reck et al., 2008). The gold standard of assessing postpartum mood disorders is to use diagnostic interviews based on DSM or ICD-10 criteria (Ayers, Coates & Matthey, 2015). However, as discussed in Chapter 3, there are methodological issues relating to these screening measures.

There is inconclusive evidence to support the use of any self-report instruments in the postpartum population apart from the EPDS. Nearly all perinatal studies report on rates of ‘possible Depression’ using the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987). The EPDS was designed to screen women for Depression in the postpartum period. It has been validated for postpartum use among Arabic women (Ghubash, Abou-Saleh, & Daradkeh, 1997; Matthey & Barnett, 1997; Agoub, Moussaoui & Battas, 2005). Each of these studies, however, has reported different cut-
off scores, based on different assessment criteria (more details are provided in Chapter 3). It has been argued that the EPDS should be validated in the sample of women that it is used for (Lien, 2007). Therefore, in this study the validity of the EPDS is assessed among a group of women attending primary health centres in Makkah, Saudi Arabia.

There are many other available self-report instruments to identify Depression and Anxiety in the postpartum period (examples of these instruments are provided in Chapter 3). In this study, besides the EPDS, a generic mood question (the Matthey Generic Mood Question (MGMQ); Matthey, Valenti, Souter & Ross-Hamid, 2013) that assesses a variety of negative emotions, not just Depression, is also used. Given that the literacy rate in the population to be studied is lower than in Western populations, a measure using a pictorial representation of a person’s mood is also investigated. The performance of these measures was assessed compared to DSM diagnostic status for Depression and Anxiety disorders using a standardised diagnostic interview: the Mini International Neuropsychiatric Interview (MINI; Sheehan, et al., 1998).

As the literature review (Chapter 3) will show, most prevalence studies adapt a single administration of the self-report scale to report on the prevalence rate. But a few studies have showed that when a self-report scale is re-tested after a short time interval, many women no longer score ‘high’. The impact of relying on the score based upon single administration may be unnecessary referral to mental health services and women can be falsely labelled with PPD (Ayers et al., 2015). It is recommended therefore, that both transient and enduring distress are measured by repeating the assessment (Wickberg & Hwang, 1996; Matthey & Ross-Hamid, 2012). In this study, the repeat testing approach was used with EPDS, MGMQ and the Faces Scale to measure happiness and Anxiety. More details on these instruments are provided in Chapter 3. To the best of my knowledge, very few studies have used multiple instruments and repeat testing to assess Anxiety and Depression in postpartum mothers. It is hoped that using this approach will result in a better understanding of the health of postpartum women in Saudi Arabia. Such an understanding adds to the global knowledge of women’s health in the Arab world.

Diagnostic interviews such as the MINI (Sheehan et al., 1998) have also been suggested as the gold standard for assessing Postpartum Distress. However, the relevance of diagnostic criteria to women in the postpartum period has been questioned. The
suitability of the symptom criteria for Depression and Anxiety disorders for women in the postpartum period has been debated, because of the overlap of diagnostic symptoms with normal postpartum symptoms such as body fatigue (Beck, Reynolds & Rutowski, 1992; Ayers et al., 2015). As a result of such overlaps, the rates of PPD and Anxiety may be overestimated. Researchers such as Liebowitz (1993), Csatordai and colleagues (2009) and Matthey and Ross-Hamid (2011) suggest that it is important to validate the diagnostic symptoms. Most of the available studies from Saudi Arabia have not adhered to the current recommendations and therefore, the reliability of the PPD rates reported in the current literature is questionable. In this study, attributional probing with the MINI was used; asking women if the symptoms they reported on the MINI were due to their mood or worries, to the practical demands of having a baby, due to both or not sure. Using this approach in this PhD study helps in establishing a more reliable understanding of the postpartum wellbeing of women in Saudi Arabia.

Screening for PPD and Anxiety has the potential to identify women who are at high risk of mood disorders but not to assess the experience of motherhood. Women’s unmet expectations of motherhood have been associated with more difficult experiences of motherhood and dissatisfaction with their role as a mother. It has been argued that ‘high’ scores on the EPDS self-report mood measure does not reflect women’s dissatisfaction with the motherhood role (Matthey, 2011). Such screening may therefore be helpful for early detection and interventions to improve women’s experience of motherhood. The Being a Mother-13 Scale (BaM-13) (Matthey, 2011) was developed to examine the experience of motherhood in women with newborns, infants and toddlers. The scale has been used on different samples of English-speaking women and has shown good clinical discrimination between women with different mood experiences. However, it has not been used with Arabic-speaking women. Therefore, in the present study, BaM-13 was used to assess if it would assist in identifying the wider experience of motherhood among women in Saudi Arabia.

Understanding how PPD is conceptualised is important for gaining knowledge about how it can be detected, managed and prevented, and therefore, how appropriate professional help is accessed. There is little qualitative research on understanding PPD from non-Western countries. The available literature is discussed in Chapter 3. Understanding the cultural conceptualisation of PPD in a Saudi context has not yet been
investigated. There is also a gap in the literature on help-seeking behaviours and accessibility of primary mental health services, particularly those related to PPD. This thesis aims to also explore how women in Saudi Arabia conceptualised PPD.

1.1 Research Objectives

Quantitative Research objectives

1. determine the valid cut-off score for EPDS in Arabic-speaking women living in Saudi Arabia (against the diagnosis of Depression (Major or Minor) or Anxiety disorders
2. assess the prevalence rate of Postpartum Distress using different ways of measuring, including:
   a. DSM diagnoses of Depression and Anxiety, using ‘usual criteria’ and a woman’s attribution of symptom relevance criteria
   b. different self-report mood scales (EPDS; Faces Scales for Happiness and Anxiety; MGMQ)
3. compare the screening performance during the postpartum period of self-report measures
4. assess transient and enduring distress rates
5. determine the validity of BaM-13 in Arabic-speaking women living in Saudi Arabia.

Qualitative Research Objectives

1. understand the conceptualisation of PPD in women in Saudi Arabia
2. explore the barriers to accessing primary mental health services in Makkah, Saudi Arabia.

1.2 Significance of the study

As discussed earlier, little is known about rates of PPD and Anxiety in Saudi Arabia, particularly in Makkah, a multiethnic and multicultural city. There is also a lack of data on social and cultural factors that facilitate or hinder access to mental health care during the postpartum period. Therefore, this is an area that needs further attention and investigation. This thesis aims to address this gap and the findings of this study would help achieve the following:
1. Provide information on how women conceptualise PPD and the factors that either facilitate or act as barriers for women to access mental health services during the postpartum period. Such information can form the foundation for developing socially and culturally appropriate mental health services for women in Saudi Arabia and migrant women with an Arabic background living in other countries.

2. Add to the global knowledge on Postpartum Distress in Arab countries. This added literature could enhance service provision in countries similar to Saudi Arabia and countries with immigrants of Arabic background.

3. Produce recommendations to Saudi health administrators, policy makers and health care practitioners to improve mental health services in Saudi Arabia, particularly in Makkah city.

1.3 Organisation of the thesis

This thesis is divided into six chapters. This chapter has provided the background of the study, noted the research gaps, listed the research questions and the organisation of the thesis.

Chapter 2 presents an overview of Saudi Arabia and its health system.

Chapter 3 provides a comprehensive literature review of PPD and Anxiety, screening for PPD and Anxiety, the experience of motherhood, understanding of the role of culture in the conceptualisation of PPD and accessibility of primary health care. Chapter 4 presents the quantitative study, aimed at examining the prevalence of PPD and Anxiety, transient and enduring distress rates, the validation of Arabic versions of EPDS and BaM-13, and screening performance of the measures used in this thesis. The chapter includes the methods. The findings and discussion of each quantitative research question are presented within the broader context of the existing literature.

Chapter 5 presents the qualitative study, aimed at understanding the conceptualisation of PPD, and explores barriers and facilitators to accessing primary mental health care services.

In Chapter 6 the general discussion and conclusion are provided, where the findings of both the quantitative and qualitative studies are brought together. The thesis concludes with a note on the strength and limitations of the current study and implications and recommendations for Saudi Arabia and for research settings.
Chapter 2
A brief overview of Saudi Arabia and its health care system

2.1 Introduction

This chapter presents a preliminary overview of the general and demographic information, cultural background, Saudi maternal and child health care, the mental health system, and mental health in the primary health care system.

2.2 General and demographic information

Saudi Arabia (officially known as the Kingdom of Saudi Arabia) is the largest Arab country in the Middle East. Its total area is 2,250,000 square kilometres, which is mainly desert and uninhabited (see Figure 2.1). Saudi Arabia has a population of 28 million and population growth is 1.9% per annum. Islam is the only religion practiced, officially recognised and allowed in Saudi Arabia.

Figure 2.1: Map of Saudi Arabia and surrounding countries (ezilon Maps, 2009)
The country’s capital is Riyadh, in the middle of the country. In the west is Makkah city, one of the largest cities in Saudi Arabia, which has a mixture of different ethnicities and nationalities. Makkah has the highest population density of all Saudi regions and the highest percentage of non-Saudi residents (Central Department of Statistics and Information [CDSI], 2007). The Makkah resident population in 2013 was approximately two million (Ministry of Health [MoH], 2013) and visitors come in similar numbers every year during the *hajj* (‘pilgrimage’) period. The percentage of non-Saudis living in Makkah in 2013 was 45% (MoH, 2013), which means the city has the highest non-Saudi population in Saudi Arabia. This has a significant impact on the health care system.

### 2.3 Cultural background

The extended family is the primary social unit in Saudi Arabia. Households are traditionally made up of a male head of the family or father (who is the breadwinner and decision maker), his wife or wives and unmarried daughters and sons. Marriage is considered to be the most important social institution in Saudi Arabia. Despite some modernisation or Westernisation, most marriages are still traditional affairs, arranged by fathers, mothers or relatives. Saudis (and Muslims in general) value family unity, and social and family responsibilities (Leininger & McFarland, 2002). Polygamy is practiced in Saudi Arabia, and men may have up to four wives at a time (Al-Krenawi, 2013). The traditional family structure and organisation have major implications for the mental wellbeing of the pregnant and postpartum woman, as will be seen in Chapter 5.

In Saudi tradition, the birth of a child is specially celebrated. Saudi women, like other Muslim women, practise 40-day postpartum seclusion. After birth, women mostly return to their parents’ home, staying indoors so their families might take care of them and provide special food for them (Leininger & McFarland 2002; Sidumo, Ehlers, & Hattingh, 2010). Greater value is placed on male babies than female babies in Saudi Arabia. Mothers of a baby boy receive high status in the family and are called *Um* meaning ‘the mother of’, followed by the baby’s name; while fathers are called *Abo* meaning ‘the father of’, followed by the baby’s name, a tradition only practised for male children.
Saudi Arabia is known as one of the more patriarchal societies in the world (Moghadam, 1992). The recent global gender gap report (World Economic Forum [WEF], 2014) ranked Saudi Arabia 130 out of 147 countries, despite improvements in the rate of involvement of women in political and economic structures. According to the report, Saudi women also scored highly in terms of health and educational attainment. The female literacy rate was reported to be 91% (compared to male literacy of 97%). However, women’s education, travel movements and access to health services are still constrained by a strong cultural tradition of male guardians. Al-Shahri (2002) states that Saudi women must discuss and gain consent from a husband or father for any decisions relating to health issues. Furthermore, women are not allowed to drive in Saudi Arabia, and they therefore must travel with their male guardians. The socially and culturally expected gender roles and the restrictions on mobility of women negatively impact on women’s wellbeing (Alyaemni, Theobald, Faragher, Jehan, & Tolhurst, 2013).

2.4 Saudi maternal and child health care

The Saudi Ministry of Health implemented maternal and child health care in 1985 in some regions of Saudi Arabia. From 1995, maternal and child health care has been provided through primary health care centres. Primary health care (PHC) plays an important role in the health and wellbeing of mothers and babies in Saudi Arabia. PHC provides follow-up assessment of pregnant mothers as well as advice and guidance to women of childbearing age before pregnancy, in terms of health status and preventive measures to ensure safe delivery. In addition, family histories are noted and women are clinically examined to identify any potential risk factors. Pregnancy related laboratory tests, as well as immunisation against some dangerous diseases, such as rubella and tetanus, are provided for women during pregnancy. Periodic follow-up is provided at least once a year for women of childbearing age. As for pregnant women, there are special agendas for follow-up during pregnancy to check on the mother and her unborn child to ensure a healthy pregnancy and the birth of a baby who is in good physical, mental and psychological health.

The Saudi Ministry of Health has developed a ‘healthy passport’ system (focusing on the health of both mother and child), which aims to record histories and patient monitoring and follow-up health status for mother and child (up to age five). Results
from any necessary tests and analyses are documented in the passport and used in primary health centres as a primary reference for the health of the mother and her child. As a result, the proportion of births under medical supervision has risen to 95% and 94% of births are of babies weighing at least 2.5 kg. The infant mortality rate has decreased to 16.5 per 1000 live births and the maternal mortality rate was 1.4 deaths per 100,000 live births in 2011 (MoH, 2013). The focus of this thesis is postnatal care; therefore, the following section describes the structure of postnatal care in Saudi Arabia.

Most Saudi women give birth in hospital and receive postnatal medical assessment before discharge. After discharge it is recommended that women visit a PHC centre to have their children vaccinated. Vaccination is free of charge to all children in Saudi Arabia, for both Saudi citizens and expatriates, through PHC centres.

Postnatal care includes a general medical examination and women are also assessed to ascertain if they at high risk of iron or folic acid deficiency. Postnatal care does not include other aspects of care; for example, education and mental health. There is no recent data available on postnatal care coverage in Saudi Arabia; however, a 1995 study showed that it was quite high, at 88% (Baldo, al-Mazrou, Farag, & al-Shehri, 1995). El-Gilany and Aref (2000) conducted an interview survey on a random sample of 375 households, in which the majority of women (66.9% in rural areas and 95.9% in urban areas) were found to have registered at their primary health care centres. The study recommended home visit services and education programs for women about the benefits of pregnancy assessment, which could contribute to greater antenatal care coverage.

The provision of mental health services, especially during the postpartum period, is neglected in Saudi Arabia. There is no routine screening for mental health for postpartum mothers in primary health care settings, despite the fact that most antenatal care and follow-up postpartum care is provided in primary health settings, and most postpartum follow-up visits are scheduled with the baby’s vaccinations. Thus, there is little available information on mental health disorders in women in Saudi Arabia in primary health care settings, especially during pregnancy or the postpartum period.
2.5 The mental health system

Health services have grown rapidly in order to provide psychiatric services to the increasing number of people with mental illness in Saudi Arabia. In the last century, there were three phases during which mental health services were developed to deliver good and appropriate psychiatric care in Saudi Arabia. In 1952, the Ta’if Mental Hospital became the first 250-bed psychiatric hospital in the country (Ta’if city is located in Makkah province). At that time, patients with mental illness were isolated from society and no clinical care was provided, as the common belief was that mental illness was caused by an evil spirit or magic (Isaac & Armat, 1990).

In the 1960s, perceptions of mental illness changed due to the huge development of the Saudi economy during that period, and it came to be seen as a defect in an individual’s mind. Between 1962 and 1983, Ta’if Mental Hospital, also called Shehar Mental Hospital, was the main and only mental health care provider in Saudi Arabia. By 1973, its 250 beds had become inadequate to serve the 1,800 or so patients it dealt with each year (MoH, 2011). Inadequate resources led to delays in diagnosis and management of mental illness.

In 1983, decentralisation of mental health services began and many psychiatric hospitals were built across the country. Ta’if Hospital still has the highest capacity, with 670 beds (MoH, 2010). Mental health services in Saudi Arabia have continued to expand from the period before 1962 to the present. Saudi Arabia now has approximately 28 psychiatric hospitals and 3,770 beds (MoH, 2010). Over the three years from 2010, the Saudi Ministry of Health reported that the proportion of psychiatric outpatients had increased by 13.4% (MoH, 2013). However, mental health human resources have not met the high demand for psychiatric services.

Although Makkah city rated ninth in the number of psychiatric patients compared to the other cities in Saudi Arabia (MoH, 2013), the number of patients is actually very similar. Makkah city has one psychiatric hospital, which opened in 2014, with a capacity of 300 beds. This remains below the recommended number. Only ten of the 498 psychiatrists throughout the country are based in Makkah city and they are all males (MoH, 2010). Additionally, there are 183 social workers, 108 psychologists and 1,071 regular nurses in Makkah city. However, most of the mental health nurses do not have
special training in psychiatry, and most of psychologists and social workers do not have postgraduate degrees (Al-Habeesb & Qureshi, 2010). In addition, most of the psychiatric workforce is non-Saudi, which raises many challenges for the provision of quality care and management for Saudi patients. Cultural and social traditions may be very different and language barriers may make communication and understanding of mental health issues difficult for patients as well as their families and carers. In fact, non-Saudi health care providers, who may not speak Arabic, create dissatisfaction with the service among Saudi patients (Al-Ahmadi & Roland, 2005).

Despite the expansion of mental health services in Saudi Arabia, many people with mental illnesses do not access mental health services. Much of the care for mentally ill patients nowadays takes place in family settings. It is considered a religious obligation to take care of an unwell family member. Children do not leave the family home until they are married and the elderly are also cared for within the family, which results in large extended families living in one home. Because mentally ill patients are often taken care of within the family, mental health problems are often kept hidden. In Arabic contexts, patients with mental illness are highly stigmatised, rejected and isolated (Koenig, et al., 2014). Mental illness is still mostly believed to be caused by the evil eye, by black magic, or is seen as a punishment from God or arising because of drug addiction (Pridmore & Pasha, 2004). As a result of shame, stigma and taboos, family members do not discuss or even refuse to talk about mental health problems with medical professionals (Farooqi, 2006). Stigma-related problems, inadequate resources, a shortage of specialists in the discipline of psychiatry, social and cultural factors that prevent patients from seeking help when they are in need, and an absence of public awareness about mental health and associated diseases have created a gap in service provision.

2.6 Mental health in the primary health care system

The Alma-Ata Declaration on Primary Health Care, whose principles are essential for improving people’s health worldwide, was the result of an international conference held in Alma-Ata, Kazakhstan, in 1978. Primary health care services were established in 1989 across Saudi Arabia as a consequence of the Declaration, with the aim of improving the detection and treatment of diseases. In terms of better detection and
treatment of mental health problems, the World Health Organization (WHO) advocates that for countries with PHC centres, these should be the first point of contact for mentally ill patients (WHO, 2008a). Following the WHO recommendation, Saudi Arabia integrated mental health services into PHC centres to improve access to and delivery of care at the primary health level (Al-Habeeb & Qureshi, 2010). By 2006, Saudi Arabia had developed a national mental health policy. Mental health care saw a dramatic change with the 2007 introduction of the Saudi Arabian Mental and Social Health Atlas (SAMHA), which aimed to systematically identify and address mental health issues in the population. The plans also incorporated a four-year follow-up study (Al-Habeeb & Qureshi, 2010). The main strategy of the plan was to develop a national mental health service that would increase the number of mental health professionals, reform the quality of mental health care, extend services for those with addictions, establish continuing education programs on mental health problems, conduct research to guide clinical interventions, establish quality indicators, increase social services to the mentally ill, and improve the infrastructure of mental health care across Saudi Arabia. Some of these objectives have been achieved to some extent, although they are still very limited (Al-Habeeb & Qureshi, 2010).

PHC services in Saudi Arabia play an important role in the health and wellbeing of mothers and babies, especially shortly after delivery, as well as in vaccination programs and chronic disease treatment. PHC centres provide services such as radiology, pathology, dental services and vaccination to approximately 13,000 people per centre every year (MoH, 2010). However, mental health services at the PHC level are almost non-existent across the country and this at a time when the number of mentally ill people is increasing.

Research in Saudi Arabia has found that nearly 40% of PHC centre patients are suffering from mental disorders (Al-Habeeb & Qureshi, 2010). Data in Saudi Arabia indicate that there has been an increasing trend for both men and women to present at PHC centres with Depression and other mental illnesses (Al-Khatham & Ogbeide, 2002). The study randomly selected people aged 15–65 years and administered the Rahim Anxiety-depression scale (Al-Arabi, Rahim, Al-Bar, AbuMadiny, & Karim, 1999) which found that a third of PHC male patients had mental illness (Al-Khatham & Ogbeide, 2002). The prevalence of Depression in Saudi women is estimated at 20%,
which is similar to the prevalence worldwide (Becker, Al Zaid & Al Faris, 2002), and is most frequent among women aged between 15 and 44 years (MoH, 2010).

Many barriers have been identified to addressing mental health problems in primary health care settings in Saudi Arabia. Psychotropic treatment and mental health specialists are unavailable in PHC centres, which means people prefer to visit an outpatient clinic at a hospital instead of a PHC centre. In addition, general practitioners at PHC centres are not specifically trained to treat mental disorders. PHC centres still do provide limited services for mental health, including consultation and treatment of minor psychiatric disorders, but essential psychotropic medications are not available at these centres so most cases are referred to tertiary level health. The causes of mental health problems are commonly thought to be supernatural and patients often seek help from religious healers rather than seek professional help. These barriers make it difficult for professionals, especially non-Saudi professionals, to accurately recognise mental health problems.
Chapter 3

Literature review

3.1 Introduction

This chapter is divided into seven sections: Section 3.1 presents the introduction. Section 3.2 provides an overview of childbirth-related mental health disorders, including postpartum mood disorders and postpartum Anxiety disorders. Section 3.3 outlines screening measures used for PPD and Anxiety. It also presents the experience of motherhood, understanding of the role of culture in the conceptualisation of PPD and barriers and facilitators to access to primary mental health services.

3.2 Overview of childbirth-related mental health disorders

Although this section concentrates on PPD and postpartum Anxiety, the Baby Blues and Postpartum Psychosis are briefly described to illustrate differences in relation to prevalence and risk factors.

3.2.1 Postpartum mood disorders

In the literature, three postnatal mood disorders are described: Baby Blues, Postpartum Psychosis and PPD (Brockington, 1996).

*Baby Blues*

Baby Blues (also referred to as Maternity Blues) is a very common mood disturbance in the postpartum period, affecting around 30% to 75% of new mothers (Beck, et al., 1992; O’Hara, Schlechte, Lewis, & Wright, 1991). It is characterised by low mood, tearfulness, Anxiety, headache, irritability and mood lability (Hapgood, Elkind, & Wright, 1988; Kennerly & Gath, 1989). The symptoms, which occur in the first few days after childbirth, tend to peak at three to five days and often coincide with the onset of lactation (Miller, 2002; Hanley, 2013) and can continue for ten to 14 days (Milgrom, Martin, & Negri, 1999; Pope, 2000). Despite Maternity Blues being quite common,
there are no specific diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revision (DSM-IV-TR) (American Psychiatry Association [APA], 2000). It is likely that this lack of diagnostic criteria is what contributes to the variability in the reported prevalence rates. J.S Beck (1995) contends that the major issues with Baby Blues research include lack of definition, lack of standardised criteria to accurately examine the prevalence and severity or duration, and inconsistencies in methodology used in the studies.

The cause of Baby Blues has not been clearly identified. While there is speculation that the mood changes in Baby Blues are related predominantly to hormonal fluctuations that occur before and after childbirth, there is a lack of consensus on the influence of hormonal levels on postpartum mood disorders. Hapgood and colleagues (1988) and Kumar (1994) support the hormonal hypothesis, but O’Hara and colleagues (1991) report no significant effects involving progesterone or prolactin level or the ratio of level of prolactin to progesterone or any of the oestrogens to increase the development of Baby Blues. More recent studies suggest that hormonal fluctuations may be a significant contributor to Baby Blues. For example, Nappi and colleagues (2001) conducted a study of 40 new mothers to examine the association between serum allopregnanolone and progesterone levels postpartum and Baby Blues, and concluded that the possibility of a decrease in hormonal levels contributing to a decrease in ‘Blues’ in ‘sensitive women’ (p. 79) cannot be ruled out. In their study, 45% of women experienced Baby Blues and significantly decreased serum allopregnanolone levels were found in these women. Similarly, Miller (2002) also postulated that the more abrupt the changes in oestrogen and progesterone levels between pregnancy and the postnatal period, the greater the likelihood of developing the Baby Blues. No association between demographic factors (such as age, ethnicity, marital status and socioeconomic status) and development of Baby Blues has been reported (O’Hara et al., 1991; Bloch, Rotenberg, Koren, & Klein, 2005).

Women who experience Baby Blues have a greater risk of developing PPD (O’Hara, 2009). For example, Hapgood and colleagues (1988) conducted a prospective study on postnatal psychiatric disorders in which postpartum visual analogue scales were administered to 66 women to rate their mood state daily for two weeks following childbirth. Later, these women were interviewed using the Goldberg Standardised
Psychiatric Interview (PSI; Goldberg, Cooper, Eastwood, Kedward, & Shepherd, 1970) on four occasions up to 14 months postpartum. The study revealed there was a significant association between the Baby Blues and subsequent PPD. Similar associations between Baby Blues and PPD have been reported in more recent studies. For example, Takahash and Tamakoshi (2014) conducted a study aimed at assessing the possible risk factors in 100 healthy Japanese mothers who had spontaneous births of healthy full-term infants. Women completed the Maternity Blues Scale (MBS; Stein, 1980) and the EPDS; (Cox et al., 1987) at day 4–5 while they were hospitalized, and again one month later, at the time of the postpartum health check-up. The study revealed 15% of these Japanese women had Maternity Blues, which is much lower than the rates reported from previous prevalence studies. The authors concluded that Maternity Blues was significantly and positively correlated with PPD at one month after childbirth. Although their study had reported a low prevalence rate compared to other similar studies, this may relate to the fact that many Japanese mothers practice the tradition of postpartum confinement after the childbirth, which could reflect the low rate as they have been supported by their families. Both the Hapgood and colleagues (1988) and Takahash and Tamakoshi (2014) studies confirm that Baby Blues could be a predictor to PPD.

**Postpartum Psychosis**

In contrast to Baby Blues, Postpartum Psychosis is relatively rare, affecting one to two cases per 1000 postpartum women (Kendell, Chalmers & Platz, 1987; Kumar, 1994); it is a serious form of affective disorder in the postpartum period, which often requires hospitalisation and is considered as a psychiatric emergency. It develops within 48 hours to two weeks after childbirth. The symptoms include mania and severe Depression or elated mood (which can fluctuate rapidly), disorganised behaviour, delusions and hallucinations (Brockington, 2004). The DSM-IV-TR (APA, 2000) does not recognise postpartum psychosis as a distinct disorder. The current (fifth) edition (DSM-5) (APA, 2013), however, considers Postpartum Psychosis as a severe form of Major Depression or the onset/recurrence of a primary psychotic disorder, such as Schizophrenia, with peripartum-onset specified, which can occur during pregnancy or in the four weeks following delivery.
Evidence is still inconclusive as to the causes of Postpartum Psychosis. Many studies suggest Postpartum Psychosis could be related to Bipolar disorder; the postpartum presentation of Bipolar disorder after delivery is more frequent in patients with Postpartum Psychosis (Brockington, 2004; Yonkers, et al., 2004; Doucet, Jones, Letourneau, Dennis, & Blackmore, 2011; Sit, Rothschild & Wisner, 2006). Chaudron and Pies (2003) found that women with a history of Bipolar disorder, and women with a history of Postpartum Psychosis or a family history of Postpartum Psychosis, were more susceptible to Postpartum Psychosis and Bipolar disorder. Similarly, Doucet and colleagues (2011) found that approximately half of women who were diagnosed with Bipolar disorder also experience Postpartum Psychosis. Other researchers (e.g. Doucet et al., 2011; Sit et al., 2006) suggest genetic predisposition could play a role in women who experience Postpartum Psychosis. Recent studies have reported an association between Postpartum Psychosis and a history of child abuse (Bendall, Jackson, & Hulbert, 2010; Varese, et al., 2012).

3.2.2 Postpartum Depression (PPD)

Postpartum Depression falls between the two extremes of Baby Blues and Postpartum Psychosis. PPD refers to a non-psychotic depressive episode that begins in or extends into the postpartum period (O’Hara & Swain, 1996).

It is easy when looking at prevalence of PPD studies to assume that PPD develops after having a baby. This is not necessary to be the case. Many women have been depressed during pregnancy or prior to pregnancy (Marcus & Heringhausen, 2009). Evidence has shown that 50% of PPD cases begin before childbirth (Yonkers et al., 2001). Yet some studies do not distinguish between time of onset and the prevalence of PPD and this is problematic as PPD can occur prior to childbirth and remain throughout the postpartum period (Stowe, Hostetter, & Newport, 2005).

3.2.2.1 Prevalence
PPD has received considerable attention and is reported as the most prevalent mood disorder in the childbirth period. In developed countries, PPD affects 13% of mothers within the first year after giving birth (O’Hara & Swain, 1996). However, in developing countries the rate is higher, at 19.8% (Fisher, et al., 2012). Table 3.1 shows a review of
studies of prevalence of PPD. A wide variation in prevalence rates within and between
developed and developing populations has been noted (O’Hara & Swain, 1996; Gavin,
et al., 2005; Fisher et al., 2012; Norhayati, Hazlina, Asrenee, & Emilin, 2015), and the
findings are often difficult to compare. As an obvious limitation, each review study used
a different inclusion criterion, which significantly impacted on reporting the prevalence
rates. Moreover, there are methodological issues that make it difficult to compare
prevalence rates between countries.
The literature search identified 20 Arab country studies from 11 countries that assessed
the prevalence of PPD. Table 3.2 displays the prevalence rates of PPD in Arabic
countries. The prevalence of PPD in the Arab country studies ranges from 12% to 37%.
Findings from the studies show higher prevalence rates than those in developed
countries. However, a wide variation in prevalence rates within (e.g. 12.8–21% in
Lebanon, and 6.3–35.2% in Saudi Arabia) and between (e.g. 37.1% in Bahrain, and
16% in Jordan) Arab country studies has been noted. These inconsistencies may be
explained by differences between research methodologies as well as the different
measures used, which yielded large discrepancies in the prevalence.
### Table 3.1: A review of studies on the prevalence of PPD

<table>
<thead>
<tr>
<th>Year</th>
<th>Authors</th>
<th>Number of studies included</th>
<th>Prevalence</th>
<th>Specific postnatal population</th>
<th>Time period</th>
<th>Assessment measures identified</th>
</tr>
</thead>
</table>
| 1996 | O’Hara & Swain | 59 | Overall prevalence: 13%  
Self-report method: 14%  
Interview based method: 12% | Developed countries | Within the first year postpartum | Both self-report and diagnostic interviews |
| 2005 | Gavin et al. | 28 | CME: 6.5–12.9%  
MDE: 1–5.6% | Developed countries | During pregnancy to the first year postpartum | Only diagnostic interview schedule |
| 2006 | Halbreich & Karkun | 143 | 0% to almost 60% | 40 countries | First 12 months postpartum | Both self-report and diagnostic interviews |
| 2009 | Klainin & Arthur | 64 | 3.5–63.3% | Asian cultures | Within 12 months postpartum | Both self-report and diagnostic interviews |
| 2009 | Wong & Fisher | 10 studies; 4 reported the prevalence | 6.8–30.2% | Chinese population | Not mentioned | Both self-report and diagnostic interviews |
| 2010 | Sawyer, Ayers, & Smith | 35 | weighted mean prevalence of 18.3% | African cultures | Pregnancy and postpartum | Both self-report and diagnostic interviews |
| 2010 | Vigod, Villegas, Dennis, & Ross | 26 | 8 weeks PP: 15.4% vs 9.4%  
32 weeks PP: 10.7% vs 8.4% | Women with premature infants vs term infants | Between delivery and 52 weeks postpartum | Either self-report or observer-rated |
| 2011 | Roomruangwong & Epperson | 86 | Range 1% to 73.7% | Asian cultures | Pregnancy and postpartum | Both self-report and diagnostic interviews |
| 2011 | Villegas, McKay, Dennis, & Ross | 17 | Overall: 27%  
Developed countries: 21.5%  
Developing countries: 31.3% | Rural women from developing and developed countries | First 12 months postpartum | Both self-report and diagnostic interviews |
| 2012 | Fisher et al. | 34 | Overall: 15%  
Self-reported symptom measures: 20.8%  
Diagnostic assessments: 16.09% | Low- and lower-middle-income countries | The year after giving birth | Self-reported symptom measures and diagnostic assessments |
| 2015 | Norhayati et al. | 203 | Developing countries: 1.9–82.1%  
Developed countries: 0.1–26.3% | Developing and developed countries | First 12 months postpartum | Both self-report and diagnostic interviews |

Note. CME = Combined Depressive Episode, MDE = Major Depressive Episode.
Table 3.2: Prevalence of PPD in Arab country studies

<table>
<thead>
<tr>
<th>Country</th>
<th>Author and year</th>
<th>Study design</th>
<th>Sample size</th>
<th>Outcome measure (Cut-off scores)</th>
<th>Time frame postpartum</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>Al Dallal &amp; Grant, 2012</td>
<td>Cross-sectional</td>
<td>237</td>
<td>EPDS (12 or more)</td>
<td>8 weeks</td>
<td>37.1%</td>
</tr>
<tr>
<td>Egypt</td>
<td>Saleh, El-Bahei, El-Hadidy, &amp; Zayed, 2013</td>
<td>Longitudinal study</td>
<td>120</td>
<td>EPDS (13 or more)</td>
<td>1 week, 1, 3, 12 months</td>
<td>W1=10.6%; M1=19.4%; M3=26%; M12=2%</td>
</tr>
<tr>
<td>Jordan</td>
<td>Yehia, Lynn Clark Callister, &amp; Hamdan-Mansour, 2013</td>
<td>Cross-sectional</td>
<td>300</td>
<td>EPDS (11 or more)</td>
<td>within the first year postpartum</td>
<td>16%</td>
</tr>
<tr>
<td>Mohammad, Gamble, &amp; Creedy, 2011</td>
<td></td>
<td></td>
<td>353</td>
<td>EPDS (13 or more)</td>
<td>T1: 6–8 weeks, T2: 6 months</td>
<td>22.1%; 21.2%</td>
</tr>
<tr>
<td>Lebanon</td>
<td>El-Hachem, et al., 2014</td>
<td>Cross-sectional</td>
<td>228</td>
<td>EPDS (9 or more)</td>
<td>D30–40</td>
<td>12.8%</td>
</tr>
<tr>
<td>Chaaya et al., 2002</td>
<td></td>
<td></td>
<td>396</td>
<td>EPDS (12 or more)</td>
<td>T1: 7 days, T2: 4–5 months</td>
<td>Overall=21%</td>
</tr>
<tr>
<td>Morocco</td>
<td>Mchichi Alami, Kadri &amp; Berrada, 2006</td>
<td>Prospective study</td>
<td>100</td>
<td>EPDS (12 or more)</td>
<td>0–36 weeks</td>
<td>EPDS: 21% (the only rate reported without time frame) MINI: W2–3=16.8%; W12=14%; W24=12%; W36=6%</td>
</tr>
</tbody>
</table>

Note. EPDS = Edinburgh Postnatal Depression Scale, MINI = the Mini International Neuropsychiatric Interview, D30–40 = 30 to 40 days postpartum, W1 = 1 week postpartum, W2–3 = 2–3 weeks postpartum, W12 = 12 weeks postpartum, W24 = 24 weeks postpartum, W36 = 36 weeks postpartum, M1 = 1 month postpartum, M3 = 3 months postpartum, M12 = 12 months postpartum, T1 = Time 1, T2 = Time 2.
Table 3.2(Continued): Prevalence of PPD in Arab country studies

<table>
<thead>
<tr>
<th>Country</th>
<th>Author and year</th>
<th>Study design</th>
<th>Sample size</th>
<th>Outcome measure (Cut-off scores)</th>
<th>Time frame postpartum</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morocco</td>
<td>Agoub et al., 2005</td>
<td>Prospective study</td>
<td>144</td>
<td>MINI EPDS (12 or more) + EPDS (6 or more)</td>
<td>T1: 2–6 weeks, T2: 6–9 months after delivery</td>
<td>W2: 18.7%, MINI + met DSM-IV + EPDS = 12 W6=6.9%, M6= 11.8% M9=5.6%</td>
</tr>
<tr>
<td>Oman</td>
<td>F.I. Al Hinai &amp; Hinai, 2014</td>
<td>Prospective study</td>
<td>282</td>
<td>EPDS (10 or more), EPDS (13 or more)</td>
<td>T1 = 2 weeks, T2 = 8 weeks postpartum</td>
<td>10 or more T1= 15.2%, T2=13.5% 13 or more T1= 13.8% T2=10.6%</td>
</tr>
<tr>
<td>Qatar</td>
<td>Bener, Gerber &amp; Sheikh 2012</td>
<td>Cross-sectional</td>
<td>1659</td>
<td>DASS-21</td>
<td>6 months</td>
<td>18.6%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Alasoom &amp; Koura, 2014</td>
<td>Cross-sectional</td>
<td>450</td>
<td>EPDS (10–12) for moderate Depression (13 or more) for severe Depression</td>
<td>2–6 months</td>
<td>Moderate = 17.8% Severe = 8%</td>
</tr>
<tr>
<td></td>
<td>AlHarbi &amp; Abdulghani, 2014</td>
<td>Observational case control and retrospective</td>
<td>352</td>
<td>EPDS (10 or more)</td>
<td>8–12 weeks</td>
<td>33.2%</td>
</tr>
</tbody>
</table>

Note. EPDS = Edinburgh Postnatal Depression Scale, MINI = the Mini International Neuropsychiatric Interview, DASS-21 = 21 item of Depression Anxiety Stress Scales, W2 = 2 weeks postpartum, W6 = 6 weeks postpartum, M6 = 6 months postpartum, M9 = 9 months postpartum, M12 = 12 months postpartum, T1 = Time 1, T2 = Time 2
### Table 3.2 (Continued): Prevalence of PPD in Arab country studies

<table>
<thead>
<tr>
<th>Country</th>
<th>Author and year</th>
<th>Study design</th>
<th>Sample size</th>
<th>Outcome measure (cut-off scores)</th>
<th>Time frame postpartum</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>Amr, et al., 2012</td>
<td>Prospective, cohort</td>
<td>190</td>
<td>GHQ-12 (12 or more)</td>
<td>8 weeks</td>
<td>35.2%</td>
</tr>
<tr>
<td></td>
<td>Amr &amp; Balaha, 2010</td>
<td>Cross-sectional</td>
<td>190</td>
<td>MINI</td>
<td>2 months</td>
<td>CME= 6.3%, MDE=2.6%</td>
</tr>
<tr>
<td></td>
<td>Al-Johani, 2007</td>
<td>Cross-sectional</td>
<td>261</td>
<td>EPDS (12 or more)</td>
<td>2 months</td>
<td>22.2%</td>
</tr>
<tr>
<td>Tunisia</td>
<td>Masmoudi, et al., 2008</td>
<td>Prospective study, in two stages</td>
<td>213</td>
<td>EPDS (10 or more)</td>
<td>T1 = 1 week, T2 = 6–10 weeks</td>
<td>T1= 19.2%, T2= 13.2%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Hamdan &amp; Tamim, 2011</td>
<td>Cross-sectional</td>
<td>137</td>
<td>MINI</td>
<td>2 months</td>
<td>10.2%</td>
</tr>
<tr>
<td></td>
<td>Green, Broome &amp; Mirabella, 2006</td>
<td>Prospective, correlational</td>
<td>T1: 86, T2: 56</td>
<td>EPDS (13 or more)</td>
<td>T1: 3 months, T2: 6 months</td>
<td>T1: 22%, T2: 12.5</td>
</tr>
<tr>
<td></td>
<td>Abou-Saleh &amp; Ghubash, 1997</td>
<td>Cross-sectional</td>
<td>94</td>
<td>SRQ (6 or more)</td>
<td>D2: SRQ, D7: EPDS, W8: PSE, W30: PSE</td>
<td>SRQ: 24.5%, EPDS: 17.8%, PSE: 15.8%</td>
</tr>
</tbody>
</table>

Note. GHQ-12 = the 12-item General Health Questionnaire, EPDS = Edinburgh Postnatal Depression Scale, MINI = the Mini International Neuropsychiatric Interview, SRQ = the Self-Regulation Questionnaire, PSE = Present State Examination, CME = combined depressive episode, MDE = major depressive episode, D2 = 2 days postpartum, D7 = 7 days postpartum, W8 = 8 week postpartum, W30 = 30 week postpartum, T1 = Time 1, T2 = Time 2.
3.2.2.2 Diagnostic criteria

There are two prominent psychiatric diagnostic criteria in use within psychiatry: the DSM-IV-TR (APA, 2000) and the International Classification of Diseases, Tenth Edition (ICD-10) (WHO, 1992). Neither the DSM-IV-TR nor the ICD-10 recognises PPD as a separate diagnosis. Table 3.3 displays the diagnostic criteria used in DSM-IV-TR and ICD-10 to diagnose Depression. The diagnostic criteria are different and the main differences include:

- number of symptoms (DSM-IV-TR includes nine symptoms, while ICD-10 includes a tenth symptom, that is low self-confidence.)
- number of symptoms required to meet the diagnostic criteria for Major Depression (DSM-IV-TR requires five or more in which either depressed mood or loss of interest should be present, while ICD-10 requires four or more in which either depressed mood, loss of interest, low energy or increased fatigability should be present).

The difference between each diagnostic criterion has influenced reporting of the prevalence rates of Depression. Ravelli and colleagues (1999) argue that using different diagnostic classification systems on Depression can lead to different prevalence rates being reported. Ravelli and colleagues’ (2006) study tested the hypothesis that the prevalence rates based on ICD criteria are higher than those based on DSM criteria. The study confirmed that ICD criteria reported higher rates of Depression (20.3%) compared to DSM criteria (15.7%) and claimed the differences in reporting the rates is due to differences in the inclusion criteria. The study suggested that the differences between the two diagnostic systems will remain, since the new version of DSM still has not changed the symptoms requirements. In line with most international research, and in particular with research investigating the receiver operating characteristic (ROC) properties of the EPDS, DSM diagnostic criteria will be the system referred to throughout this thesis.
Table 3.3: DSM-IV-TR and ICD-10 diagnostic criteria for Depression

<table>
<thead>
<tr>
<th>Duration</th>
<th>DSM-IV-TR</th>
<th>ICD-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressive symptoms should last for at least two weeks</td>
<td>Depressive symptoms should last for at least two weeks</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specifiers</th>
<th>DSM-IV-TR</th>
<th>ICD-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postpartum onset specifier if it occurs within 4 weeks of delivery</td>
<td>Onset must be within 6 weeks of delivery</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of symptoms</th>
<th>DSM-IV-TR</th>
<th>ICD-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression: Five (or more) of the following symptoms and at least one of the symptoms is either depressed mood or loss of interest or pleasure</td>
<td>Mild: four symptoms in which two of the first three core symptoms (depressed mood, loss of interest, or reduction in energy) plus at least two of other symptoms</td>
<td></td>
</tr>
<tr>
<td>Minor Depression: two to four of the following symptoms and at least one of the symptoms is either depressed mood or loss of interest or pleasure</td>
<td>Moderate: 5–6 symptoms in which two of the first three core symptoms (depressed mood, loss of interest, or reduction in energy) plus at least three-four of other symptoms</td>
<td></td>
</tr>
<tr>
<td>Severe: seven symptoms in which two of the first three core symptoms (depressed mood, loss of interest, or reduction in energy) plus at least five of other symptoms</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>DSM-IV-TR</th>
<th>ICD-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) depressed mood</td>
<td>(1) depressed mood</td>
<td></td>
</tr>
<tr>
<td>(2) markedly diminished interest or pleasure</td>
<td>(2) loss of interest</td>
<td></td>
</tr>
<tr>
<td>(3) significant weight loss when not dieting or weight gain</td>
<td>(3) low energy or increased fatigability</td>
<td></td>
</tr>
<tr>
<td>(4) insomnia or hypersomnia</td>
<td>(4) inability to concentrate</td>
<td></td>
</tr>
<tr>
<td>(5) psychomotor agitation or retardation</td>
<td>(5) low self-confidence</td>
<td></td>
</tr>
<tr>
<td>(6) fatigue or loss of energy</td>
<td>(6) ideas of guilt and unworthiness</td>
<td></td>
</tr>
<tr>
<td>(7) feelings of worthlessness or excessive or inappropriate guilt</td>
<td>(7) change in psychomotor activity with agitation or retardation</td>
<td></td>
</tr>
<tr>
<td>(8) diminished ability to think or concentrate, or indecisiveness,</td>
<td>(8) ideas or acts of self-harm or suicide</td>
<td></td>
</tr>
<tr>
<td>(9) recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide. The symptoms must represent a change from previous functioning and should not be due to a general medical condition and not due to bereavement. (APA, 2000)</td>
<td>(9) disturbed sleep</td>
<td></td>
</tr>
<tr>
<td>(10) change in appetite.</td>
<td>(10) change in appetite. (WHO, 1992)</td>
<td></td>
</tr>
</tbody>
</table>
3.2.2.3 Time of onset

The onset of PPD – with a specifier coded with postpartum onset – occurs in the four weeks following delivery as diagnosed by DSM-IV-TR, which categorizes PPD as a form of general Depression. In 2013, the American Psychiatric Association released the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (APA, 2013) and the diagnosis of Major Depressive Disorder has changed the specifier to ‘with peripartum onset’ (which occurs during pregnancy or in the four weeks following delivery). The postpartum onset in ICD-10 starts within six weeks of childbirth.

The onset of PPD based on the diagnostic criteria has been questioned. Some authors consider the time frame too narrow and should be extended to one year to identify PPD (Miller, 2002; Thurgood, Avery, & Williamson, 2009). Beck & Driscoll (2006, p. 59) point out ‘the American Psychiatry Association (2000) defines the term postpartum as 4 weeks after the birth of a baby. Sadly, this onset descriptor is often too limiting for the time experience of the onset of this disorder.’ It has been suggested that the onset times for diagnostic criteria are largely adopted from Postpartum Psychosis data (Brockington, et al., 1981) and may not accurately reflect the clinical presentation of non-psychotic depressive illness in the perinatal period. O’Hara (2009, p. 1258) states that ‘Postpartum depression is a term applied to depressions that are prevalent during the postpartum period, which is increasingly viewed as up to 1 year after childbirth in research and clinical practice’. Kendell and colleagues (1987) argue that the most appropriate onset time for Postpartum Depression is in the first three months postpartum. Milgrom and colleagues (1999) suggest that the majority of PPD cases appear in the first three months postpartum, with a second peak detected at six to eight months postpartum. Similarly, prospective longitudinal studies have reported an increase in the prevalence rate of PPD around three months postpartum and there is also another prevalence peak around nine months postpartum (Gjerdingen, Crow, McGovern, Miner, & Center, 2011; Nott, 1987). Matthey (2004) states that in practice practitioners do not adhere to the time frames given by the DSM for the onset period within four weeks of delivery.

There is inconsistency in reporting the time frame to specify a postpartum onset within prevalence studies and most research and clinical practice has found that PPD can occur
within 12 months of childbirth. Such inconsistency has influenced how prevalence rates are estimated and therefore has implications for early recognition and effective treatment.

Several investigations recognise that it may be beneficial to identify women at risk early in the postpartum period (Reck, Stehle, Reinig, & Mundt, 2009; Watanabe, et al., 2008; Yamashita, Yoshida, Nakano, & Tashiro, 2000; Dennis, 2004). Dennis (2004) found assessing maternal mood using EPDS in the first week postpartum seems to be a significant predictor of PPD at week 4 (r=0.72, p<0.001) and week 8 (r=0.65, p<0.001) postpartum. The study recommends the screening of new mothers at week one in particular, as they are at risk in the immediate postpartum period, particularly for secondary preventive interventions. Given the time frame for PPD is varied up to one year and due to the limitation of doing this PhD study, the period of the first three months was chosen for this thesis.

### 3.2.2.4 Manifestation of depressive symptoms

In the cross-cultural literature, the manifestation of depressive symptoms has been noted to differ from culture to culture. Western women express their emotional symptoms overtly; on the other hand non-western women are unlikely to report emotional symptoms (Brown & Lumley, 2000; Kim & Buist, 2005; Parvin, Jones, & Hull, 2004; Rodrigues, Patel, Jaswal, & De Souza, 2003; Small, Lumley, & Yelland, 2003; Templeton, Velleman, Persaud, & Milner, 2003). Culture has been known to influence how women with PPD present to doctors (Kim & Buist, 2005; Klainin & Arthur, 2009; Kalibatseva & Leong, 2011) and the perceptions of PPD. In many cultures, somatisation is quite common (Kirmayer & Young, 1998). Somatisation or somatic symptoms refers to the experience of psychological complaints in the form of physical symptoms (Kapfhammer, 2006; Fisher, de Mello, & Izutsu, 2009). For example, Korean mothers present PPD symptoms of joint pain, headache and dizziness (Kim & Buist, 2005). Aches and pains were the most common symptoms noted in postpartum women in India (Rodrigues et al., 2003). Racy (1980) following his experiences of working as a psychiatrist with Saudi women, Racy noted the following forms of somatisation of emotional distress, suggesting that cultural differences in the way PPD symptoms are presented can have implications for diagnosis of the condition.
Much effort is required to break through the barriers of somatization and passivity in order to get any specific picture of that particular patient’s life ... when such effort is successful, one frequently is able to discover ... feelings of loneliness on separation from parents and siblings ... fatigue from prolonged child-rearing, and conflicts with in-laws. (Racy, 1980, p. 214)

Racy’s experience of working with Saudi women suggests the cultural expression of emotional distress in Arab people may prevent clinicians from recognising those who may be suffering from Depression.

Depressive and somatic symptoms are interconnected in Arab culture. The literature suggests that Arab people experience mental health differently to other cultures, and it is difficult to classify Depression in this group by using Western diagnostic criteria (Al-Krenawi & Graham, 2000). Arabic women rarely admit to symptoms related to suicidal thoughts (Matthey, Barnett, & Elliott, 1997). Suicidal ideation is condemned in Arab culture (Al-Krenawi & Graham, 2000) and is linked to religiosity (El-Isalm, 2008). Muslim-Arabs believe suicide is one of the greatest sins and therefore they do not report it even if they may have thoughts of or have made attempts at suicide (Lester, 2006). Matthey and colleagues (1997) found that Arabic women expressed fewer complaints of suicidal thoughts (5.1% vs 17.3%) and attempted suicide (4.1% vs 11.5%) than Anglo-Celtic women.

Kalibatseva and Leong (2011) suggest that somatic symptoms are presented when it is culturally unacceptable to express depressive symptoms. Somatic symptoms in Arabs are more acceptable as they are considered a more valid reason for seeking health services than psychiatric symptoms. The reason may be related to fear of embarrassment or shame for the individual or the family, and the stigma related to mental illness or mental health services (Al-Krenawi & Graham, 2000; Small et al., 2003; Sewilam et al., 2015). Mental illness in the Middle East is considered to be a sign of internal weakness and a cause of shame and disgrace, and it affects not only the individual but also the entire family (Sewilam et al., 2015).

The literature clearly indicates that Arab people experience and express mental distress differently to those socialised in a Western setting. Although studies show some of the
somatic symptoms of Depression are not included in the diagnostic criteria, there is still insufficient evidence to support these somatic symptoms being linked to PPD.

### 3.2.2.5 Validity of diagnostic symptoms in the perinatal period

Depressive symptoms (e.g. sleep disturbance, body fatigue or loss of appetite) can occur following childbirth, but can be difficult to distinguish from the normal range of postpartum related symptoms. Stowe and Nemeroff (1995) point out that there is a clear overlap between the normal result of childbirth and the symptoms of Major Depression, which supports the need to develop guidelines for early identification. Such symptoms include changes in sleep, energy, libido, appetite, body weight, and difficulty in concentration. Csatordai and colleagues (2009) question the validity of disturbed sleep as ‘indicative of the presence of a depressive symptom’ (p. 57). They rightly point out that ‘all new mothers have disturbed sleep’ (p. 57) and also note the same is likely to be true for symptoms such as fatigue, changes in libido, weight loss and concentration difficulties. Hence, as Csatordai and colleagues (2009) also point out, taking these symptoms at face value, without considering the context and other issues, and concluding the presence of these symptoms as indicative of PPD would be an incorrect diagnosis. It is therefore important to validate the diagnostic symptoms of Depression, as this issue raises concerns that Depression rating scales may mistake normal physiological changes in the postnatal period for somatic symptoms of Depression (Cox et al., 1987; Stowe & Nemeroff, 1995).

Kammerer and colleagues (2009) conducted a study of 892 women at six weeks postpartum to assess the appropriateness of using DSM-IV criteria to diagnose Depression in pregnancy and the postpartum period. All the DSM Depression symptoms were assessed and women who qualified against DSM-IV criteria for Depression were compared to those who did not. The study found loss of appetite to be an invalid symptom of Depression in the perinatal period, while other symptoms (e.g. lack of concentration) remained valid symptoms of Depression.

Associated symptoms of Depression change considerably between pregnancy and the postpartum period in non-depressed women, with change in appetite being the most noticeable symptom. Kammerer and colleagues (2009) argue that the DSM-IV is still
able to distinguish between depressed and non-depressed women in the perinatal period. However, according to Ji et al. (2011), the instruments used to detect Perinatal Depression do not accurately diagnose women due to the symptom overlap between the symptoms of Major Depression in the diagnostic criteria and normal perinatal symptoms. Their study aimed to assess the optimal cut-off scores for commonly used self-report measures such as the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) 17 items (HRSD17) and 21 items (HRSD21); the Beck Depression Inventory (BDI; Beck, Ward, & Mendelson, 1961) and the EPDS (Cox et al., 1987) during preconception, each trimester of pregnancy and in the postpartum period. They confirmed that the four measures used in the study are suitable to identify Major Depression in pregnancy and the postpartum period. Interestingly, the study found the optimal cut-off scores were higher at first visits, in particular for multiparous mothers, and there was more variability for the self-rated scales. The study also reported cut-off scores in pregnancy were the same or may be lower than preconception cut-off scores. The authors suggest that women incorporate their own opinions about the cause of symptoms during diagnostic interviews and completion of self-reported measures.

It is important to consider the participants’ attribution, particularly when reporting the optimum cut-off scores. Matthey and Ross-Hamid (2011) question the diagnostic validity by using the client-informed approach, which was adopted from Da Costa et al. (2009) and Ross, Evans, Sellers and Romach (2003). The studies of Da Costa and colleagues (2009) and Ross and colleagues (2003) excluded symptoms from the HRSD (Hamilton, 1960) when symptoms reported were due to the normal physical changes associated with pregnancy or the early postpartum period. Matthey and Ross-Hamid (2011) adopted the same approach and used attributional probing, asking the women when there was symptom endorsement for depressive disorders or Panic, Post-Traumatic Stress Disorder (PTSD), and Generalised Anxiety Disorders (GAD) whether they thought a symptom was related to the physical change of pregnancy, or mood related. Women were interviewed using the Mini-International Neuropsychiatric Interview (MINI) and then, if the women endorsed the symptoms, it was followed up by asking the attribution probing question, ‘Do you think that [symptom] is due to the physical changes of your pregnancy, or due to your mood or worries?’ Their response was coded as either due to ‘Pregnancy’, ‘Mood’, ‘Both’ or ‘Not sure’. In this study, Matthey and Ross-Hamid (2011) found the rates of Depression in pregnancy, using
DSM symptom criteria, were markedly over-estimated compared to DSM results after attributional probing. Major Depression dropped from 6.8% to 1.7%; Minor Depression dropped from 7.6% to 4.2% due to the natural occurrence of many of the symptoms as pregnancy-related symptoms. Rates of Anxiety disorders were also inflated when using DSM criteria (any Anxiety disorders: 16.9% to 15.3%), but to a lesser degree. Matthey and Ross-Hamid (2011) recommend the use of attributional probing in a postnatal sample, as the implications are that it would be important to consider in particular in studies that determine risk factors or clinical outcomes. In the light of the above discussion, it is clear that validating the diagnostic symptoms is crucial to understanding PPD and accurately reflecting the number of women who suffer with PPD. Yet, an extensive review of the literature found no studies have been undertaken in Saudi Arabia that used probed criteria as a way of validating the diagnostic symptoms. Moreover, no studies have been undertaken in relation to attributional probing. Thus, this PhD research addresses this gap: women in the research sample were administered with the MINI international neuropsychiatric interview (Sheehan et al., 1998) and if they endorsed core symptoms of Depression, GAD, Panic Disorders or PTSD, then the attributional questions were asked (see Chapter 4: methods section).
3.2.2.6 Factors contributing to PPD

Potential risk factors have been investigated for PPD. These factors are drawn from quantitative and qualitative studies and replicated in different population samples using different methodological approaches.

**Biological factors**

Changes in hormonal levels are believed to contribute to the development of PPD; however, studies examining hormonal changes have not been conclusive. The postpartum period is associated with hormonal changes, showing a significant drop of hormones after childbirth (Abou-Saleh, Ghubash, Karim, Krymski, & Bhai, 1998; Crowe, 1991; Josefsson, 2003). Sudden and substantial fluctuations in oestrogen and progesterone levels during pregnancy and following childbirth have been linked to Baby Blues (Dennis, 2004; Cox & Holden, 2003). Although certain studies have reported enormous changes in hormonal levels (oestrogen, progesterone, cortisone, β endorphin, oxytocin and prolactin) (Gordon, Borison, & Diamond, 1980; Harris et al., 1994; Smith et al., 1990), the development of PPD has been related to a sensitivity to the mood-destabilizing effects of withdrawal from gonadal steroids (Glover, 1992; Bloch et al., 2005) or the interaction of hormonal factors with other factors such as stress or a past history of Depression (Unterman, Posner, & Williams, 1990; Glover, 1992; Williamson & McCutcheon, 2004). Bloch and colleagues (2000) report that there was a significant increase in depressive symptoms in women with a history of PPD but not in women without a history of PPD after administering hormones and rapidly withdrawing them. As noted in systematic reviews, studies have shown the relationship between hormonal changes and development of PPD as inconclusive (Bloch, Daly, & Rubinow, 2003; Hendrick, Altshuler, & Suri, 1998).

**Obstetric factors**

None of the studies to date report a clear, direct association between obstetric factors such as pregnancy-related complications (e.g. pre-eclampsia) or delivery-related complications (e.g. caesarean section or instrumental delivery) and the development of PPD. For example, several studies have shown no association between mode of delivery and PPD (Agoub et al., 2005; Boyce & Hicky, 2005; Gaillard, Le Strat, Mandelbrot, Keïta, & Dubertret, 2014; Kim, Hur, Kim, Oh, & Shin, 2008; Mchichi Alami et al.,
2006), while others reported significant association (Chaaya et al., 2002; Koo, Lynch, & Cooper, 2003; Koutra et al., 2014; Lee, Liu, Kuo, & Lee, 2011). Meta-analysis of risk factors conducted by O’Hara and Swain (1996) found a weak association between obstetric factors and the development of PPD. In Australia, Johnstone and colleagues (2001) conducted a prospective study of 490 women to examine the relationship between PPD and different obstetric factors including obstetric history; complications of pregnancy, labour and delivery; and infant details. They found none of the obstetric factors were significantly associated with PPD.

In Saudi Arabia, approximately 22% of women deliver via caesarean section (MoH, 2013), and Makkah city has the highest rate (39%) reported compared to the other cities. Alharbi and Abdulghani (2014) conducted a retrospective study on 352 Saudi women in Riyadh city, which aimed to report the risk factors of PPD in the Saudi population. They examined obstetric factors such as mode of delivery and parity. In addition to this, they also looked into the effect of sex of the child. They found no significant association between PPD and caesarean delivery (34.9%, OR 1.10, 95% CI, 0.66–1.85), women who had more than four children (35.3%, OR 1.20, 95% CI, 0.69–2.07) or if the baby was female (33.5%, OR 1.03, 95% CI, 0.66–1.60).

Although most studies report only a minimal effect of obstetric factors on PPD, Koo and colleagues’ (2003) retrospective comparative cohort study of 250 Malaysian women showed that obstetric factors significantly impacted on the development of PPD. Women in their study who had had an emergency delivery had about twice the risk of developing PPD compared to women who had had a non-emergency delivery.

Overall, there is little evidence of obstetric factors being a cause of PPD, but such factors may be a notable contributor. Obstetric complications result in pain, restricted movement, feelings of loss of control or disappointment, and these experiences may contribute to the development of PPD (Chien, Tai, Ko, Huang, & Sheu, 2006).

**Psychosocial factors**

Psychological factors may be an important contributor to PPD (Brockington, 1996; Cox & Holden, 2003). A past history of mental illness, social support, marital dissatisfaction and stressful life events have been documented as contributing factors to PPD (O’Hara & Swain, 1996; Stewart et al., 2003).
Past history of mental illness

A number of studies reported an association between a past history of mental illness and PPD (O’Hara & Swain, 1996; Norhayati et al., 2015). For example, Boyce and Hickey (2005) found an association between PPD and a previous history of psychiatric illness (OR=5.40, 95% CI, 2.15–13.52). Räisänen and colleagues (2013) conducted a retrospective population-based case-control study of 511,422 women in Finland to examine the prevalence of PPD and the risk factors associated with it. They confirmed that a history of Depression before (OR=3.14, 95% CI, 2.72–3.64) and/or during pregnancy (OR=139.35, 95% CI, 120.40–161.28) was the most important risk factor for PPD. This result was consistent with Beck, C.T’s (2001) findings.

Women who have a history of Antenatal Depression are also more likely to develop PPD. For example, Milgrom, et al. (2008) conducted a large prospective cohort study to examine antenatal risk factors for PPD in 40,333 women across Australia. They obtained information from Beyondblue (National Postnatal Depression Program), a large prospective cohort study. Perinatal mental health was measured antenatally and depressive symptoms were measured. EPDS (cut-off score 13 or more) and psychosocial risk factor questionnaires were administered to pregnant women to screen for symptoms of PPD. They reported 8.9% women had Antenatal Depression and 7.5% had PPD. The authors reported Antenatal Depression, together with a history of Depression, was the strongest independent antenatal predictor of PPD. The authors noted that they did not use clinical interviews to measure PPD, acknowledging this as a limitation and noting that this could affect the accuracy of the PPD rates and association. However, the strength of the study was the use of a large sample size.

Social support

Receiving social support through spouse, friends and relatives can reduce the development of Depression. Support networks provide shared values, norms and ideologies (Oakely, 1992), which can arguably foster adequate social support and care for the mother that can help in preventing (Brugha et al., 1998) and decreasing PPD (Stewart et al., 2003).

Social support has many components, including practical support (e.g. baby care, housework) and emotional support (perception that one is cared for and loved) (Dennis
Cultural factors can determine social support expectations and the effects this has on the development of PPD. This was demonstrated by Stuchbery and colleagues (1998) in their Australian study to identify the components of social support (defined as support from partner, mothers or from others) related to the development of PPD in different cultural groups of mothers (Vietnamese, Arabic and Anglo-Celtic mothers). They assessed the social support needs of mothers in the postpartum period and the relation of the needs to PPD. The study found that for Anglo-Celtic mothers, low postnatal mood was related to a perceived need for more emotional support from their partners and mothers. Vietnamese mothers who had low postnatal mood reported poor quality of relationships with their partners and a perceived need for more practical support from them. Arabic mothers who had low postnatal mood reported a perceived need for more emotional support from their partners and also reported better quality relationships with their mothers than the other two groups. The authors concluded that social support, which is mostly related to cultural factors, influences the development of PPD.

Negron, Martin, Almog, Balbierz and Howell (2013) conducted a qualitative study to explore postpartum women’s views and experiences with social support following childbirth. Four focus groups were conducted with an ethnically diverse sample of women at 6–12 months postpartum. The study suggested that social support is an essential component for the physical and emotional wellbeing of mothers following childbirth. Women defined emotional support as being able to talk to someone about what they were going through, receiving words of encouragement, and pampering. Partners were identified as the primary resource for emotional support, but some women also sought girlfriends, cousins, godmothers, and other mothers from mother support groups, to talk about their feelings and experiences.

Low or inadequate levels of social support have been found to be a strong predictor of PPD (O’Hara & Swain, 1996; Howell, Mora, & Leventhal, 2006). Seguin and colleagues (1999) examined the correlation between social support and development of PPD and found a moderate association between inadequate social support and PPD ($R^2=0.67$, $p=0.03$). Similarly, Xie, He, Koszycki, Walker and Wen (2009) conducted a prospective study of 534 pregnant women in China to assess the relationship between prenatal and postnatal social support and PPD. They found that 19.3% of women had PPD and women with low prenatal and postnatal social support had higher rates of PPD.
For postnatal support, they reported PPD was 44% in the lowest quartile versus 5% in the highest quartile.

The primary source of support for women after childbirth is commonly considered to be the spouse or intimate partner (Hopkins & Campbell 2008; Gremigni, Mariani, Marracino, Tranquilli, & Turi, 2011). Therefore, support from an intimate partner has been found to be a protective factor for PPD (Beck, 2001; Dennis & Ross, 2006; Dennis & Letourneau, 2007). Women who received good support from partners were reported as being more likely to experience an easy transition to motherhood and to have less stress (Humenick & Howell, 2003). Aydin and colleagues (2005) conducted a study to identify factors associated with Depression and to estimate prevalence of Depression among women in the postnatal first year in Eastern Turkey. Women (n=728) in their postnatal first year completed a structured questionnaire and the EPDS (Cox et al., 1987) (cut-off score 13 or more). The prevalence of PPD reported was 34.6%. Lack of husband’s support was found to be the factor most closely associated with Depression in women in Turkey.

Marital dissatisfaction

Poor marital satisfaction has been also recognised as a potential risk factor for PPD (Abbott & Williams, 2006; Lee & Chung, 2007). A recent meta-analysis of 203 studies showed a strong relationship between poor marital relationships and development of PPD in both developed and developing countries (Norhayati et al., 2015). Dennis and Ross (2006) carried out a longitudinal study which aimed to examine the influence of maternal perceptions of conflict and relationship and postpartum-specific support from the partner on the development of PPD at eight weeks postpartum. Women (n=394) completed the EPDS (Cox et al., 1987) (cut-off score 10 or more), the Social Provisions Checklist (SPC; Davis, Morris, & Kraus, 1998), the Postpartum Partner Support Scale (PPSS; developed for the study), and a shortened version of the Quality of Relationships Inventory (Pierce, Sarason, & Sarason, 1991). Women with depressive symptoms at eight weeks postpartum had overall significantly higher levels of conflict than those who were not depressed (t (394) = -3.44, p=0.001). Women with depressive symptoms at eight weeks postpartum also had overall significantly lower levels of postpartum-specific support than non-depressive women (t (394) = -3.33, p=0.001). The authors concluded that lack of partner support and conflict are associated with symptoms of
PPD. The new transition to parenthood has also been identified as a potential factor in increased marital conflict and decreased marital satisfaction (Lawrence, Rothman, Cobb, Rothman, & Bradbury, 2008).

Stressful life events

The occurrence of stressful events in the prenatal period often leads to the onset of PPD (Brown & Harris, 1978). Herrick (2000) carried out a survey (from 1997 to 1998) to examine the impact of both the amount of stress and individual stressors on the risk of PPD. The information obtained from the North Carolina Pregnancy Risk Assessment Monitoring System (PRAMS), which was an ongoing mail/telephone survey of North Carolina–resident mothers who were contacted two to five months after delivery, was used in this study. The assessment of Depression was measured on a five-point scale, ranging from ‘not depressed at all’ to ‘very depressed and had to get help’. Mothers who reported being either ‘very depressed’ or in need of help for their Depression were included in the PPD group; all others were included in the non-depressed group. The study found 7.5% of mothers reported that they had severe PPD and six or more potentially stressful life events during the 12 months before delivery, and this proved to be a strong independent risk factor for PPD. Similarly, Boyce and Hickey (2005) conducted a prospective longitudinal cohort design to identify psychosocial risk factors to PPD. Four hundred and twenty-five women were assessed at two days, and six, 12, 18 and 24 weeks postpartum and administered the EPDS (Cox et al., 1987) (cut-off score 13 or more) and the Structured Clinical Interview for DSM-III-R (SCID; Spitzer, Williams, Gibbon, & First, 1992). The authors reported PPD was significantly associated with having experienced one or more stressful life events (OR=3.14, 95% CI, 1.35–7.30).

Socio-cultural factors

It has been suggested that PPD is a culture-bound syndrome of Western societies (Bina, 2008). PPD has been examined in many cultures and a number of socio-cultural factors have been identified as being linked to PPD, including sex preference and traditional cultural rituals and customs.
Sex preference

Sex preference is a prevalent phenomenon and childbearing behaviour and family size is influenced by the gender of the baby (Marleau & Saucier, 2002). A cross-sectional study conducted on 6,627 Iranian women at two to 12 months postpartum reported that undesired sex of the baby was associated with the development of PPD (Kheirabadi et al., 2009). Lee and colleagues (2000) examined psychosocial risk factors for postpartum Depression among 220 Hong Kong Chinese women. They found spouse disappointment about the sex of the infant is more likely to be associated with PPD.

Preference for a son is commonly believed to be prevalent in many developing countries – including East and South Asia, Middle Eastern countries (including Saudi Arabia) and parts of Africa, as well as Latin America – but differences are noted from one country to another (Cleland, Verrall, & Vaessen, 1983; Arnold, Choe, & Roy, 1998; Winkvist & Akhtar, 2000). The birth of a boy is a greater source of joy and happiness than that of a girl; traditionally in Arab countries, a woman gains status when she gives birth to a male baby. Whereas, the birth of a female baby is usually not celebrated as much, and women who give birth to a baby girl often continue to have more children until they have a boy. Williamson (1976) claimed that son preference is a pattern consistent with the cross-cultural predominance of patriarchy. Saleh and colleagues (2013) suggest that the birth of a girl in Egypt is associated with PPD. These findings suggest that, in some cultures, the birth of a girl may be considered as a potential risk factor for PPD. On the other hand, the birth of a boy is considered as a protective factor.

Girl preference, however, has been found to be prevalent in the Czech Republic, Lithuania, Denmark, Sweden and Portugal (Jacobsen, Moller, & Engholm, 1999; Hank & Kohler, 2000) and therefore in these countries, having a female child may positively impact the mother’s mental wellbeing. A cross-sectional study was conducted by De Tychey and colleagues (2008) to evaluate if the sex of the child influences the quality of life of young French mothers. The study revealed that women who give birth to a baby boy may be at increased risk of developing severe PPD.

Traditional cultural rituals and customs

Culture plays an important role in the way a woman perceives and prepares for the birthing experience. Each culture has its own rituals, beliefs and practices related to
childbirth. Many countries have traditional customs related to postpartum rituals that may reduce the incidence of PPD. Most of these rituals are linked to religion. These customs or rituals help women to regain their strength physically and emotionally, and to recuperate in the eight-week postpartum period. Stern and Kruckman (1983) conducted a review of the anthropological literature on childbirth and found little evidence for PPD. They suggested that the lack of postpartum rituals in Western society might be a cause of PPD. They argue that cultures which have a low prevalence of PPD all have rituals that provide support and care for mothers. These cultures, although quite different from each other, all share protective social structuring of the postpartum period, including (1) cultural patterning of a distinct postpartum period; (2) protective measures designed to reflect the vulnerability of the new mother; (3) social seclusion; (4) mandated rest; (5) assistance in tasks from relatives and/or midwife; (6) social recognition of new social status through rituals, gifts or other means.

Most of the traditional customs might be considered as protective factors against the development of PPD, however; there is no conclusive evidence to support the view that culture may be a protective factor for developing PPD. Some studies discuss the cultural tradition of having new mothers rest for a month following the birth of the baby, and during the postpartum period extended families provide practical and emotional support (Bina, 2008; Dennis et al., 2007; Fadzil, Shamsuddin, & Wan Puteh, 2015; Klainin & Arthur, 2009; Kim-Godwin, 2003). This tradition has been reported in Taiwan, for example. Heh and colleagues (2004) examined the association between depressive symptoms and social support in Taiwanese women who followed the ‘doing the month’ practices. Women were administered the Postpartum Social Support Questionnaire (PSSQ; Hopkins, Campbell, & Marcus, 1987) and EPDS (Cox et al., 1987) to assess the degree of social support and to screen PPD, respectively. The results indicated 21% of the women had PPD, and social support was correlated negatively with PPD (r=-0.51, p=0.001). They concluded that the ritual of ‘doing the month’ may provide valuable social support for postpartum women. This support may be considered as a protective factor for Partum Distress. However, Liu, Maloni and Petrini (2014) in their study of ‘doing the month’ among Chinese women question the health benefits of ‘doing the month’ practices. The study found the limited mobility during ‘doing the month’ has negative physical and psychological health implications for mothers.
In Arab (Muslim) countries, 40 days of mandatory rest is practiced. During the 40-day period, family members provide the mother with practical and emotional support to restore balance to the body and to provide a well-balanced diet. The mother benefits from activity restrictions, which allow her to take care of the baby (Kim-Godwin, 2003; Nahas & Amasheh, 1999).

Demographic factors

Several studies have examined the relationship between demographic variables and the development of PPD; however, evidence is inconclusive. Several studies have reported younger maternal age as a risk factor for PPD (Boyce & Hickey, 2005; Kozinszky et al., 2011). Sword and colleagues (2011) conducted a prospective cohort study of 2,560 women who were 16 or more years of age and delivered singleton, live infants at term. Women were assessed for PPD at six weeks following hospital discharge using the EPDS (Cox et al., 1987) (cut-off score 12 or more). They reported young maternal age (OR=5.27; 95% CI, 2.73–10.15) as a predictor variable for PPD. However, other studies have shown no association between maternal age and PPD (Mchichi Alami et al., 2006; Goker et al., 2012; Ozdemir, Ergin, Selimoglu, & Bilgel, 2005).

Studies have reported the level of education is not linked to the development of PPD. For instance, Wickberg and Hwang (1997) found no association between women’s educational backgrounds and PPD. O’Hara and Swain (1996) and Green and colleagues (2007) also support Wickberg and Hwang’s (1997) findings.

3.2.2.7 The impact of PPD

PPD can have a huge impact upon not only the untreated mothers but also on the baby and the family (O’Hara & Swain, 1996; Stowe, Hostetter, & Newport, 2005; Wisner, Parry & Piontek, 2002). The most serious adverse effect of PPD is maternal suicide. Depressed mothers are susceptible to other psychiatric disorders including Anxiety and personality disorders (Logsdon, Wisner, & Pinto-Foltz, 2006; Miller et al., 2006).

PPD can also have a negative influence on the mother and child relationship. Studies have found depressed mothers are not attached to their babies (e.g. Paulson, Dauber, & Leiferman, 2006; Righetti-Veltema, Bousquet, & Manzano, 2003) and have feeding
problems (Dennis & McQueen, 2009; Stuebe, Grewen, & Meltzer-Brody, 2013). Children of depressed mothers are reported to have emotional difficulties and older children are prone to mental disorders (Gavin, Meltzer-Brody, Glover, & Gaynes, 2015).

Mothers with Depression are likely to negatively affect their partners. Partners of depressed mothers are at risk of developing Depression (Areias, Kumar, Barros, & Figueiredo, 1996). Goodman (2004) found the rate of Depression in men ranged between 24% and 50% of those whose partners were suffering from PPD. It is therefore suggested that PPD can lead to poor martial relationships and increase the risk of martial dissatisfaction and divorce (Beck, 1996).

3.2.3 Postpartum Anxiety Disorders

Anxiety disorders in the postnatal period have received less attention than depressive disorders. Shear and Oommen (1994) state that the ‘postpartum period appears to represent the period of increased risk of onset or worsening of Anxiety disorders’ (p. 693). Recent studies have identified postpartum Anxiety disorders as prevalent during the postpartum period (Matthey, 2008; Stuart, Couser, Schilder, O’Hara, & Gorman, 1998; Wenzel, Gorman, O’Hara, & Stuart, 2001; Wenzel, Haugen, Jackson, & Robinson, 2003). Matthey, Bryanne, Howie and Kavanagh (2003) found that 16.2% of mothers were diagnosed with a pure Anxiety disorder (Phobias, Panic, Acute Adjustment Disorder with Anxiety) at six weeks postpartum. Reck and colleagues (2008) reported the prevalence of postpartum Anxiety was 11.1% at three months postpartum. Both findings were reported based on DSM diagnostic criteria. Postpartum Anxiety disorders appear to be a common phenomenon in childbearing women and often co-morbid with PPD (Kessler, Keller, & Wittchen, 2001; Paul, Downs, Schaef er, Beiler, & Weisman, 2013), but often an area that is neglected and missed in the perinatal period. Anxiety disorders include Generalised Anxiety Disorder (GAD), Social Phobia (also known as Social Anxiety Disorder), Panic Disorder (with and without Agoraphobia), Obsessive-Compulsive Disorder (OCD), and Post-Traumatic Stress Disorder (PTSD). In the new version of DSM-5 (APA, 2013), OCD and PTSD have been not included in the Anxiety disorders, and have been placed in separate
chapters. However, OCD and PTSD have been included here, as this thesis refers to the system of DSM-IV-TR.

3.2.3.1 Generalised Anxiety Disorder (GAD)

DSM-IV-TR defines GAD as a chronic condition characterized by excessive Anxiety and worry occurring more days than not for at least six months, with difficulty controlling the worry. The Anxiety and worry are associated with three (or more) of the list of six symptoms (see Table 3.4). According to the definition of DSM-IV-TR criteria for GAD, the symptoms should be present at least six months before the diagnosis can be confirmed. The diagnostic criteria for GAD in the perinatal period are questionable if the six-month period is to be met in the pregnancy or postpartum period (Kessler et al., 2005). Therefore, Acute Adjustment Disorder with Anxiety (AADA) has been suggested as the appropriate differential diagnosis during the perinatal period (Ross, McLean, & Psych, 2006; Reck et al., 2008). Women who meet the criteria for GAD in the postpartum period with minimum symptom duration of 2 weeks within the last 4 weeks are diagnosed as having AADA (Reck et al., 2008).

Table 3.4: DSM IV-TR criteria for GAD

| A. Excessive anxiety about a number of events or activities, occurring more days than not, for at least six months. |
| B. The person finds it difficult to control the worry. |
| C. The anxiety and worry are associated with at least three of the following six symptoms (with at least some symptoms present for more days than not, for the past six months): |
| (1) Restlessness or feeling keyed up or on edge. |
| (2) Being easily fatigued. |
| (3) Difficulty concentrating or mind going blank. |
| (4) Irritability. |
| (5) Muscle tension. |
| (6) Sleep disturbance. |

The 12-month prevalence rate of GAD in the general population is reported as 0.9% in adults; the rates are much higher in developed countries (2.1–3.6%) compared to developing countries (0.4–1.4%) (Lewis-Fernández et al., 2010). Women are reported to experience GAD at twice the rate of men (Seedat et al., 2009; Vesga-Lopez et al., 2008). The prevalence of GAD in the postpartum period ranges from 2.6% to 8.2%, suggesting GAD is more prevalent in women during the postpartum period than in the general population. It is likely that family issues, including child wellbeing, are a
common source of excessive worrying in persons with GAD. A summary of studies that have examined the prevalence of GAD in the postpartum period is presented in Table 3.8. The prevalence rate varies between the studies. The inconsistencies could be explained by the use of different assessment times, sample sizes, and different populations.

### 3.2.3.2 Panic Disorder

Panic Disorder is defined as recurrent, unpredictable panic attacks associated with persistent concern or worry about future panic attacks or their consequences. Symptoms (four or more) occur, including palpitations, sweating, shaking, shortness of breath, feelings of choking, chest pain or discomfort, nausea or abdominal distress, feeling dizzy, chills or heat sensations, paresthesias (an abnormal sensation), derealization (feelings of unreality) or depersonalization (being detached from oneself), fear of losing control, or fear of dying (APA, 2000). It usually occurs suddenly and peaks within 10 to 15 minutes (see Table 3.5). In the new version of DSM-5, Panic Disorder is no longer linked to Agoraphobia; however, the symptoms criteria remain unchanged (APA, 2013).

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<thead>
<tr>
<th>Table 3.5: DSM-IV-TR criteria for Panic Disorder</th>
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<tbody>
<tr>
<td>Requiring unexpected panic attacks.</td>
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<tr>
<td>At least one of the attacks has been followed by at least one month of one or more of the following:</td>
</tr>
<tr>
<td>• Persistent concern about having additional panic attacks.</td>
</tr>
<tr>
<td>• Worry about the implications of the attack or its consequences.</td>
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<tr>
<td>• A significant change in behavior related to the attacks.</td>
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<tr>
<td>• Presence or absence of agoraphobia.</td>
</tr>
<tr>
<td>The panic attacks are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism).</td>
</tr>
<tr>
<td>The panic attacks are not better accounted for by another mental disorder.</td>
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</table>

Panic Disorder occurs across the ages (Albano & Chorpita, 1995; Sheikh & Salzman, 1995). The common age for onset of Panic Disorder is between late adolescence and the mid-thirties (Macaulay & Kleinknecht, 1989). Research has shown that the symptoms of Panic Disorder in the postpartum period are similar to those symptoms during other periods (Wenzel et al., 2001; Guler et al., 2008). Additionally, Beck, C.T. (1996) reports that women with postpartum Panic Disorder experience hysterical crying, disorientation and headaches. Beck (1998) conducted a qualitative study on mothers who experienced
Panic Disorder during the postpartum period. As a result of the distressing physical symptoms of Panic Disorder, women feel out of control in their lives. Women described their cognitive function as decreased and struggled to maintain their composure during the panic attacks. They also experienced low self-esteem, feeling disappointed about themselves, not wanting to disappoint their families and being afraid of the future repercussions of these symptoms for themselves and their families. Sholomskas and colleagues (1993) found the onset of Panic Disorder in the first postpartum period is not a coincidental event and some women revealed that panic symptoms had recurred or were exacerbated during the postpartum period. Studies have consistently shown the postpartum period as contributing to a worsening of panic symptoms in women with pre-existing panic disorder (Metz, Sichel & Goff, 1988) and in women with no past history of psychiatric disorders (Sholomskas et al., 1993). Studies have demonstrated that women with Panic Disorder reported worse symptoms in the postpartum period (Cohen et al., 1996; Bandelow, Baldwin, Dolberg, Andersen, & Stein, 2006). Studies on the prevalence of Panic Disorders in the postpartum period have received much attention (Table 3.8). The prevalence rates range from 0.5 to 2.9%.

3.2.3.3 Agoraphobia

Agoraphobia refers to a noticeable fear or Anxiety relating to two (or more) of the following five situations: 1) using public transportation, 2) being in open spaces, 3) being in enclosed places, 4) standing in line or being in a crowd, or 5) being outside of the home alone and where it might be difficult or embarrassing to escape quickly (see Table 3.6) (APA, 2000). The symptoms include palpations, chest pain, nausea or difficulty breathing. The DSM-5 separates Agoraphobia from Panic Disorder with the statement ‘Agoraphobia without History of Panic Disorder’. Patients may therefore be diagnosed Agoraphobia without the related diagnosis of Panic Disorder.

Table 3.6: DSM IV-TR criteria for Agoraphobia

<table>
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<tr>
<th>Fear of being in places or situations from which escape might be difficult (or embarrassing) or in which help might not be available in the event of having unexpected panic-like symptoms.</th>
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<tbody>
<tr>
<td>The situations are typically avoided or require the presence of a companion.</td>
</tr>
<tr>
<td>The condition is not better accounted for by another mental disorder.</td>
</tr>
</tbody>
</table>
Studies report that 1.7% of adults suffer from Agoraphobia (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012; Wittchen, Jacobi, Rehm, Gustavsson, & Svensson, 2011) and it is more prevalent in women than men (Wittchen, Gloster, Beesdo-Baum, Fava, & Craske, 2010). However, there is little evidence of the prevalence of Agoraphobia in the postpartum period. Watson, Elliott, Rugg and Brough (1984) conducted a study on 128 women during pregnancy and the first postnatal year using psychiatric interviews. They found approximately 16% of women at six weeks postpartum had postnatal affective disorder and 2.3% had Agoraphobia. Wenzel and colleagues (2005) carried out a study of 147 mothers in the community to examine anxiety symptoms and disorders at eight weeks postpartum. They found that the rate of Agoraphobia was 0%. Amr and Balaha (2010) conducted a cross-sectional study to determine the prevalence of postpartum psychiatric disorders in young mothers using a brief structured psychiatric interview, the Mini International Neuropsychiatric Interview (MINI) in Saudi women at eight weeks postpartum. They reported the prevalence of psychiatric disorders was 22.6%, of which Agoraphobia accounted for 1.1%. With regard to prevalence rates, studies have been varied to demonstrate the rates of Agoraphobia without Panic Disorder or Agoraphobia with Panic Disorders across a range of cultures in the general population. This could be the reason why Agoraphobia has received much less attention in the postpartum period.

3.2.3.4 Social Phobia

Social Phobia is defined as extreme fear of embarrassment or negative evaluation, which leads to avoidance of and distress in social activities (Table 3.7). Individuals with Social Phobia must meet five criteria: 1) persistent fear of interactions with or being evaluated by others that is excessive, 2) exposure to the feared situation almost induced anxiety, 3) individual admits that the fear is excessive, 4) the fear situation is avoided with intense distress, 5) the individual has considerable distress about having the fear (APA, 2000). The new version of DSM-5 replaced the term ‘Social Phobia’ with ‘Social Anxiety Disorder’. The criterion that individuals over 18 years old must recognise their fear and Anxiety are excessive or unreasonable has been excluded. So, the duration of Social Phobia in DSM-5 is required for all ages.
The diagnosis is made if symptoms of Social Phobia persist for at least a few months and cause clinically significant Social Phobia. Therefore, in diagnosing postpartum Social Phobia, clinicians and researchers find it difficult to confirm the diagnosis as the onset could occur a few weeks after childbirth.

Table 3.7: DSM-IV-TR criteria for Social Phobia

A fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others and feels he or she will act in an embarrassing manner.
Exposure to the feared social situation provokes anxiety, which can take the form of a panic attack.
The person recognizes that the fear is excessive or unreasonable.
The feared social or performance situations are avoided or are endured with distress.
The avoidance, anxious anticipation, or distress in the feared situation interferes significantly with the person’s normal routine, occupational functioning, or social activities or relationships.
The condition is not better accounted for by another mental disorder, substance use, or general medical condition.
If a general medical condition or another mental disorder is present, the fear is unrelated to it.
The phobia may be considered generalized if fears include most social situations.

Literature on Social Phobia with postpartum onset has been surprisingly neglected until recently. Few studies have assessed the prevalence rate of Social Phobia in the postpartum period. The prevalence ranges from 0.2–1.9% in the general population (Lewis-Fernandez et al., 2010). Evidence has shown that Social Phobia is more prevalent in the postpartum period. Wenzel and colleagues (2005) report that 4.1% of women met the DSM criteria of Social Phobia in a sample of 147 community mothers, and 15% had sub-syndromal symptoms at eight weeks postpartum. It is important to note that the authors found the majority of women (67%) with Social Phobia reported the onset of their symptoms after childbirth. In the follow-up assessment, the rate dropped to 2.3% at six months postpartum and to 1.7% at 12 months postpartum. The reduction in prevalence rates over time noted by Wenzel and colleagues (2005) suggests the symptoms of postpartum Social Phobia are more likely to be transient and therefore may resolve during the first year after childbirth. However, the authors did not mention if women with Social Phobia had sought help or declined to be part of the study. If that was the case, then these factors could account for the low prevalence rate in the follow-up assessment.

Amr and Balaha (2010) report a similar rate of Social Phobia at eight weeks postpartum (3.2%) in a sample of 190 Saudi women. However, Rowe and colleagues (2008) found
a higher rate of Social Phobia (6.5%) at 10.3 weeks postpartum in 138 women who were in residential early parenting services. Another study conducted by Navarro et al. (2008) found a low prevalence rate (0.2%) compared to the previously mentioned studies. The authors acknowledged the rates of some psychiatric disorders may be underestimated. Therefore, the rate of Social Phobia with postpartum onset ranges from 0.2% to 6.5% at six to ten weeks postpartum. A summary of studies examining the prevalence rate is shown in Table 3.8.

Significant overlap between Social Phobia and Major Depressive Disorder has been documented. Three studies reported that approximately half of the women with Social Phobia also met the diagnostic criteria of Major Depression (Lecrubier & Weiller, 1997; Pini et al., 1997; Wenzel et al., 2005).
### Table 3.8: A summary of Anxiety disorders, including GAD, Panic Disorder and Social Phobia in the postpartum period

<table>
<thead>
<tr>
<th>Country</th>
<th>Study</th>
<th>Design</th>
<th>Sample size</th>
<th>Assessment time</th>
<th>Measures</th>
<th>Prevalence</th>
<th>Measures</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generalised Anxiety Disorders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Amr et al., 2010</td>
<td>Cross sectional study</td>
<td>190</td>
<td>8 weeks</td>
<td>MINI</td>
<td>2.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>Rowe et al., 2008</td>
<td>Cross sectional study</td>
<td>138</td>
<td>10.3 weeks</td>
<td>SCID</td>
<td>10.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>Miller et al., 2006</td>
<td>Cross sectional study</td>
<td>325</td>
<td>6 weeks – 6 months</td>
<td>DASS-21</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>England</td>
<td>Heron et al., 2004</td>
<td>Prospective longitudinal study</td>
<td>8323</td>
<td>8 weeks and 8 months</td>
<td>CCEI</td>
<td>8 weeks: 4.3%</td>
<td>8 months: 4.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>USA</td>
<td>Wenzel et al., 2003</td>
<td>Cross sectional study</td>
<td>68</td>
<td>8 weeks</td>
<td>SCID</td>
<td>4.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>Wenzel et al., 2005</td>
<td>Cross sectional study</td>
<td>147</td>
<td>8 weeks</td>
<td>SCID</td>
<td>8.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>Ballard, Davis, Cullen, Mohan, &amp; Dean, 1994</td>
<td></td>
<td>148</td>
<td>6 months</td>
<td>Psychiatric Assessment Scale (RDC diagnosis)</td>
<td>6.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Panic Disorder</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Amr et al., 2010</td>
<td>Cross sectional study</td>
<td>190</td>
<td>8 weeks</td>
<td>MINI</td>
<td>2.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>Navarro et al., 2008</td>
<td>Two-phase cross sectional study</td>
<td>428</td>
<td>6 weeks</td>
<td>SCID</td>
<td>0.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>Rowe et al., 2008</td>
<td>Cross sectional study</td>
<td>138</td>
<td>10.3 weeks</td>
<td>SCID</td>
<td>2.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>Wenzel et al., 2005</td>
<td>Longitudinal study</td>
<td>147</td>
<td>8 weeks</td>
<td>SCID</td>
<td>1.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>Matthey et al., 2003</td>
<td>Longitudinal study</td>
<td>Sample 1=216</td>
<td>6–8 weeks</td>
<td>DIS</td>
<td>2.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sample 2=192</td>
<td></td>
<td></td>
<td>0.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. MINI = the Mini International Neuropsychiatric Interview, SCID = the Structured Clinical Interview for DSM Disorders, DASS = Depression Anxiety Stress Scales, DIS = the Diagnostic Interview Schedule, CCEI= Crown-Crisp Experiential Index
### Table 3.8(Continued): A summary of Anxiety disorders, including GAD, Panic Disorder and Social Phobia in the postpartum period

<table>
<thead>
<tr>
<th>Country</th>
<th>Study</th>
<th>Design</th>
<th>Sample size</th>
<th>Assessment time</th>
<th>Measures</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panicked</td>
<td>USA</td>
<td>Wenzel et al., 2001</td>
<td>Cross sectional study</td>
<td>788</td>
<td>4–7 weeks</td>
<td>SCID</td>
</tr>
<tr>
<td>Social Phobia</td>
<td>Saudi Arabia</td>
<td>Amr et al., 2010</td>
<td>Cross sectional study</td>
<td>190</td>
<td>8 weeks</td>
<td>MINI</td>
</tr>
<tr>
<td>Spain</td>
<td>Navarro et al., 2008</td>
<td>Two-phase cross sectional study</td>
<td>428</td>
<td>6 weeks</td>
<td>SCID</td>
<td>0.2%</td>
</tr>
<tr>
<td>Australia</td>
<td>Rowe et al., 2008</td>
<td>Cross sectional study</td>
<td>138</td>
<td>10.3 weeks</td>
<td>SCID</td>
<td>6.5%</td>
</tr>
<tr>
<td>USA</td>
<td>Wenzel et al., 2005</td>
<td>Longitudinal study</td>
<td>147</td>
<td>8 weeks</td>
<td>SCID</td>
<td>4.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6 months</td>
<td></td>
<td>2.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12 months</td>
<td></td>
<td>1.7%</td>
</tr>
</tbody>
</table>

Note. MINI = the Mini International Neuropsychiatric Interview, SCID = the Structured Clinical Interview for DSM Disorders.
3.2.3.5 Obsessive-Compulsive Disorder (OCD)

DSM-IV-TR defines OCD as an Anxiety disorder that is characterized by the presence of obsessions, compulsions, or both (Table 3.9). The clinical presentation of OCD in the postpartum period includes: 1) onset (often rapid) or worsening during pregnancy or the postpartum period; 2) obsessional content involving contamination (particularly during pregnancy), illness, violence, harm, accidents or loss; 3) avoidance of obsessional cues, sometimes including avoidance of the newborn; 4) compulsive rituals may be overt (washing, checking) or covert (mental rituals, neutralizing); 5) often associated with depressive symptoms; and 6) not associated with postpartum psychosis (Abramowitz, McKay & Taylor, 2008, p. 140). The DSM-5 (2013) has not characterized OCD as an anxiety disorder; however, it is characterized as an impulse control disorder but the symptom criteria for OCD in the DSM-5 remained unchanged from DSM-IV-TR criteria. The DSM-5 has changed the ‘with poor insight’ specifier to allow different degrees of insight including good or fair insight, poor insight or absent insight/delusional beliefs.

Table 3.9: DSM-IV-TR criteria for OCD

<table>
<thead>
<tr>
<th>Obsessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recurrent and persistent thoughts, impulses, or images that are experienced as intrusive and inappropriate, causing anxiety or distress.</td>
</tr>
<tr>
<td>The thoughts, impulses, or images are not simply excessive worries about real-life problems.</td>
</tr>
<tr>
<td>The person attempts to ignore or suppress such thoughts, impulses, or images or to neutralize them with some other thought or action.</td>
</tr>
<tr>
<td>The person recognizes that the obsessional thoughts, impulses, or images are a product of his or her own mind.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compulsions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetitive behaviors or mental acts that the person feels driven to perform in response to an obsession or according to rules that must be applied rigidly.</td>
</tr>
<tr>
<td>The behaviors or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation.</td>
</tr>
<tr>
<td>These behaviors or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent, or they are clearly excessive.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Obsessive-compulsive disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>At some point during the course of the disorder, the person has recognized that the obsessions or compulsions are excessive or unreasonable.</td>
</tr>
<tr>
<td>The obsessions or compulsions cause marked distress, take up more than 1 hour a day, or significantly interfere with the person’s normal routine, occupation, or usual social activities.</td>
</tr>
<tr>
<td>If another Axis I disorder, substance use, or general medical condition is present, the content of the obsessions or compulsions is not restricted to it.</td>
</tr>
</tbody>
</table>
OCD is considered one of the most common psychiatric disorders, with a lifetime prevalence of 2–3% in the general adult population (Karno, Golding, Sorenson, & Burnam 1988; Ruscio, Stein, Chiu, & Kessler, 2010). Several studies have reported an association between OCD symptoms and significant life events, including pregnancy and childbirth. Miller and colleagues (2012) conducted a prospective cohort study with 461 women in the postpartum period. They found 11% of women screened positive for OCD symptoms at two weeks postpartum. At six months postpartum almost half of those women had persistent symptoms, and an additional 5.4% had developed new OCD symptoms. The study revealed the postpartum period as a high risk time for the development of OCD. Evidence also supports that women had a new onset or exacerbation of OCD in the postpartum period (Baer et al., 1990; Labad et al., 2005; Sichel, Cohen, Dimmock, & Rosenbaum, 1993; Arnold, 1999).

The most common symptom in the perinatal period is obsessional fears of intentionally or accidentally harming the baby (Sichel et al., 1993; Arnold, 1999; Labad et al., 2005). While obsessional thoughts about harming the baby are not a unique symptom to OCD, such thoughts should be carefully differentiated from severe Depression or Psychosis in postpartum women. The difference between OCD and Postpartum Psychosis is that the thoughts of harming the baby in Psychosis do not have fears associated with them, because women with this condition have a lack of insight and judgement (Spinelli, 2009). Women with postpartum OCD are aware that their symptoms are unreasonable and postpartum OCD tends to be expressed as ego-dystonic (having distressing or unacceptable thoughts or behaviors) intrusive obsessional thoughts of harming the baby and the woman tries to control the thoughts. However, Wenzel and colleagues (2001) conducted a cross-sectional study in a community-based sample of 788 postpartum women in which 84 women reported difficulties with obsessions and compulsions. They found 8% of women reported difficulties with obsessions, and 9% of women reported difficulties with compulsions. Seventeen women reported compulsive cleaning or hand washing behaviour, and 11 of these women reported symptoms severe enough to warrant a diagnosis of OCD, while 13 of them related their behaviour to concerns about their infant.

OCD has been previously documented as the most commonly investigated Anxiety disorder associated with childbirth (Abramowitz, Schwartz, Moore, & Luenzmann,
2003). Studies that have examined the prevalence rate are displayed in Table 3.10. It has been reported that postpartum OCD is common with co-morbid Depression (Arnold, 1999; Sichel et al., 1993). Uguz, Akman, Kaya and Cilli (2007) identified the predictors of postpartum OCD were avoidant, and Obsessive-compulsive personality disorder.

Table 3.10: Studies of OCD in the postpartum period

<table>
<thead>
<tr>
<th>Country</th>
<th>Study</th>
<th>Design</th>
<th>Sample size</th>
<th>Assessment time</th>
<th>Measures</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Zambaldi et al., 2009</td>
<td>Cross sectional study</td>
<td>400</td>
<td>2–26 weeks</td>
<td>MINI</td>
<td>9%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Amr et al., 2010</td>
<td>Cross sectional study</td>
<td>190</td>
<td>2 months</td>
<td>MINI</td>
<td>1.1%</td>
</tr>
<tr>
<td>Spain</td>
<td>Navarro et al., 2008</td>
<td>Two-phase cross sectional study</td>
<td>428</td>
<td>6 weeks</td>
<td>SCID</td>
<td>0.7%</td>
</tr>
<tr>
<td>Turkey</td>
<td>Uguz et al., 2007</td>
<td>Prospective longitudinal study</td>
<td>302</td>
<td>6 weeks</td>
<td>SCID</td>
<td>4%</td>
</tr>
<tr>
<td>USA</td>
<td>Forray, Focseneanu, Pittman, McDougle &amp; Epperson, 2010</td>
<td>Prospective longitudinal study</td>
<td>126</td>
<td>-</td>
<td>SCID</td>
<td>15.4%</td>
</tr>
<tr>
<td>USA</td>
<td>Wenzel et al., 2005</td>
<td>Cross sectional study</td>
<td>147</td>
<td>8 weeks</td>
<td>SCID</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

Note. MINI = the Mini International Neuropsychiatric Interview, SCDI = the Structured Clinical Interview for DSM Disorders.
3.2.3.6 Post-Traumatic Stress Disorder (PTSD)

DSM–IV-TR criteria (APA, 2000) defines PTSD as an Anxiety disorder characterized by significant impairment or distress due to symptoms of 1) re-experiencing a traumatic event (e.g., through nightmares or flashbacks), 2) avoidance of stimuli associated with a traumatic event and numbing of affect, and 3) persistent increased arousal (e.g., hypervigilance or irritability) (see Table 3.11).

The new version of DSM-5 criteria has classified PTSD as a ‘trauma and stressor-related disorder’ rather than an Anxiety disorder. In DSM-5, the criterion of individuals responding to this event with intense fear, helplessness or horror was excluded. Researchers have questioned whether the removal of this criterion would affect the prevalence rate (Boorman, Devilly, Gamble, Creedy, & Fenwick 2014; Miller et al., 2012; Ayers, Harris, Sawyer, Parfitt, & Ford, 2009).

PTSD affects around 3% of women after childbirth (see Table 3.12) (Ayers & Pickering, 2001; Creedy, Shochet, & Horsfall, 2000; Soderquist, Wijma, Thorbert, & Wijma 2009). The particular clinical presentation of PTSD includes avoidance of the infant or future childbearing, sexual dysfunction, or a negative mother-infant relationship.

The effects of postpartum PTSD on women and the relationships with the partner and child have been investigated. O’Driscoll (1994) and Nicholls and Ayers (2007) reported cases of women who avoided a sexual relationship with their partners because sexual activity would result in re-experiencing the pain and distress they experienced during traumatic labour and could lead to avoidance of future childbearing. Case studies support the association of postpartum PTSD with secondary tocophobia (fear for childbirth) (Hofberg & Brockington, 2000), and mother-infant attachment disorder (Ballard, Stanley, & Brockington, 1995). Ryding (1993) conducted a study on 33 pregnant women interviewed to provide their reasons for requesting a caesarean section. The study found that 28 of the women had previous traumatic labours that involved severe pain during labour or fear related to the health of the baby. Ayers, Eagle and Waring (2006) suggested that symptoms of avoidance may lead to the mother not bonding with the infant. Women with PTSD may experience difficulty breastfeeding, and have a negative relationship with their babies (Reynolds, 1997; Nicholls & Ayers,
Beck (2004) conducted a phenomenological qualitative study to describe the essence of mothers’ experiences of PTSD after childbirth. Women state that PTSD distanced them from their babies and also caused them to isolate themselves from other mothers and babies.

Table 3.11: DSM-IV-TR criteria for PTSD

<table>
<thead>
<tr>
<th>Event</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>The person has been exposed to a traumatic event in which both of the following were present:</td>
<td></td>
</tr>
<tr>
<td>The person experienced, witnessed, or was confronted with an event that involved actual or threatened death or serious injury or a threat to the physical integrity of others.</td>
<td></td>
</tr>
<tr>
<td>The person’s response involved intense fear, helplessness, or horror.</td>
<td></td>
</tr>
<tr>
<td>The traumatic event is persistently re-experienced in at least one of the following ways:</td>
<td></td>
</tr>
<tr>
<td>Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.</td>
<td></td>
</tr>
<tr>
<td>Recurrent distressing dreams of the event.</td>
<td></td>
</tr>
<tr>
<td>Acting or feeling as if the traumatic event were recurring, including a sense of reliving the experience, illusions, hallucinations, and flashback episodes.</td>
<td></td>
</tr>
<tr>
<td>Intense psychological distress at exposure to cues that symbolize an aspect of the traumatic event.</td>
<td></td>
</tr>
<tr>
<td>Physiologic reactivity on exposure to cues that symbolize or resemble an aspect of the traumatic event.</td>
<td></td>
</tr>
<tr>
<td>The person persistently avoids stimuli associated with the trauma and has numbing of general responsiveness including at least three of the following:</td>
<td></td>
</tr>
<tr>
<td>Efforts to avoid thoughts, feelings, or conversations associated with the trauma</td>
<td></td>
</tr>
<tr>
<td>Efforts to avoid activities, places, or people that arouse recollections of the trauma</td>
<td></td>
</tr>
<tr>
<td>Inability to recall an important aspect of the trauma</td>
<td></td>
</tr>
<tr>
<td>Markedly diminished interest or participation in significant activities</td>
<td></td>
</tr>
<tr>
<td>Feeling of detachment or estrangement from others</td>
<td></td>
</tr>
<tr>
<td>Restricted range of affect</td>
<td></td>
</tr>
<tr>
<td>Persistent symptoms of increased arousal are indicated by at least two of the following:</td>
<td></td>
</tr>
<tr>
<td>Difficulty falling or staying asleep</td>
<td></td>
</tr>
<tr>
<td>Irritability or outbursts of anger</td>
<td></td>
</tr>
<tr>
<td>Difficulty concentrating</td>
<td></td>
</tr>
<tr>
<td>Hypervigilance</td>
<td></td>
</tr>
<tr>
<td>Exaggerated startle response</td>
<td></td>
</tr>
<tr>
<td>Duration of the disturbance is more than 1 month.</td>
<td></td>
</tr>
<tr>
<td>The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.</td>
<td></td>
</tr>
</tbody>
</table>
Table 3.12: Studies of PTSD in the postpartum period

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Author</th>
<th>Design</th>
<th>Sample size</th>
<th>Assessment time</th>
<th>Measures</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>2010</td>
<td>Alcorn, O'Donovan, Patrick, Creedy, &amp; Devilly White, Matthey, Boyd, &amp; Barnett</td>
<td>Prospective longitudinal study</td>
<td>866</td>
<td>4–6 weeks</td>
<td>The Post-traumatic Diagnostic Scale</td>
<td>3.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>826</td>
<td>12 weeks</td>
<td></td>
<td>6.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>776</td>
<td>24 weeks</td>
<td></td>
<td>5.8%</td>
</tr>
<tr>
<td></td>
<td>2006</td>
<td></td>
<td>Prospective longitudinal study</td>
<td>316</td>
<td>6 weeks</td>
<td>The Post-traumatic Stress Symptom Scale – Self-report version (PSS-SR)</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>277</td>
<td>6 months</td>
<td></td>
<td>2.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>261</td>
<td>12 months</td>
<td></td>
<td>2.4%</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>Creedy et al.</td>
<td>Prospective, longitudinal design</td>
<td>499</td>
<td>4-6 weeks</td>
<td></td>
<td>5.6%</td>
</tr>
<tr>
<td>Canada</td>
<td>2012</td>
<td>Verreault et al.</td>
<td>Prospective study</td>
<td>308</td>
<td>4–6 weeks</td>
<td>PTSD Module-SCID-I MPSS-SR</td>
<td>SCID-I MPSS 1.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 months</td>
<td>SCID-I</td>
<td>7.6%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6 months</td>
<td>MPSS-SR</td>
<td>20.8%</td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>2003</td>
<td>Soet, Brack, &amp; DiIorio</td>
<td>Prospective longitudinal study</td>
<td>103</td>
<td>4 weeks</td>
<td>Traumatic Event Scale</td>
<td>1.9%</td>
</tr>
<tr>
<td>Iran</td>
<td>2015</td>
<td>Moghadam, Shamsi, &amp; Moro</td>
<td>Cross sectional study</td>
<td>400</td>
<td>6–24 weeks</td>
<td>PTSD Symptom Scale-Interview (PSS-I)</td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(PSS-I)</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Modarres, Afrasiabi, Rahnama, &amp; Montazeri Halperin, Sarid, &amp; Cwikel Adewuya, Ologun, &amp; Ibighami</td>
<td>Cross sectional study</td>
<td>400</td>
<td>6–8 weeks</td>
<td>PTSD Symptom scale</td>
<td>19.9%</td>
</tr>
<tr>
<td>Israel</td>
<td>2015</td>
<td></td>
<td>Prospective study</td>
<td>171</td>
<td>At birth (24–48hr)</td>
<td></td>
<td>39.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6–8 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>2006</td>
<td></td>
<td>Cross sectional study</td>
<td>876</td>
<td>6 weeks</td>
<td>MINI</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

Note. MINI = the Mini International Neuropsychiatric Interview, SCDI = the Structured Clinical Interview for DSM Disorders, PTSD= Post-Traumatic Stress Disorder, MPSS-SR= Modified PTSD Symptom Scale


<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Author</th>
<th>Design</th>
<th>Sample size</th>
<th>Assessment time</th>
<th>Measures</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>2010</td>
<td>Amr et al.</td>
<td>Cross sectional study</td>
<td>190</td>
<td>2 months</td>
<td>MINI</td>
<td>1.1%</td>
</tr>
<tr>
<td>Spain</td>
<td>2008</td>
<td>Navarro et al.</td>
<td>Two-phase cross sectional study</td>
<td>428</td>
<td>6 weeks</td>
<td>SCID</td>
<td>0.1%</td>
</tr>
<tr>
<td>Sweden</td>
<td>2009</td>
<td>Söderquist et al.</td>
<td>Prospective longitudinal study</td>
<td>1224</td>
<td>1 month</td>
<td>Traumatic Event Scale</td>
<td>1.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wijma, Söderquist, &amp; Wijma</td>
<td>Cross sectional study</td>
<td>1640</td>
<td>Within 1 year</td>
<td>Traumatic Event Scale</td>
<td>1.7%</td>
</tr>
<tr>
<td>UK</td>
<td>2009</td>
<td>Ayers et al.</td>
<td>Longitudinal community studies</td>
<td>Total:1423</td>
<td>1st year after birth</td>
<td>Post-traumatic Stress Diagnostic Scale self-report version</td>
<td>2.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cross-sectional internet studies</td>
<td>Community (n=502)</td>
<td></td>
<td></td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Internet (n=921)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>Ayers &amp; Pickering</td>
<td>Prospective study</td>
<td>218</td>
<td>6 weeks</td>
<td>PTSD Symptoms Scale</td>
<td>6.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>201</td>
<td>8 months</td>
<td></td>
<td>3.5%</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>Czarnocka &amp; Slade</td>
<td>Cross sectional study</td>
<td>264</td>
<td>6 weeks</td>
<td>PTSD Questionnaire a questionnaire derived from DSM-IV criteria</td>
<td>3.0%</td>
</tr>
<tr>
<td>USA</td>
<td>2005</td>
<td>Wenzel et al.</td>
<td>Cross sectional study</td>
<td>147</td>
<td>8 weeks</td>
<td>SCID</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td>Harville, Xiong, Pridjian,</td>
<td>Cohort study</td>
<td>292</td>
<td>2 months</td>
<td>PTSD checklist</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elkind-Hirsch, &amp; Buekens</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td>Onoby et al.</td>
<td>Longitudinal study</td>
<td>110</td>
<td>4–8 weeks</td>
<td>PTSD Checklist Civilian version</td>
<td>1.9%</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>Cerulli, Talbot, Tang, &amp;</td>
<td>Cross sectional study</td>
<td>188</td>
<td>1st year</td>
<td>SCID</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chaudron</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. MINI = the Mini International Neuropsychiatric Interview, SCID = the Structured Clinical Interview for DSM Disorders, PTSD= Post-Traumatic Stress Disorder
3.2.3.7 Risk factors associated with Anxiety Disorders in the postpartum period

Risk factors for Anxiety Disorders in the postpartum period have received less attention than those for Depression. Milgrom and Gemmill (2015) have documented that risk factors of postpartum Anxiety are similar to those identified for PPD. The DSM-5 has linked three risk factors that could contribute to any Anxiety disorder in the general population, which include temperamental, environmental or genetic and physiological factors (APA, 2013). Wenzel (2011) describes risk factors for a diagnosis of any Anxiety disorder in the postpartum period. Sociodemographic factors (nulliparous women, younger mothers, being unmarried, low education and low income) were correlated as potential risk factors. The psychological factors in women with Perinatal Anxiety are related to those with a past history of Depression or Anxiety, particularly if they had discontinued psychotropic medication. The quality of relationship with others, especially partners, has been shown to put women at risk of Anxiety disorders (Fletcher, Garfield, & Matthey, 2015).

Risk factors for GAD were examined by Wenzel and colleagues (2005). The study identified low socioeconomic status, personal psychiatric history and family psychiatric history as risk factors for postpartum GAD. Prenoveau and colleagues (2013) conducted a longitudinal study in a community sample of 296 mothers assessed for GAD and Major Depression at three, six, ten, 14 and 24 months postpartum. Interestingly, the study found GAD is a risk factor for Major Depression but not vice versa.

Risk factors for Panic Disorder and Social Phobia were examined in detail in one study. Wenzel and colleagues (2005) examined demographic factors such as mother’s age, infant’s age, number of children and socioeconomic status assessed on the Beck Anxiety Inventory (BAI; Beck, Steer, & Brown, 1996) and on the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998) at eight weeks postpartum. Young mothers, low socioeconomic status, and low education level of the mother and the infant’s father were significant predictors of Social Phobia and Panic Disorder. Moreover, women who were not married to the baby’s father or had a short period of relationship with the baby’s father had high scores on BAI and SIAS compared to women who were married to the baby’s father or women who had a long period of relationship. Women with a personal history or family history of psychiatric illness had
high scores on BAI but not on SIAS. Parity, ethnicity, previous psychiatric illnesses or family history of psychiatric illnesses were not associated with Social Phobia.

Wenzel (2011) argues that hormonal changes after childbirth may contribute to the development of Social Phobia. Changes in hormonal levels would explain the relationship between breastfeeding and Social Phobia in the Wenzel et al. (2005) study. The study found women who did not breastfeed their babies had high scores on SIAS compared to women who breastfed their babies. Wenzel (2011) suggests that the decision to not breastfeed the baby could be a consequence of Social Phobia symptoms rather than a cause. It has been suggested that psychological factors are likely to cause Social Phobia; however, this finding has been drawn from Social Phobia research in the general population (Wenzel, 2011).

A number of risk factors have been identified for postpartum PTSD. Previous psychiatric history has been documented to be a risk factor for developing PTSD. In Sweden, Soderquist and colleagues (2006) conducted a longitudinal study of 1,224 women. They reported a previous history of psychological or psychiatric counselling, pre-traumatic stress or severe fear of delivery, and Antenatal Depression as risk factors to develop PTSD postnatally. Similarly, Verreault and colleagues (2012) reported that a history of sexual trauma and Anxiety sensitivity can increase the probability of developing PTSD after childbirth. Studies have also shown that invasive procedures during labour may increase the risk of PTSD (Ryding, Wijma, & Wijma, 1997; Maclean, McDermott, & May, 2000; Soderquist et al., 2002). Other risk factors may be associated with PTSD, including childhood or adulthood sexual assault (Cook et al., 2004), pain during labour (Menage, 1993; Lyons, 1998; Keogh, Ayers, & Francis, 2002; Allen, 1998), and the mother’s feelings of fear for herself and her infant (Czarnocka & Slade, 2000; Ryding, 1993).
3.2.4 Anxiety-Depression

It is widely acknowledged that Anxiety and Depression are often co-morbid. In 1968, Pitt’s study reported a mixture of symptoms of Depression and Anxiety. He described mothers as having ‘Atypical Depression’ and revealed that 10.8% of women had PPD and 6.2% had doubtful Depression. The latter group were categorised as 1) women with unusual Anxiety unaccompanied by Depression, 2) Anxiety and Depression purely reactive to the baby’s ill-health, 3) prolonged fatigue or difficulty in coping in the absence of Depression, or anaemia, 4) diminution of libido as a single symptom, and 5) development or reappearance of psychosomatic disorders manifesting as migraine. Wenzel and colleagues (2005) reported a high overlap between Anxiety and depressive symptoms, as approximately 50% of women had co-morbid Anxiety and depressive symptoms.

Anxiety has been found to be a common mood disorder in the postpartum period as has Depression. Ross and colleagues (2003) identified that Anxiety symptoms in women with PPD are more commonly found with depressive symptoms than in non-postnatal Depression. Reck and colleagues (2008) also reported the prevalence rate of postpartum Anxiety disorders and PPD was 11.1% and 6.1%, respectively. Interestingly, they also found that 18.4% of women with an Anxiety disorder were also diagnosed with PPD and 33.9% of women with PPD had an Anxiety disorder. These results suggest that Anxiety disorders in the presence of depressive symptoms may be an important clinical concern and should be reported together or, if symptoms of one are found, symptoms of the other should be explored.

3.3 Screening for PPD and Anxiety disorders

As discussed earlier, PPD and Anxiety are common mood disorders in the postpartum period and the negative consequences can be serious if unrecognised or left untreated. Evidence shows that many depressed women do not seek help for their depressive symptoms (Dennis & Chung-Lee, 2006). Early detection of mood disorders through screening can identify women and avoid some of the serious consequences on the mother, child and family. Many studies have been carried out to demonstrate the effectiveness of identifying PPD through the use of universal screening over routine practice detection during routine clinical evaluation. In outpatient settings, universal Depression screening has been shown to improve detection rates significantly compared
with routine care (35.4% and 6.3%, respectively; p=0.001) (Evins, Theofrastous & Galvin, 2000).

Different instruments have been developed to screen postpartum mental disorders. It is challenging to determine which instrument is the most appropriate to detect mental disorders in the postpartum period. It is important to consider whether the screening instrument is culturally sensitive, easy to complete and to understand (in particular for illiterate women), easy to incorporate into clinical practice and cost effective for the health care system (Boyd, Le, & Somberg, 2005; Singleton & Krause, 2009).

Today, PPD and Anxiety have been examined internationally using a variety of measures, including standardized interviews, clinician-rated scales or self-report scales. Most studies use standardized measures, assessed by clinical interview or self-reported scales (O’Hara et al., 1991). The most common standardized interviews and scales used in screening PPD and Anxiety disorders are briefly presented in this section.

There are many different screening tools available for screening Depression or Anxiety. A number of studies have assessed the performance of various scales for the purposes of screening for PPD or Anxiety. The instruments that have been studied for screening PPD include the EPDS, PHQ-9, PDSS, BDI and GHQ. Myers and colleagues (2013) recently published a study in which nine different screening scales for PPD were assessed to assess the efficacy of screening PPD. The measures included: the EPDS, the four versions of BDI, Leverton Questionnaire, Mood Spectrum Self-Report (MOODS-SR), HRSD, PDSS, and two on a ‘two-question’ screen. The study suggests sensitivity, specificity, timing, and frequency are important characteristics for a screening scale. It is also recommended using two-step strategy. There are also a variety of measures designed to screen Anxiety symptoms in the general population or specifically for the postnatal period. A recent systematic review of 30 perinatal screening studies for Anxiety was conducted. No screening instrument was recommended for use in routine antenatal care due to the lack of measures of Anxiety specific to pregnant or postnatal women (Meades & Ayers, 2011).
3.3.1 Standardized interviews

There are a number of standardized interviews used to make the diagnosis of PPD and Anxiety disorders. These interviews are used for research purposes and are based on rigid criteria to ensure a systematic and reliable diagnosis based on the diagnostic criteria. The validation of screening instruments and the diagnosis of PPD can only be made through the application of diagnostic criteria. Using the standardized interviews has increased the reliability of diagnoses. The main disadvantages for clinical interviews are the financial and time costs involved. Various diagnostic interviews are used with women during the postpartum period, such as the Present State Examination (PSE; Wing, Cooper, & Sartorius, 1974), the Mini-International Neuropsychiatric Interview (MINI; Sheehan et al., 1998) and the Structured Clinical interview for DSM-5 (SCID-5; First, 1995).

3.3.1.1 The Mini-International Neuropsychiatric Interview (MINI)

The MINI is a short, structured diagnostic interview, developed jointly by psychiatrists and clinicians in the United States and Europe, for DSM-IV and ICD-10 psychiatric disorders. It takes less time (approximately 15 minutes) than other diagnostic interviews. It is fully structured to allow administration by non-specialized interviewers. For each disorder, one or two screening questions rule out the diagnosis when answered negatively. Probes for severity, disability or medically explained symptoms are not explored symptom-by-symptom. The MINI has been used in a number of studies among postpartum women and has been translated into Arabic (Ossman & Al-Radi, 2010). More details are provided in Chapter 4.

3.3.2 Clinician-report scales

Several clinician-rated scales have been developed to assess Depression and to observe treatment response. These scales are used to quantify and standardise clinical judgment and provide ratings of duration and severity, but they have not been used in population-based screening. The two scales reported most frequently in Postpartum Depression studies are the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) and the Montgomery-Asberg Depression Rating Scale (MADRS; Montgomery & Asberg, 1979).
3.3.3 Self-report scales to measure PPD

Various self-report scales for examining depressive symptoms and monitoring treatment response have been developed. Self-report scales generally require subjects to rate depressive symptoms in terms of frequency or severity. Self-report scales are easier and cheaper to administer and do not require the presence of qualified, trained clinicians. However, these measures cannot be used to obtain a diagnosis, and high scorers are normally assessed using a structured clinical interview.

There are nine generic self-report scales that are not specifically designed for the perinatal period and used to identify Postpartum Depression. The three self-report scales utilized most frequently in PPD studies include the Beck Depression Inventory (BDI; Beck, et al., 1961 and BDI-II; Beck, et al, 1996), the General Health Questionnaire (GHQ; Goldberg, 1972) and the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983).

However, these scales have been some limitations in order to be used as a screening tool in the postpartum period. The BDI (Beck et al., 1961) has been criticized due to the low sensitivity, as well as it includes physical symptoms (Mann & Evans, 2015) and is subject to copyright and are not available for general use. Apart from the BDI, the PHQ-9 (Kroencke, Spitzer, & Williams, 2001) is a self-report rating scale originally designed to detect psychiatric morbidity in the general population and has different somatic items.

The self-report scales that are specifically designed for perinatal period include the EPDS and the Postnatal Depression Screening Scale (PDSS; Beck & Gable, 2000). Unlike the EPDS, the PDSS has not been translated and validated into Arabic.

3.3.3.1 The Edinburgh Postnatal Depression Scale (EPDS)

The most widely used screening measure is the EPDS, which was specifically developed to screen community samples of postpartum mothers for PPD in primary health care settings. The EPDS was designed by Cox, Holden, & Sagovsky (1987) and was derived from an extensive literature analysis of different scales including: the Irritability, Depression and Anxiety Scale (IDA; Snaith, Constantopoulos, Jardine, & McGuffin, 1978), the Hospital Anxiety and Depression Scale (HAD; Zigmond &
Snaith, 1983), and the Anxiety and Depression Scale of Bedford and Foulds (Bedford & Foulds, 1978). The EPDS is a ten-item self-report scale that examines depressive and cognitive Anxiety symptoms. It excludes somatic symptoms associated with the normal symptoms associated with childbirth (Cox, et al., 1987).

A systematic review and meta-synthesis was conducted recently by Brealey and colleagues (2010) to determine whether screening for PPD is acceptable to women and health care professionals. Most women and healthcare professionals found EPDS an acceptable screening instrument. However, the cultural specificity and acceptability of EPDS has been questioned (Edge, 2005). For example, Matthey and colleagues (1997) found Anglo-Celtic women consider EPDS questions to be culturally appropriate, whereas Vietnamese women feel that questionnaires do not elicit true feelings of fear of shame. Arabic women consider question ten, about attempting suicide, to be inappropriate. It is therefore necessary to take into consideration the cultural validation of EPDS before applying it to specific populations (Cox & Holden, 2003; Kozinsky & Dudas, 2015).

The English version of the EPDS has been extensively validated for postpartum use and has showed good psychometric proprieties. It has been validated compared to standard interviews such as SCID, PSE and SPI. The EPDS is also highly correlated with other self-report scales used in the perinatal period, including the BDI, r (110) = .68, p < .01 (Harris, Huckle, Thomas, Johns, & Fung, 1989) and GHQ, r (103) = 0.72, p<.01 (Boyce, Stubbs, & Todd, 1993).

The optimal cut-off score for English-speaking women for Major Depression is 13 or more (Cox et al., 1987). The English version of the EPDS at this cut-off score has a sensitivity (proportion of women correctly classified as having PPD) of 86%, a specificity (proportion of women correctly classified as not having PPD) of 78%, and a positive predictive value (PPV) (percentage of women who score in the depressed range on the EPDS who are diagnosed as depressed) of 73%. At a cut-off score of 10 or more, the EPDS has 100% specificity and sensitivity of 76% when Minor Depression is included (Cox et al., 1987; Harris, Huckle, Thomas, Johns, & Fung, 1989; Matthey, Henshaw, Elliott, & Barnett, 2006; Murray & Carothers, 1990).
The EPDS has been used widely in many countries and cultures, and validation studies of the translated versions have been reported in Arabic (e.g. Ghubash, Abu-Saleh, & Daradkeh, 1997), Swedish (e.g. Wickberg & Hwang, 1996), French (Guedeney & Fermanian, 1998), Italian (e.g. Benvenuti, Ferrara, Niccolai, Valoriani, & Cox, 1999), Norwegian (Berle, Aarre, Mykletun, Dahl, & Holsten, 2003), Portuguese (e.g. Augusto, Kumar, Calheiro, Matos, & Figueiredo, 1996), Spanish (Jadresic, Araya, & Jara, 1995), Dutch (Pop, Komproe, & Van Son, 1992), Nigerian (Adewuya, Ola, Dada, & Fasoto, 2006), Chinese (Lau, Wang, Yin, Chan, & Guo, 2010), Malay (Rushidi, Azidah, Shaiful, & Jamil, 2002), Taiwanese (Teng et al., 2005), Japanese (Yoshida et al., 2001) and Thai (Pitanupong, Liabsuetrakul, & Vittayanont, 2007). These validation studies have found either 10 or more or 12 or more as the optimal cut-off score for identifying Major Depression. This echoes what Matthey and colleagues (1997) believe: that the EPDS scores should be interpreted cautiously as different cut-off scores may be required as each version is validated within a specific cultural or language group. Although the optimal cut-off appears similar, there are disparities among the studies due to differences in the time of assessment in relation to childbirth or clinical interview instruments, as some measures (e.g., PSE) assess depressive symptoms in the previous four weeks, while others (e.g., SPI or MINI) rate symptoms in the previous two weeks; this latter timescale is closer to the EPDS (in the past seven days) instructions, which may improve comparison between the two instruments. For example, Adewuya and colleagues (2005) concluded in their study that a threshold of 12 or more (using DSM-III-R criteria) was the optimal cut-off score in a Nigerian population at six weeks postpartum, giving a sensitivity of 100% and a specificity of 98%. Wickberg and Hwang (1996), validating the EPDS in a Swedish community sample at three months postpartum, also suggested a cut-off score of 12 or more (using DSM-III-R criteria), giving a sensitivity of 85% and a specificity of 63%. It is clearly noted that there are universal cut-off scores in each culture based on the way the EPDS is adapted. Significant differences have been reported in methodology used in population selection criteria, diagnostic criteria, cut-off values, or study timeframe, which have resulted in sensitivity and specificity differences. However, all the studies have shown that EPDS is a valid screening instrument across different cultures. For this reason, in this PhD research, the EPDS was chosen as one of the instruments for measuring PPD.
The cultural adaptation is also important, even if used in countries speaking the same language (Kozinnsky & Dudas, 2015). For example, Spanish versions of EPDS have shown different cut-off scores in postnatal samples of women: the Spanish version in Spain reported the optimal cut-off as 11 or more at six weeks postpartum (Garcia-Esteve, Ascaso, Ojuel, & Navarro, 2003) whereas the Mexican version reported 12 or more as the optimal cut-off score for women less than four weeks postpartum, and 8 or more for women within four to 13 weeks postpartum (Alvarado-Esquivel, Sifuentes-Alvarez, Salas-Martinez, & Martínez-García, 2006). Alvarado-Esquivel and colleagues (2006) emphasised ‘the need to perform evaluations of the EPDS in each country before the instrument can be used for screening Depression’ (p. 5) even if they speak the same language. Three studies have validated the Arabic version of EPDS in different countries, including the United Arab Emirates, Australia and Morocco (see Table 3.13), and each study reported a different cut-off score based on different assessment criteria. It would therefore be important to evaluate the screening properties of the EPDS against a diagnostic interview for Depression and Anxiety with a sample of postpartum women in Saudi Arabia.

Despite some slight differences in the methodology across the validated Arabic studies, two studies have found the optimal cut-off score is 10 or more to screen postpartum women for Depression. Ghubash and colleagues (1997) found the optimal cut-off score of 10 or more for Major and Minor Depression, whereas Matthey and Barnett (1997) reported the optimal cut-off score of 10 or more for Major Depression only. Agoub and colleagues (2005) found the cut-off score of 12 or more for Major and Minor Depression is optimal for Arabic Moroccan women.

Ghubash and colleagues (1997) and Matthey and Barnett’s (1997) studies recommended that the optimal cut-off score for Arabic women is 10 or more for Major and Minor Depression. In the Ghubash and colleagues study, 95 women were recruited in hospitals. The EPDS was administered in week one and the PSE was administered in week eight. The validity of the measure relies on performing the assessment at the same time (Kline, 2013). In their study, Ghubash and colleagues acknowledged that there was a long interval between administering the two scales, which could affect the scale validity. If the study used a short time period, the cut-off score may have been different. In Matthey and Barnett’s study, 98 women were recruited at six weeks postpartum from
antenatal clinics at hospitals in south west Sydney, Australia. Arabic women were interviewed using the Diagnostic Interview Schedule (DIS; Karam, Barakeh, Karam, & El-Khoury, 1991) at home at about six weeks after childbirth, along with the EPDS. Agoub and colleagues (2005) recommended 12 or more as the optimal cut-off score for screening Arabic women for Major and Minor Depression. In their study, 144 women were recruited in maternal and infant health units in primary health care settings. Women were administered the EPDS and interviewed using the MINI at the same time. The Agoub et al. study used the same Arabic version of the EPDS as the Ghubash et al. study; however, the Moroccan Colloquial Arabic version of the MINI was used. Both the EPDS and MINI scales were administered at the same time.

With an EPDS cut-off score point of 10 or more across the three studies, the sensitivity ranged from 78–100 % and the specificity ranged from 80–88%. The positive predictive value (PPV) of the EPDS at the same cut-off score ranged from 29–65 % and the negative predictive value was only reported in one study showing 99%. Using an EPDS cut-off score point of 12 or more, the sensitivity ranged from 56–92 % and the specificity ranged from 90–96%. The PPV of the EPDS at the same cut-off score ranged from 34—86% and the negative predictive value was only reported in one study showing 96% (see Table 3.13).
Table 3.14: Studies examining the validation of the Arabic version of the EPDS for screening PPD during the postpartum period

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Country</th>
<th>Sample size</th>
<th>Diagnostic criteria</th>
<th>Diagnostic measure and diagnosis</th>
<th>Time of assessment postpartum</th>
<th>Recommended cut-off score</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>PPV (%)</th>
<th>NPV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghubash et al.</td>
<td>1997</td>
<td>UAE</td>
<td>95</td>
<td>ICD-10</td>
<td>PSE for Major and Minor Depression</td>
<td>1 week</td>
<td>10 or more</td>
<td>91</td>
<td>73</td>
<td>84</td>
<td>90</td>
</tr>
<tr>
<td>Matthey &amp; Barnett</td>
<td>1997</td>
<td>Australia</td>
<td>98</td>
<td>DSM-III-R</td>
<td>DIS for Major Depression</td>
<td>6 weeks</td>
<td>10 or more</td>
<td>78</td>
<td>56</td>
<td>80</td>
<td>91</td>
</tr>
<tr>
<td>Agoub et al.</td>
<td>2005</td>
<td>Morocco</td>
<td>144</td>
<td>DSM IV</td>
<td>MINI for Major and Minor Depression</td>
<td>2 weeks</td>
<td>12 or more</td>
<td>100</td>
<td>92</td>
<td>88</td>
<td>96</td>
</tr>
</tbody>
</table>

Note. PPV = positive predictive value, NPV = negative predictive value, UAE = United Arab of Emirates, PSE = Present State Examination, DIS = Diagnostic Interview Schedule, MINI = the Mini-International Neuropsychiatric Interview
3.3.4 Self-report scales to measure Anxiety

Despite the high prevalence of postpartum Anxiety, it is important to identify valid scales to examine Anxiety that can be used in research and clinical practice. Although several measures have been created to detect Anxiety and used on women who had recently given birth, these measures are designed for the general population and are not often validated for women in the perinatal period. As described earlier, diagnostic interviews based on DSM or ICD-10 is the gold standard to measure Anxiety disorders. There are also different self-report measures that have been developed to screen Anxiety. The most common measures used to identify postpartum Anxiety include the State-trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970), the Hospital Anxiety and Depression Scale-Anxiety (HADS-A; Zigmond & Snaith, 1983) and the EPDS-3A (EPDS; Cox et al., 1987).

STAI is a self-report instrument used to measure the presence and severity of current symptoms of Anxiety and a generalised disposition to be anxious. It clearly distinguishes between the temporary condition of ‘State Anxiety’ and the more general and long-standing quality of ‘Trait Anxiety’. The STAI is one of the most widely used measures of general Anxiety, and is available in many different languages including Arabic (Abdullatif, 2004). However, there are questions as to whether some items could be confounders (e.g. ‘I tire quickly’) by pregnancy and postpartum symptoms.

HADS-A was developed as a brief measure of generalised symptoms of Anxiety and fear. Its main purpose was to screen for clinically significant Anxiety symptoms over the last week. It has seven items, which consist of generalised Anxiety symptoms including tension, worry, fear, panic, difficulties in relaxing, and restlessness. Respondents respond as to how they currently feel. Responses are rated on a 4-point Likert scale and range from 0 to 3. The total score for the HADS-A can range from 0 to 21. It has been translated into many languages, including Arabic. It is an easy-to-complete screening measure to detect the symptoms of Anxiety, designed for use in medical populations. This measure is widely used, and splitting of the subscales (Anxiety and Depression) is commonly practised. However, some items may be not be relevant to postpartum contexts such as ‘I can sit at ease and feel relaxed’. Paul and colleagues (2013) questioned whether the responses of women when they were
administered the scale over the phone reflected their true feelings. They found some were stressed and other women were very relaxed.

EPDS-3A is the three items on the EPDS (Cox et al., 1987) that have been suggested to detect anxiety (Matthey, Fisher, & Rowe, 2013). The three items include: item 3: ‘I have blamed myself unnecessarily when things went wrong’, item 4: ‘I have been anxious for no good reason’, and item 5: ‘I have felt scared or panicky for no very good reason’. It has been found that those items loaded on the Anxiety factor in the factor analysis of the EPDS (Matthey et al., 2013). The subscale ranges from 0 to 9, and Matthey (2008) determined the optimal cut-off score for probable Anxiety is 6 or more in English-speaking women.

Wenzel (2011) claims that three-item Anxiety may be effective in recognising women with PPD; however, more evidence is required as to whether scoring at or above the cut-off meets the DSM criteria of one or more of the Anxiety disorders. It has been suggested that EPDS total scores or the Anxiety subscale of EPDS differentiate women with PPD from postpartum Anxiety (Rowe et al., 2008).

### 3.3.5 Screening for Depression, Anxiety or Distress

Given that the transition to motherhood is associated with emotional distress (Johnson, Weissman & Klerman, 1992), it has been questioned whether screening measures should use specific measures for Depression, Anxiety or Distress, which can be used in clinical practice to identify Postpartum Distress (Ayers et al., 2015). The Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995) was developed to identify women in order to assess Depression, Anxiety or Distress. Ayers and colleagues (2015) suggest the use of one or two general questions to screen women for Depression, Anxiety or Distress would be helpful for clinical practice. Different measures are available which use general questions, including Whooley questions for Depression (Whooley, Avins, Miranda, & Browner, 1997), two questions of PHQ (Kroenke, Spitzer, & Williams, 2003), and Matthey Generic Mood Questions (MGMQ; Matthey et al., 2013). Whooley questions for Depression and two questions of PHQ were developed to screen for Depression only. Gjerdingen, Crow, McGovern, Miner and Center (2009) reported that two questions of PHQ have high sensitivity but not
specificity, and PHQ-9 had high specificity against SCID. They recommended using the sensitive two questions of PHQ at the first administration, followed by the highly specific PHQ-9 in a two-stage screening procedure. However, the MGMQ was developed to screen Depression, Anxiety or Stress. In assessing Anxiety for example, Matthey and colleagues compared self-report Anxiety measures, including three items of EPDS; HADS-A; Pregnancy-Related Thoughts (PRT); Pregnancy Related Anxiety Questionnaire-Revised (PRAQ-R) and MGMQ to MINI as the gold standard. The study reported that MGMQ performed best, detecting between 58% and 87% of high scorers on the other measures.

For the purpose of this PhD study into screening for Postpartum Distress (Depression and Anxiety), it was important to consider utilizing general questions which assess Depression and Anxiety. Such questions could help to screen women in a shorter time and then provide a guide for follow-up assessment. Therefore, the MGMQ has been chosen for this study.

3.3.6 Selecting a screening measure for women in Saudi Arabia

The literature provides a variety of measures to detect Depression and Anxiety in postnatal populations. However, there is much complexity in selecting a screening measure, especially for Saudi women. Few instruments have been developed specifically for PPD (e.g. EPDS and PDSS) and some were developed for generic Depression. Most of the measures are brief and can be completed in a short period of time. Lee and colleagues (2001) conducted a study which aimed to evaluate different measures in screening for Depression among recently delivered women in Hong Kong (GHQ, BDI and EPDS). The study adapted a ‘double-test’, in which both measures (GHQ and EPDS) were used together in their samples. The authors reported that using both measures simultaneously substantially increased the specificity rates and improved identification of women with depressive symptoms. However, the use of two measures imposes a financial and time burden on health care providers and participants, which may make it unfeasible in busy clinic settings. Therefore, if the instrument is to be used for screening within a clinical setting, one instrument only is recommended for screening. Given that the literacy rate in the population to be studied is lower than in
Western populations, a measure using a pictorial representation of a person’s mood was developed for this PhD study. This is discussed in detail in Chapter 4 (Methods section: 4.3).

Boyd and colleagues (2005) recommend the use of self-report measures such as the EPDS, which is the most suitable scale when multiple languages are present. The PDSS or the BDI-II are preferred in a sample of highly educated and predominantly Caucasian women. Another issue in determining which instrument is the most effective in identifying mental disorders in mothers is the cultural factor. Bashiri and Spielvogel (1999) argue that it is necessary to understand the expression of depressive symptoms, the experiences of women with PPD, and assessment which may differ from culture to culture. It is suggested that more research is needed to validate the postpartum screening measures for international samples (Boyd et al., 2005). Therefore, this PhD study has used different self-report measures in order to gain an insight into which screening measure (or measures) would be appropriate for screening women in Saudi Arabia in the postpartum period.

3.3.7 The stability of mood when assessed using self-report instruments

The prevalence of PPD is reported in most studies based on a single administration of the EPDS or other self-report measures. It has been questioned whether the single administration of the EPDS is a reasonable practice to use compared to administering it twice within a short period of time to avoid over-pathologising motherhood (Matthey, 2010). Wickberg and Hwang (1996, p. 184) state that ‘it might be suggested that a first EPDS screening should be followed by an EPDS screening 2–4 weeks later for those women scoring above the threshold on the first occasion’. Cox and Holden (2003, p. 61) state: ‘One high score [on the EPDS] may indicate only that the woman is feeling temporarily overwhelmed by her circumstances or that she is tired and miserable on a particular day. Two high scores separated by 2 weeks, plus an interview, will usually confirm depression.’ Matthey and Ross-Hamid (2012) also suggest women who score high on both occasions would be considered to have ‘enduring distress’, whereas women who just score high on the first occasion would have ‘transient distress’.
A few studies in the postnatal area have showed that when the EPDS is re-tested after a short time interval, many women no longer score ‘High’. Wickberg and Hwang (1996) adapted a two-stage screening for the EPDS in 1,655 Swedish mothers, using a Swedish validated cut-off score of 12 or more. They reported a drop from 12.5% (first occasion) at two months postpartum to 4.3% of women who scored high on both occasions at three months postpartum. Similarly, Ballestrem and colleagues (2005) found, in a sample of 722 women, 17% of women scored high (10 or more) at six weeks postpartum; however, women were assessed after another three weeks and only 3.7% scored high on both occasions. Milgrom and colleagues (2005) also reported 21.5% of women at four months postpartum no longer scored high (using a cut-off score of 12 or more) approximately two weeks later. Morrell and colleagues (2009) found 60% of women were no longer scoring high at the second administration two weeks later. In one Arabic study (Al Hinai & Al Hinai, 2014) in which EPDS repeat testing was adopted, the rate of high scoring women had a slight drop from 13.5% at two weeks postpartum to 10.6% at eight weeks postpartum, using a cut-off score of 12 or more.

The impact of using EPDS based upon a single administration may lead to unnecessary referral to mental health services and women being falsely labelled with PPD. Shakespeare (2001) argues women who scored 10 or more would create a burden to health care services and adapting the repeat testing procedure would assist in differentiating between women with transient distress and those with enduring distress. Matthey and Ross-Hamid (2012) recommend the repeat testing procedure be applied to other self-report anxiety measures. Overall, these studies support the repeat testing procedure because of the overestimation of the true rates of Postpartum Depression when only a single administration is used. This study aimed to assess transient and enduring distress rates using Cox and Holden’s (2003) recommendation of reassessing women after two weeks.
3.4 The experience of PPD

Bhopal (1998, p. 485) states ‘Many of the studies which exist on motherhood have been ethnocentric and falsely universalistic. Motherhood has often been examined from a white, western perspective, neglecting divisions based upon “race” and ethnicity’. Bhopal argues that it is probable that women from different ethnic groups may have different perceptions and experiences of motherhood. Giving birth and having a child are profound emotional experiences to all mothers; however, many women are vulnerable to emotional difficulties after childbirth. The perception of the childbirth experience is influenced by culture (Spector, 2000), and religious belief provides a perspective on the meaning of life experiences. Researchers argue that PPD is more prevalent in women who do not expect the reality of motherhood; whose perception is focused on the perfect pregnancy, delivery and infant (Churchill & Davis, 2010). This can be simply applied for the first-time mother because she does not have previous experience from which to build realistic expectations for her new transitional role. Motherhood is very demanding and requires a lot of dedication (Logsdon et al., 2006).

Beck (2002) conducted a meta-synthesis of 18 qualitative studies of PPD. She identified four overarching themes of PPD: 1) incongruity between expectations and reality of motherhood, 2) spiralling downward, 3) pervasive loss and 4) making gains. These results suggest that women found the reality of motherhood very different from what they expected, and as a result they believed they had failed to fulfil their expectations as a ‘perfect mother’ (Berggren-Clive, 1998). Women felt despair and sadness, which was the key to the start of their Depression, and this turned into feeling inadequate as a mother, and feelings of guilt as they could not fulfil their social role. Feelings of inadequacy were also caused by hiding their fear of being labelled as a ‘bad mother’, and therefore these mothers become isolated in order to conceal their experiences. Beck (2002) argues that cultural expectations of motherhood have an influence on the gap between reality and expectations. High cultural expectations of motherhood would create negative effects on mothers. Hall (2006) interviewed ten women who were diagnosed with PPD, and unmet expectations of motherhood were attributed to feeling depressed.

Bilszta and colleagues (2010) conducted a qualitative study which aimed to explore the experiences of women with PPD. The study found women’s expectations were not
realistic and they struggled with the transition to becoming a mother and full-time carer of a baby; and the loss of their life before giving birth was the major reason for PPD.

The majority of studies identified loss of control related to mothers’ lives as being linked to the development of PPD. Women described how they were struggling with the loss of life as it used to be before the baby was born and they felt they had lost control over their lives. Many women had very high expectations of themselves, were very proud, and felt significant guilt at not being able to cope, failing at parenting or blamed themselves when not able to live up to their own expectations or those of others.

Similarly, Coates and colleagues (2014) conducted a qualitative study of 17 women who experienced PPD in the first year after childbirth. Women stated that the period after childbirth did not meet their expectations. They spoke of feeling removed from the life they had before they had a baby, because of the baby’s need for full-time care. Their difficult experiences of birth still affected them and they felt guilty that they hadn’t had a perfect birth. Stigma was a major barrier for women to acknowledge their depressive symptoms, as they did not want to be labelled as having Depression; fear of stigma was therefore a barrier to seeking professional help.

Highet and colleagues (2014) interviewed 28 women who had been diagnosed with PPD and/or anxiety. They spoke of their symptoms, which lead to difficult experiences of motherhood, which was expressed as ‘loss and frustration’. Women said the practical difficulties of having a baby was a reason for their dissatisfaction with the changes after having a baby and lead to the development of the symptoms. They talked about the common perception of PPD that a woman would hurt or harm her baby, which caused stigma related to PPD, and that therefore women do not seek professional help.

Research from non-Western societies has demonstrated how culture influences women’s experience of PPD. Rodrigues and colleagues (2003) conducted an in-depth interview of 39 Indian mothers, in which 19 women were experiencing PPD. Women with PPD reported pain and aches as common symptoms for PPD, and lack of support as a contributing factor for their Depression. They also spoke of poor marital relationships, the effect of the sex of the baby and financial difficulties as the main problems affecting them. In Hong Kong, Chan and Levy (2004) interviewed 35 mothers and found women spoke of feeling trapped in the situation of PPD, ambivalence about
the infant, the social role of being controlled by in-laws and having an uncaring spouse. Similarly, Wittkowski and colleagues (2011) carried out a qualitative study among South Asian mothers in the UK, who experienced PPD, based on their EPDS score (12 or more). The study found some women did not use the word ‘Depression’ to explain their experiences. Cultural and religious factors played a role in whether some women would seek help. Some women believed that their experiences were the result of evil and it would be inappropriate to talk about it.

Little is known of the way Arabic women conceptualise or experience PPD. Nahas and Amasheh (1999) interviewed 22 Jordanian women who were diagnosed with PPD and lived in Australia, to understand their experiences of PPD. Women stated that their feelings of loneliness and the lack of family support were the contributing factors to their Depression. Another qualitative study was conducted by Nahas, Hillege and Amasheh (1999), to explore the lived experiences of PPD among Middle Eastern women living in Australia. Women had a lack of knowledge about PPD and available support services. They did not acknowledge their depressive symptoms as they were afraid of being labelled as a bad mother and acknowledgment of symptoms was a sign of failure. Di Ciano and colleagues (2010) conducted a qualitative study with seven Iraqi Arabic speaking mothers living in Australia. The women described feeling lonely and isolated and having a lack of practical and emotional support as the main reasons for their PPD. Iraqi cultural expectations of motherhood had also lead to feelings of Depression as the women wanted to adhere to cultural traditions after childbirth but this was difficult where there was no family support.

Qualitative studies that focus on women’s experiences and conceptualisation of PPD not based on diagnostic criteria must also be addressed. Qualitative research provides a deep understanding of Postpartum Depression during the transition to motherhood. No study could be found that explores the conceptualisation of PPD in women in Saudi Arabia. To contribute to this knowledge, this study aims to understand the conceptualisation of PPD in women in Saudi Arabia.
3.4.1 Measuring the experience of motherhood

There are different self-report measures have been developed to measure the experience of motherhood, including the Experience of Motherhood Questionnaire, (EMQ; Astburya, 1994), and Being a Mother-13 (BaM-13; Matthey, 2011). BaM-13 is designated to assess the ‘wider domain of the woman’s experience of motherhood’ rather than just assess a postpartum mood disorder. Matthey argues that it would be mistaken to believe that low mood as assessed on the EPDS reflects dissatisfaction with motherhood. EPDS includes specific symptoms of Depression and therefore it aims to assess dissatisfaction with a mother’s role during the postpartum period.

The scale allows the assessment of women with newborns, infants and toddlers up to three or four years of age. In addition, it assesses women’s experience over the previous two to three weeks. BaM-13 was developed as a brief instrument to understand many aspects of women’s perception of the role of the motherhood.

As discussed previously, many qualitative studies have demonstrated that a woman’s experiences after childbirth are related to her relationship with her child; her feeling of support and her social network; her feeling of confidence; the loss of previous life; body fatigue; and breastfeeding difficulties and feeding experience. BaM-13 measures a woman’s satisfaction with many of these motherhood experiences to give an indication of the degree to which the woman is enjoying, or feeling content in, her role as a mother. The domains covered by the BaM-13 scale consist of social isolation, regret, sense of confidence, relationship with the child, satisfaction with support, coping and guilt. The author did not include quality of sleep for the mother and the baby, the feeding experience, and employment issues.

This scale has been validated in English-speaking women in Australia and a cut-off score of 9 or more on the total scale of 39 has been recommended for screening women who have high levels of distress. Matthey recommends that the scale is better used for clinical investigation for each item, and that any score of 2 or 3 should be further investigated and may provide a clear line of possible intervention for the mother. Two studies have utilized BaM-13 to assess women’s satisfaction with the role of motherhood in longitudinal studies (Kemp et al., 2011) and in cross-sectional studies (Henshaw, Fried, Teeters, & Siskind, 2014). However, this scale has not been translated.
or validated into Arabic or used with Arabic women. In this PhD study, BaM-13 has been translated into Arabic and used with Arabic women for the first time.

The implications of using this scale are significant, especially in understanding the true and difficult experience of motherhood. The BaM-13 scale asks questions that are related to a mother’s experience, which is an important contribution to the postnatal field as it may help health care providers to engage women in discussions about this difficult transition or experience of motherhood.

3.5 Understanding of the role of culture in the conceptualisation of PPD

Depression is a common mental illness across cultures (etic approach); however, the presentation of depressive symptoms varies from culture to culture (emic approach). Therefore, the two approaches have been combined to provide a clear understanding of people’s response to a particular illness. Kleinman and Good (2004) note that all individuals experience the feeling of Depression; however, ‘the way in which Depression is confronted, discussed, and managed varies among social worlds, and cultural meanings and practices shape its course’ (p. 951). Kleinman and Good believe that culture influences how people experience their symptoms, use idioms to describe them, and make decisions about where to seek help and treatment. Culture may influence how people perceive their psychotic symptoms. The treatment of illness and different help-seeking behaviours are bound to specific cultural systems. For example, postpartum Depression in some cultures is viewed as a normal reaction to stress rather than as an illness, and women do not see a role for health professionals (McIntosh, 1993).

3.5.1 The emic approach

Cultural understandings of Depression have influenced the way in which patients with Depression in different cultures react to treatment (Jenkins, Kleinman, & Good, 1991). Depressive patients in China have been reported to continue seeking help for Depression after being given anti-depressant medication. This help-seeking ends only when the underlying problems related to work and family have been solved (Kleinman, 1986). Therefore, a consideration of patient and provider illness explanatory models can be invaluable for the planning of acceptable treatment interventions in a particular culture. In this thesis, women were interviewed drawing on the explanatory interview
model, which may be a useful way to understand how women in Saudi Arabia conceptualise PPD, and therefore seek help.

**Kleiman’s Explanatory models of illness theory**

Arthur Kleinman (1980) provided a comprehensive overview of the explanatory model of illness and its implications for research. The explanatory model (EM) conceptual framework provides a method for investigators to explore emic beliefs about illness and health care (Kleinman, 1980). Kleinman describes the EM as ‘notions about an episode of sickness and its treatment that are employed by all those engaged in the clinical process’ (p. 105), formed by the various cultural experiences, expectations and symptoms that are associated with a specific illness. The model aims to adapt patients’ understanding or perception of 1) the cause of the illness, 2) timing and mode of onset of symptoms, 3) pathophysiological processes involved in that illness, 4) the severity of the illness as well as the natural history, and 5) the appropriate treatment for the illness (Kleinman, 1980; Helman, 2007). People apply content from their cultural reality to define each of these five categories in a creative process that is motivated by the need to understand an illness. Connections among the five concepts form a frame network, guided by symbolic reality.

Explanatory models of illness are basically schematics of these frame networks. As described by Kleinman, these tools presented a theoretical basis for comparative studies to be carried out across cultures as well as within health care systems. Kleinman designated three sectors present within most pluralist systems: the popular, professional, and folk sectors (More details are provided in the methodological framework, section 5.3.2). Each sector includes of its own social reality through which individuals can formulate and modify explanatory models pertaining to particular illness. The popular, professional, and folk sectors were important in the movement to recognize biomedicine as an ethnocentric cultural perspective (Kleinman 1995).

Kleinman provides a framework of the ‘explanatory model’ of psychiatric illness for examining health care relationships and transactions, how different sectors of the health system construct different clinical realities from the same illness experience. The conceptual framework allows the description of illness aetiology, symptoms, pathophysiology, and course of illness, and treatment options.
Vignettes and explanatory models

Cross-cultural EMs of Depression have been investigated widely through the use of vignettes (Dejman et al., 2010; Sulaiman, Bhugra, & de Silva, 2001). Vignettes can be described as stories about persons or situations, which refer to perceptions, beliefs and attitudes. Hughes and Huby (2002, p. 37) define vignettes as referring to ‘text, images or other forms of stimuli which research participants are asked to respond to’. Vignettes are developed from a variety of sources, including previous research findings (Carlson, 1996) or are based on real-life stories (Rahman, 1996). Participants are asked to answer these stories with what they would do in a particular situation or how they think a third person would react. The context of a vignette provides participants with an opportunity to discuss concerns arising from the story from a third-person perspective and therefore it is considered as less threatening.

An investigator, for example, could advocate a discussion of a participant’s personal experience after a vignette-based discussion, or participants themselves might even compare their own experiences with those in the story presented in a vignette (Hughes, 1998; Hughes & Huby, 2002). Findings from studies using vignettes report this approach as a useful pathway to selecting mental health service priorities according to prevalence, community perceptions and availability of appropriate treatments (Wig et al., 1980). Hence, in this study vignettes were used as a trigger for eliciting participant’s perceptions of how they conceptualise PPD.

3.6 Accessibility of primary health care

Accessibility has been one of the main issues in primary health care (Gogorcena, Castillo, Casajuana, & Jové, 1992). Accessibility to health care services results from the balance between the supply of health services and the demands of health consumers (health seeking behaviour). It is a complex, multidimensional concept (Anderson, 1995). Whitehead (1990) has defined access as the chance at which clients or communities are able to use services in proportion to their need. It is further emphasised that access as a notion must be according to need and the timely use of health care services (Campell, Roland, & Buetow, 2000). Different definitions have been given in the literature in different ways; however, they have focused on consumer perception (satisfaction), and the geographical location of the service, economic conditions and cultural sensitivity.
Accessibility to health care has been used interchangeably with availability, affordability, acceptability and appropriateness of services (WHO, 2008b). It can be seen from different perspectives related to different dimensions and factors, such as physical distance, travel time, transportation cost, waiting time and language, which define barriers to access. These barriers prevent consumers of certain socioeconomic status reaching and using PHC services.

The five dimensions of accessibility are approachability, acceptability, availability, affordability, and appropriateness (Levesque, Harris, & Russell, 2013). Approachability means that people can reach services and services are more approachable to people. Availability of PHC services depends on having an available workforce, the distance and the time required for travel by the patient to the service, the waiting time to get an appointment, and the time spent waiting at the service, all of which affect patient satisfaction. Affordability includes all costs to the consumer to access PHC services. This comprises the cost of attending the services, as well as associated costs such as transportation, time off work and downstream costs, such as costs of investigations, prescription drugs and specialist referrals. Appropriateness of PHC services deals with the social and cultural needs of consumers, which has an important impact on how people consume services. Acceptability reflects the level of PHC service and appropriateness of use of a service.

The postpartum care (PPC) visit is considered important for the mother’s physical and psychosocial health (Blenning & Paladine, 2005). It has been recommended that women seek postpartum care between four and six weeks after childbirth (Hirst & Moutier, 2010). The World Health Organization suggests that although there is no official definition, the traditional six-week period is consistent with the 40-day period commonly observed in many countries (WHO, 1998). WHO also proposes a schedule of postpartum care for the mother and child. There are four general areas (i.e., medical complications, breastfeeding, Postpartum Depression, and sexuality and contraception) that are necessary to the health of the mother and the baby (WHO, 1998). Despite the advantages of the PPC visit, there are many access barriers to care (Pistella & Synkewecz, 1999).
3.6.1 Barriers and facilitators to accessing health services

There are a number of barriers that prevent women from accessing appropriate treatment and support. An important reason why PPD is often undetected is that women are often reluctant to seek professional help (McGarry, Kim, Sheng, Egger, & Baksh, 2009). A review of 50 studies by Dennis and Chung-Lee (2006) revealed that women from some cultures were often reluctant to obtain professional help in the postnatal period, and to disclose their emotional problems. They reported not knowing where to obtain help or being unaware of available treatment. The majority of women who have experienced PPD are from cultural backgrounds other than Western cultures tend not to seek help (Boucher, 2010). Most women do not know where to seek help, although family physicians are the primary pathway to access health services (Boucher, 2010). Dennis (2004) has claimed that PPD leads women to increase their use of medical services in order to seek help from health care professionals. Even though mothers have various interactions with health professionals in the postpartum period, they are often unwilling to disclose their psychological problems. Women often also lack the knowledge to recognise or identify the symptoms of Depression and therefore fail to seek help for the problem (Holopainen, 2002).

Access to health care has been reported as a barrier for some mothers to seek help (Amankwaa, 2003). A number of factors, within both the health care delivery system and the perceptions of potential consumers, affect accessibility and utilisation of services and have been identified in the international literature. A key factor is the reluctance of health professionals to acknowledge and respond to the mother’s emotional and practical needs.

3.6.1.1 Cultural influences

The literature has identified some barriers to accessing health care after childbirth that are culturally determined. Cox (1999) argues that culture is taken into account when understanding the prevalence and management of PPD. Women from some cultural backgrounds are reluctant to seek professional help, particularly for mental health-related issues. For some cultures, the value of informal social support within their families is highly considered and women would seek help from family members or friends for emotional problems rather than from professionals. Nahas and Amasheh
(1999) found that, among Jordanian women, the family is the reference for assistance and also mediates between the woman and the outside world. However, Dennis and colleagues (2004) argue that family members do not understand PPD and therefore they are unable to provide the ultimate support, or advocate for appropriate help-seeking. Research has shown cultural factors may have a significant impact on Postpartum Depression (Oates et al., 2004); however, such research is still limited (Bina, 2008).

The stigma related to either having a mental illness or seeking the help of mental health services, is a worldwide phenomenon, and is consistently cited (WHO, 2003; Corrigan & Watson, 2002; Watson, Corrigan, Larson, & Sells, 2007; Livingston & Boyd, 2010) as one of the most significant barriers to accessing mental health services in different populations and communities. Mental illness is heavily stigmatised in many cultures. Studies have documented that shame, stigma, and fear of being labelled as ‘mentally ill’ or ‘mad’ contribute to help-seeking behaviours and therefore access to health services (Rodrigues et al., 2003; Chan et al., 2002; Edwards & Timmons, 2005). Women in Arab countries experience stigma that is attached to mental health services. Ghubash & Eapen (2009) identify the stigma attached to mental health services as the main reason for Arabs not consulting a mental health specialist for mental health symptoms. Moreover, Arab societies have dominant patriarchal norms that would have a negative attitude toward women’s utilisation of mental health services (Al-Krenawi, Graham, Dean, & Eltaiba, 2004).

3.6.1.2 Gender roles as a barrier

It has been noted that Arab Middle Eastern populations have common forms of familial patriarchy and norms of motherhood. Yount and Smith (2012) in their review of gender and PPD in Arab Middle Eastern women state that ‘many Arab patriarchal kin relationships were importantly associated with PPD in these samples’ (p. 191). Most studies have reported specific findings such as marital problems or poor support from the husband (Abou-Saleh & Ghubash, 1997; Agoub et al., 2005; Masmoudi et al., 2008; Amr & Balaha, 2010). Problems with polygamy have also been reported in the Gulf area as being associated with PPD (Abou-Saleh & Ghubash, 1997; Green et al., 2006; Hamdan & Tamim, 2011). Such social and cultural environments affect women’s access to or use of mental health services (Morrow & Chappell, 1999). O’Mahony and Donnelly (2013) carried out a study of 30 immigrant and refugee women in Canada, in
which six women were from the Middle East, to explore how cultural, social, political, historical and economic factors intersect with ethnic background, gender and class to influence the ways in which women seek help for PPD. A participant in their study spoke of how the culturally expected reproductive role of women as carers of children and the house restricted their mobility and prevented them from pursuing further education. Such gendered attitudes in some cultures prevent women from accessing health care and, as noted by the participants in O’Mahony and O’Donnelly’s (2013) study, contribute to PPD. The authors clearly confirm that culturally and socially determined gender roles affect how women cope with PPD and the ways in which they seek help. However, there is very little research on the barriers to accessing health services for PPD in Middle Eastern women, especially women in Saudi Arabia.

3.6.2 Facilitators to accessing health services

It is evident that there are many facilitators for women, which are related to mothers, family and friends, and health care professionals. The level of education, relationship with health care professionals, and availability of information about PPD and health services during pregnancy enable mothers to seek help. Knipscheer and Kleber’s (2004) study among Mediterranean migrants in the Netherlands, found socioeconomic factors such as age, level of education and length of residence in the country influenced people’s behaviour and attitude to seeking help, rather than their ethnic background. Another study, among Japanese mothers, found that information in regard to PPD and health services motivated them to seek help and treatment from health professionals earlier (McIntosh, 1993). Women with minor mental illness prefer to seek help from their friends rather than health care professionals. Nahas and Amasheh (1999) found that among 22 Jordanian women, most reported the family as the reference for help. Sonuga-Barke and colleagues (1998) argue that the traditional extended family helped mothers to avoid Distress and Depression and had a significant impact on the mother’s mental health. Health care professionals play an important role in motivating or discouraging mothers to seek help. A good relationship between the mother and health professionals has a positive influence on mothers accepting treatment (Thome, 2003).
3.7 Summary

This chapter has presented a review of the PPD and Anxiety literature as it relates to the content of this study. Findings from the research that assessed the prevalence rates of PPD and Anxiety in Arabic and Western countries were reported and the factors that have been proven to contribute to PPD and Anxiety were also outlined. Given that it is important to screen women in the postpartum period, this review briefly outlined some measures of PPD, Anxiety or general distress. The literature review also highlighted the key findings of the experience of motherhood and outlined barriers and facilitators to accessing health services. The chapter reflects the paucity of information on PPD and Anxiety, and accessibility to health services research on Arabic women, in particular women in Saudi Arabia.

PPD in Saudi Arabia has one of the highest prevalence rates of PPD in the Middle East region and there are no mental health screening services implemented in postpartum care visits. Moreover, the EPDS has been validated in many countries, including Arabic countries, but none of these studies was among women in Saudi Arabia. None of the studies specifically explored emic conceptualisations of PPD or investigated participants’ EMs. Moreover, the literature review failed to identify any studies focusing on the barriers and facilitators for women accessing mental health services in Saudi Arabia. This study will address these gaps.

3.8 Addressing the gaps

This specific area of research on postpartum distress has not been addressed in Saudi Arabia and the area has been under-researched in the Middle East region generally. This chapter has outlined several limitations and gaps in the PPD literature that this study aims to address. These include:

- The usual method of measuring the prevalence of PDD internationally relies on DSM criteria, using a diagnostic interview or a high score on a self-report measure such as the EPDS or the GHQ. This PhD research utilised:

  - a probe question that has only been used once before (antenatally) globally, to explore the validity of DSM criteria for the postnatal phase
- a repeat administration of the EPDS to differentiate transient and enduring distress; again, this has been done before antenatally and postnatally in Western countries
- different mood measures to explore the participant’s overlap with the usual ways of screening for postnatal emotional health difficulties. These have not yet been used with Arabic women.

- The study explores the facilitators and barriers for Saudi women to access primary mental health services, which has not been examined before in Saudi Arabia.
Chapter 4
Quantitative study

4.1 Introduction

This chapter describes the quantitative phase of the study. It is divided into six sections: sections 4.1 and 4.2 present the introduction and the research questions related to the chapter. In Section 4.3, the methods used, study design, participants, sampling procedure, sample size, measures, ethical considerations, and the research process are described. Section 4.4 outlines the quantitative findings according to the research questions and discussion of the findings in relation to the available literature, as well as a chapter summary.

4.2 The research questions

1. **What is the valid cut-off score for EPDS in Arabic-speaking women living in Saudi Arabia?**

   Against the diagnosis of Depression (Major and Minor) or Anxiety (GAD, Panic Disorder, OCD, PTSD, Social Phobia and Agoraphobia) disorders.

2. **What is the prevalence of Postpartum Distress in Makkah, Saudi Arabia?**

   A consideration of different ways of measuring includes:
   - 2.1 DSM diagnoses of Depression and Anxiety, using ‘usual criteria’ and a woman’s attribution of symptom relevance criteria
   - 2.2 different self-report mood scales (EPDS; Faces Scales for happiness and Anxiety; MGMQ)

3. **How do these different measures compare in detecting women who have mood difficulties?**

4. **What are transient and enduring distress rates?**

5. **What is the validation of BaM-13 in Arabic-speaking women living in Saudi Arabia?**
4.3 Methods

4.3.1 Study design

The study employs a quasi-longitudinal design, examining the prevalence of Postpartum Distress, the valid cut-off score for EPDS and BaM-13 and the performance of different self-report measures, as well as exploring a repeat testing of some measures a few weeks later (Time 2).

Women were administered the Demographic, the EPDS, the MGMQ, the Faces Scale of happiness and Anxiety and the BaM-13 at the first appointment at the vaccination clinic (Time 1). At Time 2, the same measures used at Time 1 were used and the MINI diagnostic interview was conducted by telephone within two weeks of administration of the first set of measures.

This study was undertaken in Makkah city, the holiest city for Muslims worldwide. It is a major city in the western region of Saudi Arabia and the holy mosque is located in the centre of the city. Every year, millions of pilgrims visit Makkah for Islamic rituals. Therefore, the population varies widely in socioeconomic, cultural and educational background. It has a population of 1.7 million, divided into 60 distinct areas, with 82 PHC centres (MoH, 2013). PHC centres are determined by residential neighbourhood. Centres used in this study were selected based on provision of BCG vaccinations.

4.3.2 Sampling procedure

Three primary health centres in Makkah city were selected: Al-Adel, Jrwal and Al-Kykiah, based on their provision of BCG vaccination services in different socioeconomic regions of the city. Google Maps (2015) represents the location of the three Primary health care centres in Makkah city (see Figure 4.1). The three selected centres are the only primary health care centres that provide BCG vaccinations for the whole city. The BCG vaccination clinics at the three primary health care centres are held once a week. All the clinics were attended by the researcher for recruitment of women for the study, during the period from July to December 2013. During the recruitment period, the 811 women who attended the clinics with their children were invited to participate in the study. Of these, 263 women were excluded from the study because they were not the actual mothers or the mothers were under 18 years of age (as
ethical approval for the study was based on data collection with adults). The remaining 548 women were asked to participate in the study. Of these, 354 accepted (uptake rate: 65%) at Time 1 of this study. At the two-week follow-up phone interview, 185 out of the 354 women completed the second interview. Despite at least five repeated attempts to contact them via the telephone, 169 women (48%) could not be reached and therefore had to be excluded from the study.

Figure 4.1: Map of Makkah city showing the location of the three selected centres (from google maps)

4.3.3 Study population

The study population was Arabic-speaking women aged 18 and over who had given birth in the previous week to 12 weeks, and who were attending one of three primary health care centres (Al-Adel, Jrwal and Al-Kykiah) in Makkah, Saudi Arabia for the BCG vaccination. The BCG vaccination is a routine vaccination given to all newborn babies. This strategy was chosen as Saudi Arabia has 99% BCG immunisation coverage
among one-year-olds through primary health care (WHO, 2013). The period of 0–12 weeks postpartum was chosen based on previous research as previously discussed in the literature review (e.g. Gjerdingen et al., 2011; Milgrom et al., 1999). Participant characteristics are presented in Section 4.5.1.

4.3.4 Sample size

The research question on the prevalence of postnatal distress

The sample size required to determine the prevalence: With a population in Saudi Arabia of around 6,000,000 women of child-bearing age (CDSI, 2007), and estimating the prevalence of PPD to be around 20% (Ghubash & Abu-salesh, 1997; Al-Johani, 2007), 246 participants were required to gain a 95% confidence that the obtained rate was within ±5% (Stat Pac, 1997). The estimated dropout rate between Time 1 and Time 2 was about 20%. Thus, 300 women were required to participate in the study.

Other research questions

To ensure that the sample size was large enough to determine validity on the EPDS, given we expected 20% of participants would test positive for Depression and/or Anxiety based upon previous research (e.g. Andersson, Sundström-Poromaa, Wulff, Åström, & Bixo, 2006; Amr & Balaha, 2010; Reck et al., 2008), the expected sample size of around 240 at Time 2 should have yielded around 48 cases, which is substantially larger than some other studies exploring the validation of the EPDS (e.g. ten cases in Cox et al., 1987; nine participants in Boyce et al., 1993 and 13 participants in Ghubash et al., 1997). The estimated sample size is considered sufficient to also answer the research question on the validity of BaM-13.

To answer the Transient vs Enduring Distress question, given that previous research reported the prevalence rate of PPD in Saudi Arabia was 20% and the estimated sample size was calculated around 240 women, therefore 48 women were expected to score high on the EPDS at Time 1. The expected dropout rates between Times 1 and 2 could be around 20%, and it could be that those women who scored high at Time 1 might drop out at a higher rate at Time 2 than low scorers. Therefore, 30 to 40 women were expected to score high at Time 1 and also provide data at Time 2. This is a similar
sample size to that reported in the one other study designed to look at this question, which had data on 32 women (Matthey & Ross-Hamid, 2012). It is acknowledged, however, that other studies investigating other perinatal aspects, but which also provided sufficient information on this question, have had far larger sample sizes (e.g. Wickberg & Hwang, 1996: n=1655; Ballestrem et al., 2005: n=772).

4.3.5 Recruitment

Participants for the study were recruited by advertisement on posters placed in strategic locations in the PHC clinics to encourage women to participate. Doctors at well-baby clinics handed out the flyer to eligible women and informed them about the study (see Appendix 2). Flyers with information on the study were handed to women who brought their children for BCG vaccinations. Nurses and clerical staff at the vaccination clinics handed out these flyers and invited those who met the inclusion criteria to participate. Together with the flyers, women were handed the measures by the clinic staff. The researcher explained to them the purpose of the measures and was available in case women had any questions or concerns. A box was provided in which women were asked to place the completed questionnaires.

4.3.6 Measures

4.3.6.1 Demographic questionnaire

A questionnaire was created for the study to record the background demographic information detailed below.

- Age in years and age of their infant in weeks or months.
- Ethnic background: whether or not they were Saudi, and their ethnic background in five options: tribal, Asian, Indian, African or other.
- The number of their children.
- The mode of delivery, where women were asked to select one from the following options: vaginal delivery, emergency caesarean delivery, elective caesarean delivery or other.
Education level: asking women to note the highest level of basic education completed and, if they had completed any further education, to describe the level attained.

Postpartum place of stay: where they had stayed during the postpartum period, and examples were provided such as at their homes or at their parents’ home.

Data on practical and emotional support measured by asking the women if they had received enough practical or emotional support from their families or friends and, if the answer was yes, they were asked to note who was providing the support.

For employment, women were asked if they had a job or not; if the answer was yes, they were also asked if they had received paid maternity leave and for how long.

4.3.6.2 The Mini-International Neuropsychiatric Interview (MINI; Sheehan et al., 1998)

The MINI version 6.0.0 (Sheehan et al., 1998) is a brief, structured diagnostic interview, developed jointly by psychiatrists and clinicians in the US and Europe, consisting of modules designed to generate diagnosis for the major axis I psychiatric disorders in the DSM-IV and ICD-10 (see Appendix 5 for English and Arabic versions). It is fully structured to allow administration by lay interviewers who have been trained.

Each module in the MINI has one or two screening questions of the core symptoms to rule out the diagnosis when individuals respond negatively to the screening questions. If the individuals respond positively to the screening questions, non-core symptom questions are asked. Questions are responded to either ‘yes’ or ‘no’. Therefore, the diagnosis is based on DSM criteria, based on the number of symptoms. The MINI is considered to be a short, structured interview, which should take around 21 minutes to administer (Lecrubier et al., 1997).

The original version of the MINI has demonstrated good psychometric properties. It has been compared to structured diagnostic interviews such as the SCID and the CIDI (Lecrubier et al., 1997; Sheehan et al., 1997; Sheehan et al., 1998). It has an excellent agreement with the SCID (Kappa 0.84) and CIDI (Kappa 0.73) for major Depression. The validity of the MINI was tested against the SCID, which found sensitivity 96%.
specificity 88%, and PPV 0.87%. For the CIDI, similar results were obtained. Inter-rater reliability (Kappa 0.75) and re-test reliability (Kappa more than 0.75) of the MINI was reported as acceptable (Sheehan et al., 1998).

The MINI has been used in many cultures and has been translated into Arabic (Ossman & Al-Radi, 2010). The time duration for administration of the Arabic version of the MINI is approximately 15 minutes. The psychometric properties of the Arabic version have demonstrated promising results. It shows an excellent agreement with the Arabic CIDI (Kappa 0.83). The sensitivity was 83%, with a specificity of 97% and PPV of 83%. Inter-rater reliability and re-test reliability have been reported as excellent (Kappa 0.84 and Kappa 0.93 of MINI respectively) (Sadek, et al., 2002).

The MINI measures depressive mood disorder in the last two weeks and can detect lifetime and current (in the last month) Agoraphobia, Panic disorders, Social Phobia, OCD and PTSD, but not GAD. GAD symptoms have a six-month time frame. The MINI is considered the gold standard in this study. For the purposes of this study, Depression and Anxiety disorders include Panic, Agoraphobia, Social Phobia, Obsessive–Compulsive Disorder, Post-Traumatic Stress Disorder and Generalised Anxiety Disorder. For GAD symptoms, this study used the time frame of ‘since the birth of your baby’ as appropriate for the postpartum period, and because a six-month timeframe could not be followed. For this reason, women meeting the criteria for GAD since the childbirth were diagnosed as having Acute Adjustment Disorder with Anxiety (AADA) (Reck et al., 2008; Matthey et al., 2003). Women were asked to endorse the symptoms of Depression and Anxiety disorders in the MINI and also were asked to specify the onset of their core symptoms.

4.3.6.3 Symptom attribution question
This has been developed by Matthey and Ross-Hamid (2011), to ascertain, from the woman’s perspective, if the symptoms on the MINI are related to mood or worries, or are due to the physical changes of pregnancy. If the woman attributed the symptom just to physical reasons, it was discounted in the determination of the presence of Depression and Anxiety disorders. For the postnatal administration of the MINI, in this study women were asked to endorse the presence of core and non-core Depression
symptoms on the MINI, by asking them ‘Do you think that the symptom is due to the practical demands of having a baby or due to your mood or worries?’ Their responses were coded as either due to ‘Baby’, ‘Mood’, ‘Both’ or ‘Not Sure’. Diagnostic status was then determined if the woman had sufficient symptoms due to her mood (or she endorsed the cause as being ‘Both’ (due to mood or worries and the practical demands of having a baby) as well as the impairment criterion to meet DSM criteria for the disorder. Although the validity of this attribution question has not been reported in the literature, it has been used in this study to explore the impact of the normal physical stresses of parenthood on women’s reports of symptoms ordinarily attributed simply to mood or worries.

The attributional probing question was only asked for symptoms that can be ambiguous or have physical attributions, and was not asked for symptoms where there is no ambiguity. Examples of ambiguous symptoms in DSM-IV-TR Depression criteria: the core symptom Anhedonia (A2); A3a: Significant weight loss or weight gain, or change in appetite; A3b: Difficulty sleeping; A3c: Psychomotor agitation or retardation; A3d: Fatigue or loss of energy; A3f: Diminished ability to think or concentrate, or indecisiveness. Matthey and Ross-Hamid (2011) argue the attribution question should not be asked for the disorders of Social Phobia and OCD, as these do not require the endorsement of potentially ambiguous symptoms (e.g. Social Phobia: excessive fear or embarrassment at being watched, being the focus of attention etc). Unlike the Depression module, none of the core symptoms in Panic, PTSD or GAD were probed for, as these are all clearly mood related (e.g. spells or attacks feeling anxious; a traumatic event; worrying excessively).

4.3.6.4 Faces Scale of Happiness and/or Anxiety

_Description:_ The Faces Scale of Happiness and/or Anxiety is a single item scale with six faces, each face with a verbal description designed for this study (see Appendix 5 for English and Arabic versions). Six facial expressions of happiness and/or Anxiety together were used, ranging from very happy and calm to not happy and very worried and one face has ‘sometimes feels happy and calm and sometimes unhappy and anxious’. There is a brief mood description next to it written in Arabic. Participants are
asked to indicate which face best shows their feelings over the past two to three weeks. It is designed to enable women who are either illiterate or have low education to be able to endorse a picture that represents their mood.

Scale development and rationale: Faces scales have been used for the self-reporting of depressed mood (Lorish & Maisiak, 1986). Although several instruments have been developed to assess mood, it has been suggested that the Faces Scale is an appropriate self-report method for participants with low literacy skills (Lorish & Maisiak, 1986; Gustad, Chaboyer, & Wallis, 2005) or severe cognitive disabilities (Bieri, Reeve, Champion, Addicoat, & Ziegler, 1990; McKinley, Coote, & Stein-Parbury, 2003). McKinley and colleagues (2003) argue that the use of the human face in the scale allows researchers to reliably detect feelings.

Recent data has estimated the literacy rate in Saudi women is 91% (WEF, 2014). Most Arabic studies of women in the postpartum period have reported approximately 5–40% of their sample represents illiterate women (Ghubash & Abu-Saleh, 1997; Chaaya et al., 2002; Agoub et al., 2005; Alasoom & Koura, 2014). Therefore it was speculated that a Faces Scale may be a suitable self-report measure of Depression and/or Anxiety in illiterate or low-educated Saudi women.

4.3.6.5 Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987)
The EPDS is a ten-item self-report scale designed for use in primary care to screen women in the postnatal period for possible Depression (see Appendix 5 for English and Arabic versions). Women are asked to indicate the response that reflects how they have felt over the previous seven days. Each item is scored on a 4-point scale (0–3) and the total score ranges from 0 to 30, with the higher scores indicating severity. The original validation of the EPDS found the optimal cut-off score to be 13 or more, with a sensitivity of 86%, specificity 78%, and PPV 73% for the screening of major and minor Depression (Cox et al., 1987).

The EPDS has been validated in Arabic for postpartum mothers (Ghubash et al., 1997; Matthey & Barnett, 1997; Agoub et al., 2005). The optimal cut-off score has been shown to vary for Arabic women. Matthey and Barnett (1997), on a sample of Arabic women in Australia, found an EPDS cut-off score of 10 or more to be optimum for
screening of major and minor Depression, with a sensitivity 78%, specificity 80% and PPV 29%. Ghubash and colleagues (1997), on a sample of Arabic women in the United Arab Emirates, found an EPDS cut-off score of 10 or more to be optimum for screening of major Depression, with a sensitivity 91%, specificity 84% and PPV 44%. Agoub and colleagues (2005) obtained a sensitivity of 92%, specificity 88%, and a PPV 65% using an EPDS cut-off score of 12 or more for the screening of major and minor Depression on a sample of Arabic women in Morocco.

4.3.6.6 The Matthey Generic Mood Questions (MGMQ; Matthey et al. 2013)
The MGMQ was designed to screen for general distress, whether it is ‘Anxiety’, ‘Depression’ and/or ‘Distress’. It was constructed to screen women or men with any significant emotional difficulty but not for just one mood difficulty (see Appendix 5 for English and Arabic versions). It consists of the question: ‘In the last two weeks have you felt very stressed, anxious or unhappy, or found it difficult to cope, for some of the time?’ The response options are ‘Yes’, ‘Possibly’ and ‘No’. If the response is No, the participant is instructed to stop. If the response is either of the other two options (Yes or Possibly), the participant is asked, ‘For how much of the last two weeks have you felt this way?’ The response options range from ‘one or two days’, ‘three to five days’, ‘about half the time’, ‘more than half the time’ and ‘other’. In addition, participants are asked ‘How bothered are you by these feelings?’ The response options are: I am bothered ‘Not at all’, ‘A little bit’, ‘Moderately’ or ‘A lot’. In addition, participants are asked to write down what has caused them to feel this way. The scale’s principal author reports in Ayers et al. (2015) that the MGMQ may be useful in clinical settings as it contains general questions to be used as a simple screening tool for further follow-up. This measure has been used in English-speaking women and has not been translated or used in Arabic populations.

The sensitivity and validity of the MGMQ have not been evaluated yet; however, Matthey and colleagues (2013) have compared the MGMQ with different measures for Anxiety disorders: the anxiety subscale of Edinburgh Depression Scale (EDS-3A; Cox et al., 1987), Hospital Anxiety and Depression Scale (HADS-A; Zigmond & Snaith, 1983), Pregnancy Related Anxiety Questionnaire (PRAQ-R; Huizink, Mulder, de Medina, Visser, & Buitelaar, 2004) and DSM Anxiety disorders (Sheehan et al., 1998).
The study reported that the MGMQ performs better compared to the other measures when using the overlap approach (the overlap between high scorers on each measure), with it detecting 57%, 80% and 87% of high scorers on the PRAQ-R, DSM Anxiety disorders and HADS-A respectively.

4.3.6.7 Being a Mother Scale-13 (BaM-13; Matthey, 2011)
This scale was developed to assess and understand the experience of motherhood in women from early after childbirth until the child goes to pre-school. There are 13 questions about how women have been feeling over the previous 2–3 weeks (see Appendix 5 for English and Arabic versions). The questions cover the areas of social isolation, regret, sense of confidence, relationship with her child, satisfaction with support, coping and guilt. Each item has four response options: ‘Yes, most or all of the time’; ‘Yes, some of the time’, ‘No, not very often’ and ‘No, rarely or never’, with response scores from 0 to 3 and a total score ranging from 0 to 39. Higher scores indicate less satisfaction with the experience of motherhood. After completion of the questionnaire, respondents are asked to write down what they think has been the cause of them being very stressed, and life being very difficult or unenjoyable. This measure was translated and used in Arabic for the present study.

Matthey’s (2011a) original validation reported on 496 English-speaking women (age of infant range from 1 week to 52 weeks; primiparous (57.3%); tertiary education (37.7%); married or in a de facto relationship (97.9%), and working mothers (54.6%)). The sensitivity of the BaM-13 compared to the mood question (MGMQ), using a cut-off of 9 or more, was 72.5%, specificity 74.4%, and the positive predictive value 34.9%. The area under the curve was reported excellent (0.81).

The BaM-13 has shown an acceptable internal consistency in the Australian sample, with a coefficient alpha of 0.79. Test–retest correlations show moderate stability over a two-week period for 58 women, with r=0.74. The BaM-13 shows evidence of concurrent and discriminant validity with other self-report measures. The BaM-13 was found to reasonably correlate with the EPDS (r=0.64). It also shows evidence of discriminating across clinical groups. It was demonstrated that women who have felt sad, depressed or very anxious for more than half of the previous two weeks had a
higher mean score on the BaM-13 than those who have not felt sad, depressed or very anxious (mean score 12.7 vs 6.0). Similar results have been obtained from baby care mothers, as they endorsed negative responses two to four times higher than community mothers.

4.3.7 Translation of the measures

For the quantitative study, four developed English instruments were used to address the research questions, including the Mini-International Neuropsychiatric Interview (MINI; Sheehan et al., 1998), the Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987), the Matthey Generic Mood Questions (MGMQ; Matthey et al., 2013) and Being a Mother (BaM; Matthey, 2011). This study used the Arabic language for Arabic-speaking participants.

The EPDS and MINI have been translated into Arabic and used in Arabic women (Matthey & Barnett, 1997; Ossman & Al-Radi, 2010). Since the Arabic versions of the EPDS and MINI are available, the instruments were embedded into the final translated version of the questionnaire without further translation.

The MGMQ and BaM-13 are available in the English language. The reason for translating the two measures is because they are not available in the Arabic language (Cha, Kim, & Erlen, 2007; Khalaila, 2013). Thus these two measures were translated into Arabic for use in this current study. Permission was obtained from the author (Matthey, 2011; 2013) for the use of the measures and was required for obtaining translation rights for the Arabic versions (Wild, et al., 2005; Khalaila, 2013).

The Faces Scale of happiness and Anxiety was designed in the English language for the study. The Faces Scale has two separate components in which women are asked to respond to the faces happiness scale and also to the faces Anxiety scale.

The MGMQ, Faces Scale and BaM-13 were adapted and translated according to guidelines that are widely accepted for the successful translation of instruments in cross-cultural research, in order to develop a culturally sensitive instrument (Brislin, 1970, 1986; Westermeyer & Janca, 1997). The measures were translated, back-translated, committee reviewed (including public health academic, mental health specialist and child care experts) and piloted (Brislin, 1970, 1986; Westermeyer & Janca, 1997). A
multiple translation method was used to ensure semantic equivalence, which means the meaning of each item is the same in each culture after language translation (Beck, Bernal, & Froman, 2003).

**Phase 1:** The original English versions were translated at The Centre of English Language Education, Umm Al-Qura University, Makkah, Saudi Arabia. An accredited translator was employed to translate the MGMQ, Faces Scale and BaM-13 into Arabic. A blind back-translation (into English) was then performed by another professional translator.

**Phase 2:** The primary researcher and other Arabic-speaking mental health professionals compared the back-translated version with the original English version, and reviewed the Arabic translation in detail. The translation and the back-translation were compared to the original English version to determine the efficacy of the translation in terms of grammatical sentences, understandable wording and whether it was culturally appropriate. Translated items that demonstrated the closest semantic equivalence were retained. In addition, attention was given to the literacy level of the two measures, in an attempt to ensure that individuals from a wide range of literacy levels would be able to comprehend and complete the measures. Moreover, special care was taken to use Modern Standard Arabic (MSA), which is the ‘formal’ Arabic used in writing, education and administration (Khalaila, 2013), making the translated measure generalisable to all Arabic-speaking countries, as well as all Arabic-speaking immigrant populations.

**4.3.7.1 The pilot phase**

**Objective:** To test the Arabic translation of three measures: the Matthey Generic Mood Questions (MGMQ; Matthey et al., 2013), Being a Mother-13 (BaM-13; Matthey, 2011) and the Faces Scale of happiness and Anxiety.

**Aims:** To assess readability and clarity of questions formulated in the Arabic version and also to test the relevance/applicability of the items.

**Setting:** The pilot phase was conducted in Sydney, Australia, with Saudi women living in Sydney. Sydney was selected for pragmatic reasons, to enable the researcher and
supervisors to access participants, in terms of identifying potential problems in the translated measures before being used in the main study.

*Ethics:* Ethics approval (HREC No. 11317; see Appendix 1.1.2) was granted by the UNSW Ethics committee.

*Recruitment:* All participants were recruited from March to May 2013. The study planned to recruit 40 Saudi women individually through a female Saudi club leader in Sydney, who sent emails to Saudi women living in Sydney inviting them to participate in the pilot study; the individuals were asked to complete the questions related to the measures. A follow-up focus group with those 40 Saudi women was planned to discuss their views about the wording and the concepts.

Unfortunately, despite repeated attempts, only ten Saudi women finally agreed to participate and provide information. As mentioned above, participants for this phase were recruited by the Saudi club leader in accordance with Ethics protocol to ensure an arms-length process in recruiting participants. Although it was proposed that the researcher would explain the study to Saudi women attending the club, so that they could decide if they wanted to participate, this was not permitted by the Ethics Committee. Hence, invitations were sent out by the female Saudi club leader, who was not connected to the research. Interested Saudi women were asked to initiate contact with the researcher if they wished to participate. This recruitment procedure led to a poor uptake rate – only 10 of 55 women invited contacted the researcher. Hence, as the study progressed, snowball sampling was used to improve recruitment. However, even for the snowball sampling, it was the female Saudi club leader who asked interested participants to suggest others who may be interested and willing to participate. But even with this additional sampling strategy the recruitment rate was low for the pilot study.

Two focus group discussion meetings were planned to discuss the women’s answers and reflections about the Arabic translation of the instruments. Two invitation letters were sent to the Saudi leader at different times to invite participants and inform them about the time and place of the focus group meetings. The invitations requested that, if they wished to participate in the study, they needed to confirm their attendance.

Ten women recruited following the above-described protocol agreed to participate in the focus groups; however, only one turned up. Therefore, individual discussions were
undertaken with these ten participants at various locations (at the university or the individual’s home).

Despite the low number of participants, sufficient information was gathered to make adjustments to the measures to ensure they were not just linguistically correct but conceptually correct. Specific wording changes made as a result of this pilot phase are shown in Table 4.1.

**Procedure:** Women were asked to read the Arabic translated measures and comment on two main questions: first, whether the wording was clear; and second, whether the concept was understandable/relevant. Their responses were coded as either ‘Yes’ or ‘No’ (see Appendix 4 for Arabic and English versions). The researcher discussed their answers when they responded ‘No’ to any statement. The decision was made by the supervisor and researcher to change the items if more than 30% of women endorsed ‘No’, the wording/concept is not clear/applicable. On reflection, a lower threshold for required changes could have been adopted, to increase the suitability of the questionnaires to the population. For example, if 4 out of 10 women said ‘No’ the word is not clear or the concept is not applicable to any item; the word or the concept was changed. However, there was one item (question 8 in BaM-13) where three out of 10 women said the wording of the question was not clear, which is below the threshold for the required change. However, all women agreed that the concept of the question was understandable and applicable. Women who endorsed that the wording was not clear were asked about their views. They said the phrase ‘when I needed to’ in the question needed to be more specific to what sort of support is needed. Therefore based on the threshold (4 out of 10) being used, the question remained unchanged.

**Results:** Information from the ten participants is shown in Table 4.1.

**Lessons learned from the pilot phase:** After considering the feedback from each individual consultation, some words in the questions in the three measures were changed (see Table 4.1). For the MGMQ, words were changed in five questions and in three responses. For the BaM-13, the wordings of three questions were changed. The responses remained unchanged. For the Faces Scale, women thought happiness and Anxiety faces should be formed in one scale called happiness and Anxiety instead of having a Faces Scale for happiness and Faces Scale for Anxiety (see Appendix 4).
Women also suggested having an extra face for mixed feelings of happiness and Anxiety, which could occur in the specific period. All three measures were culturally sensitive and the concepts were applicable to women in Saudi Arabia.

Conclusion: Three measures were tested in the pilot phase, including the MGMQ, BaM-13 and the Faces Scale. The purpose of the pilot phase was to assess the readability and clarity of questions in the Arabic translated measures before these were utilized in the main study. Some words were changed to make them more understandable to Arabic women.
Table 4.1: Changes made to the MGMQ, BaM-13 and Faces Scale

<table>
<thead>
<tr>
<th>Measure</th>
<th>Original English wording and original translated Arabic wording</th>
<th>Revised English and Arabic wording</th>
<th>Number</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMQ</td>
<td>Q1a: In the last 2 weeks have you felt very stressed, anxious, or unhappy, or found it difficult to cope for some of the time? Yes; Possibly; No If ‘No’, please stop here and turn to the next page. If ‘Yes’ or ‘Possibly’: 1: خلال الأسبوعين الماضيين هل قد شعرت بالتوتر جدا، حريصة أو غير سعيدة، أو وجدت صعوبة في التكيف لبعض الوقت؟ نعم محتمل لا لو إجابة ‘لا’ الراجات توقف هذا والذهب إلى الصفحة التالية لو الإجابة ‘نعم’ 1a. In the last 2 weeks have you felt stressed, anxiety, or being unhappy, or found it difficult to cope for some of the time? Yes; Possibly; No If ‘No’, please stop here and turn to the next page. If ‘Yes’ or ‘Possibly’: 1: خلال الأسبوعين الماضيين هل قد شعرت بالتوتر جدا، حريصة أو غير سعيدة، أو وجدت صعوبة في التكيف لبعض الوقت؟ نعم محتمل لا لو إجابة ‘لا’ الراجات توقف هذا والذهب إلى الصفحة التالية لو الإجابة ‘نعم’</td>
<td>8 out of 10 women said the wording is not clear</td>
<td>The word ‘very’ does not add significant change if added to ‘stressed’ and most recommend removing it. The translation of ‘anxious’ as adjective seems inappropriate and replaced by ‘anxiety’ as a noun. The word ‘unhappy’ remains unchanged but ‘being unhappy’ is added to make the word unhappy more specific and clear.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q1b: For how much of the last 2 weeks have you felt this way? 1 or 2 days; 3–5 days; about half the time; more than half the time; other</td>
<td>1 or 2 days; 3–5 days; about half the time (one week); more than half the time (more than a week); other</td>
<td>4 out of 10 women said the wording is not clear</td>
<td>The question is clear. However, the time specified in the answers needs to be more specific for options 3 and 4. The two options ‘about half the time’ added in brackets (one week) and ‘more than half the time’ added (more than a week) make the answers more specific and clear.</td>
</tr>
<tr>
<td>Measure</td>
<td>Original English wording and original translated Arabic wording</td>
<td>Revised English and Arabic wording</td>
<td>Number</td>
<td>Rationale</td>
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<tr>
<td>MGMQ</td>
<td>Q1c: How bothered are you by these feelings? I am bothered: Not at all; A little bit; Moderately; A lot</td>
<td>Q1c: Are you bothered by these feelings? I am bothered: No, not at all; A little bit; Moderately; A lot</td>
<td>5 out of 10 women said the wording is not clear.</td>
<td>Translation of ‘how’ makes the questions unclear. How is removed. ‘No, not at all’ instead of ‘not at all’ was added to make it clearer.</td>
</tr>
<tr>
<td></td>
<td>1d. What has caused you to feel this way?</td>
<td>1d. What has caused you to feel this way?</td>
<td>1 out of 10 women said the wording is not clear.</td>
<td>It is clear and applicable.</td>
</tr>
<tr>
<td></td>
<td>2a. How much do you think these feelings have interfered with your ability to do things on a day-to-day basis? They have interfered: Not at all¹ A little bit² Moderately³ A lot⁴</td>
<td>2a. To what extent have these feelings interfered with your ability to do things on a day-to-day basis? They have interfered: No, Not at all¹ A little bit² Moderately³ A lot⁴</td>
<td>6 out of 10 women said the wording is not clear.</td>
<td>The question has changed from ‘how much do you think’ to ‘To what extent’ which make the translated Arabic question clearer. ‘No, not at all’ instead of ‘not at all’ was added to make it clearer.</td>
</tr>
<tr>
<td>Measure</td>
<td>Original English wording and original translated Arabic wording</td>
<td>Revised English and Arabic wording</td>
<td>Number</td>
<td>Rationale</td>
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<tr>
<td>MGMQ</td>
<td>Any comments or further information?</td>
<td>Any comments or further information on what you have been feeling over the past two weeks?</td>
<td>2 out of 10 women said the wording is not clear</td>
<td>Add ‘on what you have been feeling over the past two weeks’ to make the questions more specific.</td>
</tr>
<tr>
<td>BaM-13</td>
<td>1. I have felt confident about looking after my baby/toddler Yes, most or all of the time</td>
<td>2. I have missed the life I had before I became pregnant with this baby/toddler (or for adoptive mothers: before I had this baby/toddler) Yes, most or all of the time</td>
<td>None of 10 women said the concept is not applicable</td>
<td>It is clear and applicable.</td>
</tr>
<tr>
<td></td>
<td>(see Appendix 4 and 5) Yes, some of the time No, not very often No, rarely or never</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. شعرت بثقة وأنا أعر عطلى
نعم، في معظم أو كل الأحيان
نعم، بعض الأحيان
لا، ليس في معظم الأحيان
لا، نادراً أو أبداً

2. أفتقدت حياتي التي كنت أعيشها قبل الحمل بطفلي
أو لآماني بالتبني: قبل هذا التقل
نعم، في معظم أو كل الأحيان
لا، ليس في معظم الأحيان
نعم، بعض الأحيان
لا، نادراً أو أبداً
<table>
<thead>
<tr>
<th>Measure</th>
<th>Original English wording and original translated Arabic wording</th>
<th>Revised English and Arabic wording</th>
<th>Number</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| BaM-13  | **6. I have felt bored**  
No, rarely or never  
No, not very often  
Yes, some of the time  
Yes, most or all of the time | **6**  
**شعرت بالملل**  
لا، نادراً أو أبداً  
لا، ليس في معظم الأحيان  
نعم، بعض الأحيان  
نعم، في معظم أو كل الأحيان | 2 out of 10 | It is clear and applicable. |
|         | **7. I have felt unsupported**  
No, rarely or never  
No, not very often  
Yes, some of the time  
Yes, most or all of the time | **7**  
**شعرت بأني لا يوجد من يدعمني**  
لا، نادراً أو أبداً  
لا، ليس في معظم الأحيان  
نعم، بعض الأحيان  
نعم، في معظم أو كل الأحيان | 2 out of 10 | It is clear and applicable. |
|         | **8. I have felt alright about asking people for help or advice when I needed to**  
Yes, most or all of the time  
Yes, some of the time  
No, not very often  
No, rarely or never | **8**  
**أشعر بارتياح عندما أطلب المساعدة أو النصح من الآخرين**  
كل ما احتاج ذلك  
نعم، في معظم أو كل الأحيان  
نعم، بعض الأحيان  
لا، ليس في معظم الأحيان  
لا، نادراً أو أبداً | 3 out of 10 | After the discussion, clarifications about wording are made to not change the question |
<table>
<thead>
<tr>
<th>Measure</th>
<th>Original English wording and original translated Arabic wording</th>
<th>Revised English and Arabic wording</th>
<th>Number</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>BaM-13</td>
<td>9. I have felt nervous or uneasy around my baby/toddler</td>
<td>None of 10 women said the wording is not clear or the concept is not applicable</td>
<td>None of 10 women said the wording is not clear or the concept is not applicable</td>
<td>It is clear and applicable.</td>
</tr>
<tr>
<td></td>
<td>No, rarely or never</td>
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<td></td>
<td>No, not very often</td>
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<td></td>
<td>Yes, some of the time</td>
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<td></td>
<td>Yes, most or all of the time</td>
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<td><strong>9. شعرت بالاضطراب و عدم الراحة عندما يكون طفلي معي</strong></td>
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<td></td>
<td>لا ، نادرا أو أبدا</td>
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<td></td>
<td>لا ، ليس في معظم الأحيان</td>
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<td></td>
<td>نعم ، بعض الأحيان</td>
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<td></td>
<td>نعم ، في معظم أو كل الأحيان</td>
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<tr>
<td>10.</td>
<td>I have been worried that something would happen to my baby/toddler</td>
<td>2 out of 10 women endorsed the wording is not clear</td>
<td>None of women said the concept is not applicable</td>
<td>It is clear and applicable.</td>
</tr>
<tr>
<td></td>
<td>No, rarely or never</td>
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<tr>
<td></td>
<td>No, not very often</td>
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<td></td>
<td>Yes, some of the time</td>
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<td></td>
<td>Yes, most or all of the time</td>
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<td><strong>10. كنت قلقة أن يحدث شيء ما لطفلني</strong></td>
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<td></td>
<td>لا ، نادرا أو أبدا</td>
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<td></td>
<td>لا ، ليس في معظم الأحيان</td>
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<tr>
<td></td>
<td>نعم ، بعض الأحيان</td>
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<tr>
<td></td>
<td>نعم ، في معظم أو كل الأحيان</td>
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<tr>
<td>11.</td>
<td>I have been annoyed or irritated with my baby/toddler</td>
<td>1 out of 10 women endorsed the wording is not clear</td>
<td>2 out of 10 women said the concept is not applicable</td>
<td>It is clear and applicable.</td>
</tr>
<tr>
<td></td>
<td>No, rarely or never</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>No, not very often</td>
<td></td>
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<tr>
<td></td>
<td>Yes, some of the time</td>
<td></td>
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<tr>
<td></td>
<td>Yes, most or all of the time</td>
<td></td>
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<tr>
<td></td>
<td><strong>11. كنت مزعجة أو متكررة من طفلني</strong></td>
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<tr>
<td></td>
<td>لا ، نادرا أو أبدا</td>
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<td></td>
<td>لا ، ليس في معظم الأحيان</td>
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<td></td>
<td>نعم ، بعض الأحيان</td>
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<td></td>
<td>نعم ، في معظم أو كل الأحيان</td>
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<tr>
<td>Measure</td>
<td>Original English wording and original translated Arabic wording</td>
<td>Revised English and Arabic wording</td>
<td>Number</td>
<td>Rationale</td>
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<tr>
<td>BaM-13</td>
<td>12. I worry I am not as good as other mothers&lt;br&gt;No, rarely or never&lt;br&gt;No, not very often&lt;br&gt;Yes, some of the time&lt;br&gt;Yes, most or all of the time&lt;br&gt;يقلقني شعوري أنني لست أم جيدة كسائر الأمهات&lt;br&gt;لا ، نادرا أو أبدا&lt;br&gt;لا ، ليس في معظم الأحيان&lt;br&gt;نعم ، بعض الأحيان&lt;br&gt;نعم ، في معظم أو كل الأحيان</td>
<td>1 out of 10 women endorsed the wording is not clear&lt;br&gt;It is clear and applicable.</td>
<td>1 out of 10 women endorsed the wording is not clear</td>
<td>None of women said the concept is not applicable</td>
</tr>
<tr>
<td></td>
<td>13. I have felt guilty&lt;br&gt;No, rarely or never&lt;br&gt;No, not very often&lt;br&gt;Yes, some of the time&lt;br&gt;Yes, most or all of the time&lt;br&gt;شعرت بالذنب</td>
<td>1 out of 10 women endorsed the wording is not clear&lt;br&gt;It is clear and applicable.</td>
<td>1 out of 10 women endorsed the wording is not clear</td>
<td>None of women said the concept is not understandable</td>
</tr>
<tr>
<td></td>
<td>If you have found being a mother very stressful, very difficult, or unenjoyable, why do you think this is?</td>
<td>What are the reasons that have made you feel very stressful, very difficult, or unenjoyable as being a mother?</td>
<td>3 out of 10 women said the wording is not clear</td>
<td>The questions changed to be more understandable.</td>
</tr>
<tr>
<td></td>
<td>إذا كنت وجدت كونك أم مجهدة للغاية ، صعب جدا أو غير ممتع. لما كنت تعتقد ذلك؟</td>
<td>ماهي الأسباب التي جعلتك تشعرين بالإجهاد أو التعب أو عدم الاستمتاع كونك أم؟</td>
<td>4 out of 10 women of women said the concept is not understandable</td>
<td></td>
</tr>
<tr>
<td>Measure</td>
<td>Original English wording and original translated Arabic wording</td>
<td>Revised English and Arabic wording</td>
<td>Number</td>
<td>Rationale</td>
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</tr>
<tr>
<td><strong>Happiness</strong></td>
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</tr>
<tr>
<td>1 very happy</td>
<td>1 سعيدة جداً</td>
<td>1 happy and calm</td>
<td>1</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td>2 happy</td>
<td>2 سعيدة</td>
<td>2 happy and calm</td>
<td>2</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td>3 So-so</td>
<td>3 طبيعى</td>
<td>3 So-so</td>
<td>3</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td>4 Unhappy</td>
<td>4 غير سعيدة</td>
<td>4 Unhappy or worried</td>
<td>4</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 very calm</td>
<td>1 ليس قلقاً</td>
<td>1 سعيدة وهادئة</td>
<td>1</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td>2 A little bit worried</td>
<td>2 قلق قليلاً</td>
<td>2 سعيدة وهادئة</td>
<td>2</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td>3 So-so</td>
<td>3 طبيعى</td>
<td>3 So-so</td>
<td>3</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td>4 Worried</td>
<td>4 قلق</td>
<td>4 غير سعيدة أو قلقاً بعض الشئ</td>
<td>4</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td>Measure</td>
<td>Original English wording and original translated Arabic wording</td>
<td>Revised English and Arabic wording</td>
<td>Number</td>
<td>Rationale</td>
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</tr>
<tr>
<td><strong>Faces Scale</strong></td>
<td><strong>Happiness scale</strong> 5 Very unhappy 5 عشيرة جداً</td>
<td>5 Very unhappy or Very worried 5 غير سعيدة جداً</td>
<td>8 out of 10 women suggest to add a mix face</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td></td>
<td><strong>Anxiety scale</strong> 5 Very worried 5 قلق جداً</td>
<td>5 غير سعيدة جدا أو قلق جداً</td>
<td>6 Sometimes feeling happy and calm + other times feeling unhappy and worried</td>
<td>Combine both happiness and anxiety together</td>
</tr>
<tr>
<td></td>
<td>6 Sometimes feeling happy and calm + other times feeling unhappy and worried</td>
<td></td>
<td></td>
<td>Add a new face for changes of mood</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure</th>
<th>Arabic wording</th>
<th>English wording</th>
<th>Number</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faces Scale</strong></td>
<td><strong>Happiness scale</strong> 5 عشيرة جداً</td>
<td>Very unhappy or Very worried</td>
<td>8 out of 10 women suggest to add a mix face</td>
<td>All women said the wording / concept is clear/ understandable</td>
</tr>
<tr>
<td></td>
<td><strong>Anxiety scale</strong> 5 غير سعيدة جداً</td>
<td>Very unhappy or Very worried</td>
<td>6 Sometimes feeling happy and calm + other times feeling unhappy and worried</td>
<td>Combine both happiness and anxiety together</td>
</tr>
<tr>
<td></td>
<td>6 Sometimes feeling happy and calm + other times feeling unhappy and worried</td>
<td></td>
<td></td>
<td>Add a new face for changes of mood</td>
</tr>
</tbody>
</table>

Note: The table includes the original English wording and the original translated Arabic wording, the revised English and Arabic wording, the number of responses, and the rationale for the changes made.
4.3.8 Instrument-order effects

Survey researchers have long known of the importance of questionnaire design on the quality of participants’ responses. The types of the question, the words and sequences have been given much attention in research methodology (Krosnick & Presser, 2010). The order in which questions are placed in a questionnaire may have a significant influence on the research outcome (Weinberger, Darkes, Del Boca, Greenbaum, & Goldman, 2006). Question-order effects exist because the context or conceptual structure associated with the construct which is to be measured influence participants’ responses (McFarland, 1981; Rasinski, Lee, & Krishnamurty, 2012). Therefore, the leading questions provide the context in which the participant answers an item, and changing this context can make a huge difference to the findings (Sigelaman, 1981).

This study evaluated the effect of changing the administrative order of the four self-report measures (EPDS, MGMQ, Faces Scale and BaM-13) on women’s responses. Having four measures means there is an estimated 24 possible permutations (4 x 3 x 2 x 1) in which the measures could be presented. A sample size of 50 women was chosen for each order. This would ensure that a medium effect size (0.5 d) between conditions would be statistically significant at the 95% confidence level with alpha at .05. To obtain sufficient participants (n=50) in each order with 24 permutations, this study would need to recruit 1,200 participants, which is impossible due to the time and resource limitations in doing this PhD; and based on the sample size calculation (300, as discussed in Section 4.3.4: sample size calculation), therefore, the decision had to be made as to which six orders would be used within the 300 participants to be recruited.

It appears to be rare for studies to have examined the instrument-order effects in the perinatal area and no written rules could be found for the order in which instruments should be presented to examine the instrument-order effects. The EPDS (the well-established scale) has a symptoms approach, but the MGMQ and Faces Scale ask about the actual mood by asking direct questions about mood. This study looked at whether the scores on the well-established EPDS were affected by whether the scale was given before or after a direct question measure.
or a scale measuring the experience of motherhood (BaM-13); the order was counterbalanced (see Table 4.2).

Table 4.2: The arrangement of the four measures in each order

<table>
<thead>
<tr>
<th>Orders</th>
<th>Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order 1</td>
<td>EPDS; Faces scale; BaM-13 and MGMQ</td>
</tr>
<tr>
<td>Order 2</td>
<td>EPDS; MGMQ; BaM-13 and Faces scale</td>
</tr>
<tr>
<td>Order 3</td>
<td>BaM-13; EPDS; Faces scale; and MGMQ</td>
</tr>
<tr>
<td>Order 4</td>
<td>BaM-13; MGMQ; EPDS and Faces scale</td>
</tr>
<tr>
<td>Order 5</td>
<td>Faces scale; EPDS; MGMQ and BaM-13</td>
</tr>
<tr>
<td>Order 6</td>
<td>MGMQ; EPDS; Faces scale and BaM-13</td>
</tr>
</tbody>
</table>

4.3.9 Procedure

Data collection was scheduled on weekly BCG immunisation day, when mothers brought their infants to primary health care centres. Women were recruited while waiting for their infant’s vaccination clinic appointment. Each woman was given a booklet designed by the researcher for this study (see Appendix 5). It had an introduction explaining the purpose of the study and telling them that participation was entirely voluntary, and that non-participation would not affect any future service they may receive from the centre. Each booklet contained demographics and the four measures: the EPDS, MGMQ, BaM-13 and Faces Scale. The sequence of the instruments was presented in different orders (see Instrument-order effects, Section 4.3.8). All participants were eligible to be telephoned approximately two weeks later. Mothers were then asked if they still wanted to participate in the study. All women were given a blank copy of the measures, at Time 1, to take home with them, to be completed during the Time 2 phone interview. At the end of the booklet, there was a section for the women to indicate if they were willing for the researcher to call them to be re-assessed in two weeks’ time and/or to participate in in-depth interviews and, if so, to include their contact information. Then, the interviews were arranged according to the preference of the
participants: either face-to-face or over the phone. The in-depth interviews are discussed in detail in the qualitative chapter (see Chapter 5).

Then when contacted at Time 2, those agreeing to do the interview were asked to refer to their blank copies which were then also read out by the interviewer, using the same order as administered at Time 1. This ensured participants understood all the questions, given that many of them have multiple response options, which could be forgotten or confused if the women had to solely rely on the reading of the measures over the phone. If a woman said ‘No, I can’t do the interview now (for whatever reason)’ the researcher arranged an alternative date as suggested by the woman or within one week. Mothers who answered ‘No, I don’t wish to do the interview’ were thanked and were not included at Time 2.

At the phone interview at Time 2, they responded to the same measures used at Time 1, as well as the Mini-International Neuropsychiatric diagnostic screener for Depression and Anxiety disorders, followed by the full Mini-International Neuropsychiatric diagnostic interview, when they endorsed a core symptom for the respective disorders (see Table 4.3 for which measures were administered at Time 1 and Time 2).

### Table 4.3: Summary of the quantitative stage

<table>
<thead>
<tr>
<th>Measures</th>
<th>Time 1 ‘At clinic’</th>
<th>Time 2 ‘Phone interview’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>EPDS</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>MGMQ</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>BaM-13</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Faces Scale</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### 4.3.10 Ethical considerations

The study had ethics approval from the Human Research Ethics Committee (HREC) of the University of New South Wales (UNSW), Sydney, Australia. Additional approval was also obtained from Umm Al-Qura University in Makkah, Saudi Arabia. The pilot study was approved by the UNSW HREC (HREC approval number 11317; see Appendix 1.1.2). Full ethical clearance was granted for the main study (HREC approval number 12559; see Appendix 1.1.3).
ethical clearance was also granted by Umm Al-Qura University (see Appendix 1.2.2) and Ministry of Health (see Appendix 1.2.3) in Makkah, Saudi Arabia.

4.4 Data analysis

4.4.1 Data management

All completed booklets were cross-checked on the day of data collection. Each booklet had a code number which contained a letter of the PHC centre and the number of the questionnaire (e.g. K01 which means Al-Kykiah PHC Centre and booklet no. 1) in order for the researcher to track participants to re-administer the questionnaires after two weeks.

For data entry, a Microsoft Excel database file was created, and was then imported to SPSS (version 22). For the data cleaning process, all data was cleaned using frequency distributions of variables to check for missing or invalid data. Where a box was blank because it was not applicable (e.g. no higher education, so type of education is not applicable), ‘not applicable’ or ‘blank’ was coded as ‘888’.

4.4.2 Variables

Outcome variables

Four self-report measures were used to examine the outcome variables of Postpartum Distress (see Table 4.4). These were the MINI, EPDS, MGMQ and Faces Scale. All these measures were previously discussed in detail in the measures section (4.3.6).

Demographic variables

Different demographic variables pertaining to participants’ demographics, obstetric history, confinement period, social and emotional support and employment were assessed.
Table 4.4: Outcome variables of the study

<table>
<thead>
<tr>
<th>Variable labels</th>
<th>Scale</th>
<th>Range of scores /Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDS</td>
<td>Continuous</td>
<td>0-30</td>
</tr>
<tr>
<td>MGMQ</td>
<td>Categorical</td>
<td>Yes or possibly: not coping</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No – coping OK</td>
</tr>
<tr>
<td>Faces Scale</td>
<td>Categorical</td>
<td>Face 4 or 5: distressed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Face 1, 2, 3 or 6: not distressed</td>
</tr>
<tr>
<td>BaM-13</td>
<td>Continuous</td>
<td>0-39</td>
</tr>
<tr>
<td>MINI Depression</td>
<td>Categorical</td>
<td>Depressed/ not depressed</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Categorical</td>
<td>Anxious/ not anxious</td>
</tr>
</tbody>
</table>

4.4.3 Statistical analysis

The data was analysed using the SPSS version 22.0 (SPSS Inc., Chicago, IL). Socio-demographic characteristics were summarized by descriptive statistics. Frequency and percentages were used for categorical variables, whereas continuous variables were expressed as means ±S.D. Histogram charts were used to check the distribution of scores on each of the scales.

Non-parametric tests were carried out when the data did not meet the assumptions of normality. Chi-square tests were performed to assess the differences between the study samples: those completing all measures at Time 1 and Time 2, and those who did not continue at Time 2.

Chi-square tests were checked for expected frequencies greater than five to ensure sampling adequacy. When expected frequencies were less than five, Fisher’s exact test was performed (Brace, Kemp, & Snelgar, 2000). Chi-square tests on categorical data were performed to assess the level of association. Relevant effect size statistics were also reported where applicable. T-test for proportions was used. Correlations analysis was also used where appropriate (Spearman correlation analysis was carried out when data was not normally distributed).

The reliability and validity of EPDS and BaM-13 was examined. The reliability was measured using test–retest reliability and internal consistency (Cronbach’s
alpha). In this study test-retest reliability was measured using a Spearman correlation coefficient conducted on women who assessed twice with a 14-21 day interval. The internal consistency of the questionnaire was measured using Cronbach’s alpha coefficient and an alpha equal to or greater than 0.70 was considered satisfactory (Hair, Black, Babin, Anderson, & Tatham, 2006). Internal consistency refers to the degree of homogeneity of items measuring the same dimension (Norman & Streiner, 2003).

Factor analysis was assessed using the principal component analysis method. Factor analysis of all items was carried out using varimax rotation, accepting factors with an Eigen value above 1.0. An extraction value of 0.4 for individual items and of 0.5 in total was also considered in determining the factors. The Bartlett’s test and the Kaiser-Meyer-Olkin (KMO) measure were considered in measuring sampling adequacy of the data.

The validity data of the EPDS and BaM-13 was analysed using MedCalc for Windows, version 12.5 (MedCalc Software, Ostend, Belgium). The validity was tested by calculating sensitivity, specificity and positive and negative predictive values (PPV and NPV, respectively) at several cut-off points, using receiver operating characteristic (ROC). ROC curve analyses were carried out to assess the global performance of the scale for detecting Depression (Major or Minor) or Anxiety disorders as a diagnosis and also for Major Depression specifically. ROC curves allow an exploration of the entire range of sensitivities and specificities at each possible cut-off score.

4.4.4 Statistical considerations

1 While the questionnaires were administered at both T1 and T2 (approximately a two-week interval), most of the correlation and concordance analyses between the measures was calculated using Time 1 data that had a larger sample size (n=354). The exception was for those analyses using the diagnostic disorder classification (which was only administered at T2), and which used T2 data (n=185).
The correlation coefficient is based on the rule of thumb for interpreting the size of a correlation coefficient (see Table 4.5) (Hinkle, Wiersma, & Jurs, 2003).

Given that in some analyses the number of women who met criteria for DSM criteria was too small, low numbers of cases would lead to a poor and inaccurate estimate of any clinically significant effect.

Table 4.5: Rule of thumb for interpreting the size of a correlation coefficient (Hinkle et al., 2003)

<table>
<thead>
<tr>
<th>Size of correlation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>.90 to 1.00 (−.90 to −1.00)</td>
<td>Very high positive (negative) correlation</td>
</tr>
<tr>
<td>.70 to .89 (−.70 to −.89)</td>
<td>High positive (negative) correlation</td>
</tr>
<tr>
<td>.50 to .69 (−.50 to −.69)</td>
<td>Moderate positive (negative) correlation</td>
</tr>
<tr>
<td>.30 to .49 (−.30 to −.49)</td>
<td>Low positive (negative) correlation</td>
</tr>
<tr>
<td>.00 to .29 (.00 to −.29)</td>
<td>Negligible correlation</td>
</tr>
</tbody>
</table>

Note. Slight modification because ranges had overlapped. Overlap has been removed e.g. 0.7 is now 0.69 for moderate correlation.

4.5 Results

4.5.1 Participant characteristics

The socio-demographic data collected from the women included age of the mother and infant, number of children, level of education, working status and ethnic background. The mean age of mothers was 27.5 years ($SD=5.6$); age range was 18–48 years. The mean age of infants was 3.8 weeks ($SD=2.7$); age range was 1–12 weeks. The mean number of children was three ($SD=2$), ranging from 1 to 11 children. The percentage of Saudi women in this study was 36.7% and non-Saudi women was 63.3%. More details and figures relating to socio-demographic characteristics of the women are provided in Table 4.6.
Table 4.6: Socio-demographic characteristics of 354 women recruited in the study

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>Number (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>8</td>
<td>2.3</td>
</tr>
<tr>
<td>No school but can read and write</td>
<td>10</td>
<td>2.8</td>
</tr>
<tr>
<td>Primary school</td>
<td>88</td>
<td>24.9</td>
</tr>
<tr>
<td>Intermediate school</td>
<td>51</td>
<td>14.4</td>
</tr>
<tr>
<td>High school</td>
<td>197</td>
<td>55.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>354</td>
<td>100</td>
</tr>
<tr>
<td><strong>Higher education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic education</td>
<td>220</td>
<td>62.1</td>
</tr>
<tr>
<td>Diploma</td>
<td>21</td>
<td>5.9</td>
</tr>
<tr>
<td>University</td>
<td>105</td>
<td>29.7</td>
</tr>
<tr>
<td>Institute</td>
<td>8</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>354</td>
<td>100</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arabic-Speaking countries including Yemen, Sudan,</td>
<td>181</td>
<td>51.1</td>
</tr>
<tr>
<td>Egypt, Morocco, Syria, Jordan and Palestine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian countries including India, Afghanistan,</td>
<td>131</td>
<td>37</td>
</tr>
<tr>
<td>Pakistan, Bangladesh, Burma and Thailand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Arabic African countries including Mali,</td>
<td>42</td>
<td>11.9</td>
</tr>
<tr>
<td>Nigeria and Ethiopia</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>354</td>
<td>100</td>
</tr>
<tr>
<td><strong>Birth mode</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal birth</td>
<td>268</td>
<td>76</td>
</tr>
<tr>
<td>Emergency caesarean delivery</td>
<td>83</td>
<td>23</td>
</tr>
<tr>
<td>Requested caesarean delivery</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>354</td>
<td>100</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>307</td>
<td>86.7</td>
</tr>
<tr>
<td>Employed</td>
<td>47</td>
<td>13.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>354</td>
<td>100</td>
</tr>
<tr>
<td><strong>Paid maternity leave entitlement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Not applicable</td>
<td>307</td>
<td>67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>354</td>
<td>100</td>
</tr>
<tr>
<td><strong>Length of maternity leave after delivery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to two weeks</td>
<td>3</td>
<td>0.6</td>
</tr>
<tr>
<td>One month</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Two months</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>One year</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Not applicable</td>
<td>319</td>
<td>90</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>354</td>
<td>100</td>
</tr>
</tbody>
</table>
4.5.2 Dropout analysis

The study sample consisted of 354 women. At Time 2, 169 women (48%) had withdrawn. The mean interval between the two time points was 14.6 days (SD: 1.2 days; range: 14–21 days). There was dropout for the following reasons:

- 70% (n=118) inability to contact the woman on her phone (no reply/turned off)
- 15% (n=25) invalid phone number given
- 11% (n=19) husbands did not allow the researcher to contact the wives
- 4% (n=7) declined to do Time 2.

**Parity:** 37% of primiparous women did not complete Time 2 compared to 52% of multiparous women ($X^2(1) = 5.93, p = 0.02$). Women who withdrew at Time 2 were more likely to be multiparous.

**Age of the infant:** There was no statistically significant difference ($X^2(2)= 0.37, p = 0.83$) in the dropout rates of women who had babies aged 0 – 4 weeks, aged 5 – 7 weeks and aged 8 -12 weeks (47%, 49% and 54% respectively).

**Nationality:** 45% of Saudi women did not complete Time 2 compared to 50% of non-Saudi women ($X^2(1) = 0.80, p = 0.37$).

**EPDS:** There was not a significant difference ($t (352) = -1.07, p=0.28$) in the average scores for EPDS for women who completed Time 2 ($M=3.9, SD= 4.1$) and women who did not complete Time 2 ($M=4.4, SD=4.4$).

**BaM-13:** There was also not a significant difference ($t (352) = 0.34, p= 0.74$) in the average scores for BaM-13 in women who completed Time 2 ($M=7.7, SD= 5.9$) and women who did not complete Time 2 ($M=7.5, SD=6.2$).

In conclusion, therefore, there were no significant differences between women who completed Time 2 and those who did not complete Time 2 on their recruitment EPDS and Being-a-Mother-13 scores, nationality or in their infant’s age; significantly more multiparous women dropped out than completed the Time 2 assessment. This may mean that the main findings are more representative of primiparous women.
4.5.3 Instrument-order effect analysis

This analysis aimed to assess whether women would score statistically/meaningfully differently on the obtained EPDS scores, MGMQ and BaM-13, depending upon the order in which they were administered. This study explored whether there was meaningful difference in the mean of the EPDS score if EPDS was given before – or after – the other types of questionnaires (see Table 4.7).

<table>
<thead>
<tr>
<th>Orders</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: EPDS; Faces scale; MGMQ and BaM-13</td>
<td>6.4</td>
<td>6.0</td>
</tr>
<tr>
<td>2: EPDS; MGMQ; BaM-13 and Faces scale</td>
<td>4.2</td>
<td>4.3</td>
</tr>
<tr>
<td>3: BaM-13; EPDS; Faces scale; and MGMQ</td>
<td>4.4</td>
<td>4.4</td>
</tr>
<tr>
<td>4: BaM-13; MGMQ; EPDS and Faces scale</td>
<td>2.4</td>
<td>2.6</td>
</tr>
<tr>
<td>5: Faces scale; EPDS; MGMQ and BaM-13</td>
<td>4.1</td>
<td>3.7</td>
</tr>
<tr>
<td>6: MGMQ; EPDS; Faces scale and BaM-13</td>
<td>3.3</td>
<td>3.7</td>
</tr>
</tbody>
</table>

There was significant statistical difference between order 1 and order 2 \([t(118)=2.309, p=.023]\). The mean of the EPDS score was higher \((M=6.4, SD=6.0)\) compared to order 2, which also administered the EPDS first \((M=4.2, SD=4.3)\). However, in order 4 when EPDS was preceded by BaM-13 and MGMQ, the mean of EPDS was lower compared to the other orders. Nevertheless, when EPDS was preceded by BaM-13 only; the mean score of EPDS was similar to the other orders except order 1.

EPDS score did not show any difference in the mean score if it was preceded by the direct mood question (MGMQ or Faces Scale) or the general experience (BaM-13), which was tested on four occasions. For example, mean of EPDS score was similar in order 3 \((M=4.4)\) when EPDS was administered after BaM-13 and also in order 5 \((M=4.1)\) and order 6 \((3.3)\) when administered after the general mood questions (MGMQ and Faces Scale) respectively. There is no consistent
finding that giving the EPDS before – or after – the other types of questionnaires will lead to substantial differences in responses.

This study also tested the impact of the order on other measures (MGMQ and BaM-13). Giving the MGMQ before – or after – the other types of questionnaires, women did not show any statistical difference in coping responses on the MGMQ. The results also did not show any statistically or clinically significant difference in the BaM-13 score compared to any other order (see appendix 7; Table 7.2.1 and 7.2.2 for analysis of each measure). Therefore, the evidence suggests that the test order does not have a consistent impact on the obtained EPDS scores, MGMQ and BaM-13, and thus the analyses incorporating all respondents is valid.
4.6 Research questions

4.6.1 Research Question 1:

What is the valid cut-off score for EPDS in Arabic-speaking women living in SA?

Against diagnosis of Depression (Major and Minor) and Anxiety disorders (AADA, Panic Disorder, Agoraphobia, Social Phobia, OCD and PTSD).

Psychometric properties of EPDS

Reliability of EPDS

Test–retest reliability of EPDS

Test–retest reliability was calculated for 185 mothers between two administrations (range 14–21 days). Paired sample correlation was calculated on the total scores of EPDS. A Spearman’s correlation of $r_s = +0.67$, 95% CI [0.57-0.76], $p < 0.01$.

However, one of the main research questions is to examine those who continue to score high a few weeks later on the EPDS (‘enduring distress’) along with those who do not continue to score high (‘transient distress’). This examination will allow for a fuller understanding of the limitations of the test–retest reliability. Despite the moderate Spearman’s correlation, in my study around 29% of high scorers in fact only have transient distress (more details are provided in Section 4.6.4).

Cronbach’s alpha of EPDS

Cronbach’s $\alpha$ indicated good internal consistency ($\alpha = 0.85$), thus exceeding the minimum required level for psychological tests of 0.70 (Cortina, 1993).

Concurrent validity

This was calculated with the mother’s EPDS score completed at the same time as the MINI (DSM-IV-TR) criteria for Depression and Depression and Anxiety. The result on 185 mothers was a moderate correlation ($r_s = +0.60$, 95 CI [0.51, 0.68], $p = .01$ and $r_s = +0.56$, 95 CI [0.44, 0.66], $p < 0.01$) respectively.
**Factor analysis**

A principal component analysis (PCA) was conducted on the ten items with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, KMO = 0.816 which is above the acceptable level of 0.5 (Field, 2009). Bartlett’s test of sphericity $\chi^2 (45) = 1078.74$, indicated that correlations between items were sufficiently large for PCA. The visual examination of the scree plot suggested a three-factor solution (see Figure 4.2) and eigenvalues ($>1$) suggested that three factors be retained. The first factor explained 38.8% of the variance. The second factor explained 11.99% of the variance. The third factor explained 10.84% of the variance. The first factor (Anxiety factor) included items 3, 4, 5, 6 as well as item 9. In Table 4.8, item 3 has two factor loadings (.515 factor 1 and .613 factor 3) and item 3 is theoretically more associated with factor 1 (Anxiety) as considered with 4 and 5 as Anxiety subscale. The second factor (Anhedonia) included items 1 and 2. The third factor (Depression) included items 8 and 10.

![Figure 4.2: Scree plot for three-factor solution of Arabic version of EPDS](image)
Table 4.8: Factor analysis of the Arabic version of EPDS (Time 1; n=354)

<table>
<thead>
<tr>
<th>Arabic version of EPDS</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 I have been able to laugh and see the funny side of things</td>
<td>.851</td>
</tr>
<tr>
<td>2 I have looked forward with enjoyment to things</td>
<td>.844</td>
</tr>
<tr>
<td>3 I have blamed myself unnecessarily when things went wrong</td>
<td>.515 .613</td>
</tr>
<tr>
<td>4 I have been anxious or worried for no good reason</td>
<td>.831</td>
</tr>
<tr>
<td>5 I have felt scared or panicky for no very good reason</td>
<td>.814</td>
</tr>
<tr>
<td>6 Things have been getting on top of me</td>
<td>.420</td>
</tr>
<tr>
<td>7 I have been so unhappy that I have had difficulty sleeping</td>
<td></td>
</tr>
<tr>
<td>8 I have felt sad or miserable</td>
<td>.654</td>
</tr>
<tr>
<td>9 I have been so unhappy that I have been crying</td>
<td>.548</td>
</tr>
<tr>
<td>10 The thought of harming myself has occurred to me</td>
<td>.798</td>
</tr>
</tbody>
</table>

Note. Extraction Method: Principal Component Analysis. Rotation: Varimax. Eigen values >1. Factor loadings below 0.4 are not presented.

At Time 1 (n=354), the factor structures reported three factors including Anxiety, Depression and Anhedonia factors. The Anxiety factor loaded 6 items including item 3, 4, 5, 6, 7 and 9. At Time 2 (n=185), however, the factor structures reported two factor structures (see Table 4.9), including Anxiety and Depression factors. In this analysis, Anxiety factor loaded with a mix of Depression and Anxiety items. The Depression factor loaded 2 items. Therefore, the Anxiety subscale is not a robust finding.

Therefore, further analysis looking at prevalence rates and receiver operator characteristics (ROC) against both Depression and Depression or Anxiety will simply use total scores on EPDS and not incorporate scores on the Anxiety subscale.
Table 4.9: Factor analysis of the Arabic version of EPDS (Time 2; n=185)

<table>
<thead>
<tr>
<th>Arabic version of EPDS</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 I have been able to laugh and see the funny side of things</td>
<td>.825</td>
</tr>
<tr>
<td>2 I have looked forward with enjoyment to things</td>
<td>.807</td>
</tr>
<tr>
<td>3 I have blamed myself unnecessarily when things went wrong</td>
<td>.577</td>
</tr>
<tr>
<td>4 I have been anxious or worried for no good reason</td>
<td>.710</td>
</tr>
<tr>
<td>5 I have felt scared or panicky for no very good reason</td>
<td>.534</td>
</tr>
<tr>
<td>6 Things have been getting on top of me</td>
<td>.681</td>
</tr>
<tr>
<td>7 I have been so unhappy that I have had difficulty sleeping</td>
<td>.742</td>
</tr>
<tr>
<td>8 I have felt sad or miserable</td>
<td>.575</td>
</tr>
<tr>
<td>9 I have been so unhappy that I have been crying</td>
<td>.819</td>
</tr>
<tr>
<td>10 The thought of harming myself has occurred to me</td>
<td>.745</td>
</tr>
</tbody>
</table>


**Receiver operator characteristics**

ROC analyses show the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) for different cut-off scores of the EPDS for Major or Minor Depression and Major or Minor Depression or Anxiety as well as for Major Depression and Major Depression or Anxiety. Data are from Time 2 (n=185) since the DSM was administered then. Endorsement of any of the DSM symptoms for Major or Minor Depression and Major or Minor Depression or Anxiety was then followed by asking the symptom attribution question as probed criteria described in the methods section. Determination of the appropriate cut-off scores is presented in Table 4.10. Details of different cut-off scores and ROC curves for each diagnostic criterion are presented in Appendix 7.3.
Table 4.10: Summary of cut-off scores, sensitivity, specificity, PPV and NPV for Major Depression, Major or Minor Depression or Anxiety against usual DSM and probed criteria (n=185)

<table>
<thead>
<tr>
<th>ROC analyses</th>
<th>Major Depression</th>
<th>Major or Minor Depression</th>
<th>Major Depression or Anxiety</th>
<th>Major or Minor Depression or Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usual DSM criteria (n=30)</td>
<td>Against probed criteria (n=15)</td>
<td>Usual DSM criteria (n=36)</td>
<td>Against probed criteria (n=22)</td>
<td>Usual DSM criteria (n=44)</td>
</tr>
<tr>
<td>Optimal cut-off score</td>
<td>7 or more</td>
<td>10 or more</td>
<td>7 or more</td>
<td>9 or more</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>83.3%</td>
<td>73.3%</td>
<td>80.6%</td>
<td>77.3%</td>
</tr>
<tr>
<td>Specificity</td>
<td>85.5%</td>
<td>91.0%</td>
<td>87.7%</td>
<td>92.5%</td>
</tr>
<tr>
<td>PPV</td>
<td>59.0%</td>
<td>67.1%</td>
<td>62.0%</td>
<td>72.0%</td>
</tr>
<tr>
<td>NPV</td>
<td>95.4%</td>
<td>93.2%</td>
<td>94.7%</td>
<td>94.2%</td>
</tr>
</tbody>
</table>
Table 4.11 shows the area under the ROC curve for each of the screening measures in terms of Major Depression, Major or Minor Depression or Anxiety. The Major Depression (usual and probed criteria), Major or Minor Depression (usual and probed criteria) and Major or Minor Depression or Anxiety (usual criteria) were shown to have the largest area under the curve, followed by Major Depression or Anxiety (usual and probed criteria) and Probed Major or Minor Depression or Anxiety.

*Table 4.11: Area under the curve for Major Depression, Major or Minor Depression or Anxiety against usual DSM and probed criteria (n=185)*

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>AUC</th>
<th>sign</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression</td>
<td>0.930</td>
<td>P&lt;0.0001</td>
<td>[0.883, 0.963]</td>
</tr>
<tr>
<td>Probed Major Depression</td>
<td>0.926</td>
<td>P&lt;0.0001</td>
<td>[0.878, 0.960]</td>
</tr>
<tr>
<td>Major or Minor Depression</td>
<td>0.922</td>
<td>P&lt;0.0001</td>
<td>[0.873, 0.957]</td>
</tr>
<tr>
<td>Probed Major or Minor Depression</td>
<td>0.918</td>
<td>P&lt;0.0001</td>
<td>[0.868, 0.953]</td>
</tr>
<tr>
<td>Major Depression or Anxiety</td>
<td>0.881</td>
<td>P&lt;0.0001</td>
<td>[0.825, 0.924]</td>
</tr>
<tr>
<td>Probed Major Depression or Anxiety</td>
<td>0.826</td>
<td>P&lt;0.0001</td>
<td>[0.825, 0.924]</td>
</tr>
<tr>
<td>Major or Minor Depression or Anxiety</td>
<td>0.930</td>
<td>P&lt;0.0001</td>
<td>[0.883, 0.963]</td>
</tr>
<tr>
<td>Probed Major or Minor Depression or Anxiety</td>
<td>0.845</td>
<td>P&lt;0.0001</td>
<td>[0.785, 0.895]</td>
</tr>
</tbody>
</table>

Note. AUC=Area under the curve
4.6.1.1 Discussion

Psychometric properties

In this study, the Arabic version of the EPDS proved to be acceptable to women in Saudi Arabia and, similar to most studies, its reliability as measured by the internal consistency and test–retest analysis was found to be satisfactory. Test–retest reliability of 0.67 was slightly lower than that found for the Norwegian version was lower to this study (0.74; (time interval= 2 weeks); Eberhard-Gran, Eskild, Tambs, Schei, & Opjordsmoen, 2001), the Iranian version of EPDS (0.80; (time interval= 6 weeks); Montazeri, Torkan, & Omidvari, 2007), French version (0.92; (time interval=4-10 days); (Guedeney & Fermanian, 1998) and the English version of EPDS (0.91; (time interval= 2 days); Kernot, Olds, Lewis, & Maher, 2015). The possible explanation of this difference may be due to the test-retest time frame. None of the previous Arabic validation studies have reported test–retest reliability analysis. The value of the Cronbach’s alpha of the EPDS (0.80) showed that the EPDS had acceptable internal consistency. Considering that the EPDS is a well-known and well-established scale, this study confirms its good internal consistency, the value (0.85) being similar to the Cronbach’s alpha of original version of the EPDS (0.87; Cox et al., 1987) and the Arabic version (0.84; Ghubash et al., 1997). The other Arabic validation studies (Matthey & Barnett; 1997; Agoub et al., 2005) did not report the value of Cronbach’s alpha. The Arabic version of EPDS is reliable for Arabic speaking women in Saudi Arabia.

The factor analysis of the EPDS in this study shows that the EPDS includes three factors models at Time 1 and two factors models at Time 2. No previous studies have reported the factor structure of the Arabic version of EPDS. Therefore comparison was made with studies from different countries. In this study, three factors include Anhedonia (item 1 and 2), Anxiety (item 3, 4, 5, 7 and 9) and Depression (item 8 and 10). This result is consistent with previous studies that reported three factor structures of EPDS; however, the items that loaded on the Anxiety and Depression factors are inconsistent with other studies. Montazeri and colleagues (2007) identified that three factors of the Iranian version of EPDS include Anhedonia (item 1 and 2), Anxiety (item 3, 4 and 5) and Depression (item 6, 7, 8, 9 and 10). Similar results were also reported from Pop et al. (1992; Dutch version), Teissedre and Chabrol (2004; French version),
Kubota et al. (2014; Japanese version) and Lau et al. (2010; Chinese version). Other studies have reported three factors that contain Depression, Anxiety, and suicide (e.g. Brouwers, van Baar, & pop, 2001; Jomeen & Martin, 2007; Ross et al., 2003).

However, other studies have reported that factor structures of EPDS include two factors: Depression and Anxiety (e.g. Adouard, Glangeaud-Freudenthal, & Golse, 2005). In this study, the factor analysis at Time 2 had two factor structures. However, the Anxiety factors loaded different items compared to Time 1 and were a mixture of Depression and Anxiety factors. Previous studies (Brouwers et al., 2001; Matthey, 2008; Ross et al., 2003; Pop et al., 1992) found that the items (3, 4 and 5) loaded on the Anxiety factor. However, in this study the Anxiety subscale analysis was not sufficiently robust to incorporate scores on EPDS on the Anxiety subscale. Therefore, this study simply used total scores on EPDS against Depression and Depression or Anxiety. Further studies need to look at the robustness of the Anxiety subscale in women in Saudi Arabia.

**The valid cut-off score**

This study assessed the valid cut-off score for the EPDS in women in Saudi Arabia, so as to be able to use it as a screening instrument to identify Postpartum Distress. The EPDS was tested in this study against the DSM-IV-TR criteria for Depression (Major or Minor), Major Depression or Anxiety disorders. The optimum cut off score is 7 or more to screen for Depression (Major or Minor), Depression or Anxiety disorders using usual DSM criteria. All the previous Arabic studies validated EPDS for screening for Depression but not for Anxiety. It is of note that the cut-off score in this study (7 or more) for screening for Depression is lower compared to that found by other Arabic studies (see Table 4.12).
Table 4.12: The validated EPDS cut-off scores in Arabic populations using usual/attribution DSM criteria

<table>
<thead>
<tr>
<th>Study</th>
<th>Major Depression</th>
<th>Depression (Major or Minor)</th>
<th>Depression or Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghubash et al. (1997)</td>
<td>n/a</td>
<td>10 or more</td>
<td>n/a</td>
</tr>
<tr>
<td>Agoub et al. (2005)</td>
<td>n/a</td>
<td>12 or more</td>
<td>n/a</td>
</tr>
<tr>
<td>Matthey &amp; Barnett (1997)</td>
<td>10 or more</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Current study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usual DSM criteria</td>
<td>7 or more</td>
<td>7 or more</td>
<td>7 or more</td>
</tr>
<tr>
<td>Attributional probing</td>
<td>10 or more</td>
<td>9 or more</td>
<td>7 or more</td>
</tr>
</tbody>
</table>

Note. n/a= not available.

In this study, when the attributional probing is taken into consideration for depressive disorders, the cut-off score is increased from that found to detect Depression using usual DSM criteria. The cut-off score of 9 or more is used for screening for Major or Minor Depression and an optimal cut-off score of 10 or more is used for screening Major Depression. The optimal cut-off changes between Major Depression and Major or Minor Depression are also reported in other studies. Hewitt and colleagues (2009) reviewed 40 studies that utilized EPDS and reported the optimal cut-off score of 12 or more for screening Major Depression and 10 or more for screening Major or Minor Depression.

When Anxiety disorders are included, however, the optimal cut-off score is reduced to 7 or more. The cut-off scores have not been affected by the probed criteria. It could be related to the validation of EPDS against Anxiety disorders. As required in the software package to give reference to the Anxiety prevalence (15%; Amr & Balaha, 2010) in order to calculate PPV and NPV. The EPDS scores were validated against Anxiety disorders yielding the optimum cut-off score for detecting Anxiety disorders using usual DSM criteria was 3 or more. The sensitivity was 73.9%, specificity was 82% and PPV was 43%. For detecting Anxiety disorders using probed criteria, a cut-off score of 4 or more was the optimum cut-off, which yielded a similar sensitivity (71.4%), and specificity (77.7%) and PPV (36.7%).
The drop in the cut-off score of EPDS when Anxiety is included was not consistent with findings from Edmondson, Psychogiou, Vlachos, Netsi and Ramchandani (2010) and Matthey, Barnett, Howie and Kavanagh (2003). Both studies have validated EPDS against usual DSM criteria of Depression or Anxiety in fathers. Edmondson and colleagues (2010) reported the cut-off score of EPDS decreased once the diagnoses of caseness included GAD (the cut-off score decreased from 10 or more to 8 or more for detecting Major Depression or Anxiety). Similar results were obtained from Matthey et al. (2003); however, in Matthey and colleagues’ study, there was significant decrease in the cut-off score reported (from 10 or more to 5 or more) if Minor Depression or Anxiety were included, which may explain the larger drop in the cut-off scores. Nevertheless, in Matthey and colleagues’ study, there was a small drop in the cut-off point for women when Anxiety was included (9 or more to 8 or more).

The explanation of the large drop in the cut-off score in this study remains unclear. It could be that women in Saudi Arabia experience Anxiety symptoms differently. In this analysis, 21 women who did not meet criteria for Anxiety scored high on total scores of EPDS at Time 2. This study cannot provide an answer to the issue of the large drop. Further studies need to look for the use of EPDS for detecting Depression and Anxiety and compare the findings.

In conclusion, the results show that the EPDS is both reliable and valid for women in Saudi Arabia. A score of 7 or more for screening Depression or Anxiety is considered the optimal cut-off score in women in Saudi Arabia. When the attributional probing was applied, the cut-off score did not affected. However, the probe question is needed in the validation study. It is important to consider the choice of the gold standard measure. The suitability of the diagnostic criteria has been questioned in women in the perinatal period due to overlap of the normal postpartum symptoms and depressive or Anxiety symptoms. Therefore, studies have concluded that the criteria need to be probed (Matthey & Ross-Hamid, 2011; Ayers et al., 2015) in order to be clear that the symptoms were solely attributable to Depression or Anxiety.
4.6.2 Research Question 2

*What is the prevalence of Postpartum Distress in Makkah, Saudi Arabia?*

Considerations of different ways of measuring are explored below.

1) *DSM diagnosis of Depression and Anxiety, using ‘usual DSM criteria’ and a woman’s attribution of symptom relevance criteria.*

2) *Prevalence rates according to different self-report mood scales (EPDS; MGMQ and Faces Scale)*

### 4.6.2.1 Prevalence of Depression according to diagnostic criteria

The prevalence rate of depressive disorders using usual DSM criteria only and DSM probed criteria are shown in Table 4.13. Using usual DSM criteria, the prevalence rate of depressive disorders, including Major and Minor Depression, is 19.5% (n=36). The rate of Major Depression alone is 16.2% (n=30), and the rate of Minor Depression alone is 3.2% (n=6). Using DSM probed criteria, the prevalence rate of depressive disorders, including Major and Minor Depression, is 11.9% (n=22), the Major Depression rate is 8.1% (n=15) and the Minor Depression rate is 3.8% (n=7).

84% of women reported that the onset of Depression symptoms started after childbirth whereas 8% indicated the onset started before the pregnancy and 8% during the pregnancy.

*Table 4.13: Rates of depressive disorders using usual DSM criteria and DSM probed criteria (n=185)*

<table>
<thead>
<tr>
<th>Depressive disorders</th>
<th>Usual DSM criteria</th>
<th>DSM probed criteria</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>95% CI</td>
<td>%</td>
</tr>
<tr>
<td>Major or Minor</td>
<td>19.5</td>
<td>[14.6, 26.2]</td>
<td>11.9</td>
</tr>
<tr>
<td>Minor</td>
<td>3.2</td>
<td>[1.5, 7.0]</td>
<td>3.8</td>
</tr>
<tr>
<td>Hypomania</td>
<td>0</td>
<td>-</td>
<td>0</td>
</tr>
</tbody>
</table>
In comparison, the prevalence rate of depressive disorders decreased (19.5% to 11.9%, t (184) =1.862, p=.064). The result shows there is no significant difference between the two percentages of Major or Minor Depression using usual diagnostic criteria and when taking into consideration attribution of the DSM depressive symptoms.

In case of the Major Depression rate, the difference between the two percentages was statistically significant (16.2% to 8.1%, t (184) =2.266, p=.025). The result showed half of women who met the usual DSM criteria for Major Depression had a sufficient number of symptoms that they said are simply due to the practical demands of having a baby (e.g. feeling exhausted or lack of sleep) and that they were not related to their mood.

In case of Minor Depression, the difference between the two percentages was not statistically significant (t (184) = 0.309, p=.758). The result showed the impact on the rate of Minor Depression did not appear high because some women with usual DSM Major Depression only had sufficient symptoms to meet criteria for Minor Depression. Half the very small number of women with Minor Depression using usual DSM criteria no longer had Minor Depression once attribution criteria were used.

Table 4.14 details the frequency of attributional category for the six depressive symptoms for which the attributional question was asked. This shows that between a third to a half of each symptom endorsement is considered by the women to be just due to the practical demands of having a baby, and not due to their mood. Here are explanations when women said it was due to the practical demands of having a baby, not due to their mood. Examples of attribution just due to the practical demands of having a baby include:

A2: Anhedonia: Now I have a new born, I prefer not to go out while my daughter is still young. I have been invited to many parties but I prefer to stay home with my daughter. (Mother of a two-week-old baby)

A3a: Appetite: When I start to eat, my baby starts to cry so I stopped eating and trying to calm him down for a while and then when I am back to eat, my husband has finished eating and the food is cold, and so I have no desire to eat anymore. (Mother of a two-month-old baby)
A3b: Sleep: *My son always wakes at night when it is my time to sleep, so I have to be with him. I have no one at home who can take care of him and when it is morning he is asleep. I can’t sleep with him; I have to do my house duties.*  (Mother of a three-month-old baby)

A3c: Psychomotor changes: *I have been working the whole day looking after my daughter and cleaning and cooking, and I have to do these boring things every day. I am really tired and I start to leave everything as it is because I do feel tired.*  (Mother of a two-month-old baby)

A3d: Concentration: *I found it hard to concentrate after my son was born, especially when he cries.*  (Mother of a six-week-old baby)

On the other hand, there are examples where a woman said she has these symptoms and it is related to her mood. Examples of attribution just due to the mood or worries given by women for each of the symptoms include:

A2: Anhedonia: *I left everything to the maid even though that was not me or my habit. And to this day I have not changed his diaper. To this day I have not given him a bath. To this day I do not breastfeed him. Whenever I put him close to my chest I feel uneasy.*  (Mother of a two-month-old baby)

A3a: Appetite: *... I feel afraid. I feel ... as if my stomach is closed and can’t drink a glass of water.*  (Mother of a two-month-old baby)

A3b: Sleep: *I was always feeling depressed and I sat awake even when my son was asleep.*  (Mother of a five-week-old baby)

A3c: Psychomotor changes: *I could not sleep except if he [baby] was laying on me while he was asleep. See to what to extent it was. I went through the first forty days afraid to lose this child. You cannot control your thoughts. But this affected my health, my fatigue. I was extremely tired. I sat with him all day and all night long.*  (Mother of a two-month-old baby)

A3d: Concentration: *I feel I am confused and can’t concentrate to do the simplest things.*  (Mother of a one-month-old baby)
Table 4.14: The frequency of attributional category for the six probed depressive symptoms (n=185)

<table>
<thead>
<tr>
<th>Attribution</th>
<th>DSM Depression symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A1 sadness</td>
</tr>
<tr>
<td>Symptoms endorsed</td>
<td></td>
</tr>
<tr>
<td>Symptoms related to practical</td>
<td>N/A</td>
</tr>
<tr>
<td>demands of having a baby</td>
<td></td>
</tr>
<tr>
<td>Mood</td>
<td>N/A</td>
</tr>
<tr>
<td>Both&lt;sup&gt;a&lt;/sup&gt;</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note. n (%), [95% CI]; Percentages rounded up/down; N/A: attribution for symptom not probed
<sup>a</sup>due to mood and also due to the practical demands of having a baby
4.6.2.2 Prevalence of Depression based on diagnostic criteria among Saudi women

The rate of Depression (Major or Minor Depression) in this sample was 19.5% [14.6, 26.2]. The rate of Depression among Saudi women was found to be 33%, [23.5, 44.8] (n=24) compared to 11%, [6.2, 17.6] (n= 12) of non-Saudi women. There was a significant difference in the rate between the two groups [t (184) = 4.78, p<.001].

For Major Depression, 29%, [19.9, 40.5] (n=21) of Saudi women met the diagnostic criteria of Major Depression in comparison to 8%, [4.3, 14.5] (n= 9) of non-Saudi women. There was a statistically significant difference in the rate between the two groups [t (184) = 5.00, p<.001].

For Minor Depression, 4%, [1.4-11.8] (n=3) of Saudi women and 3%, [0.9, 7.5] (n=3) of non-Saudi women met the diagnostic criteria of Minor Depression (DSM-IV). There was no statistical difference in the proportion between the two groups [t (184)=0.51, p=.608].

When the attributional probing is taken into consideration, the rate of Depression (Major or Minor Depression) in this sample was reduced to 11.5% [14.6, 26.2]. The rate of Depression among Saudi women was found to be 18%, [10.9, 28.5] (n=13) compared to 8%, [4.3-14.5] (n= 9) of non-Saudi women. There was a significant difference in the rate between the two groups [t (184) = 2.72, p=.007].

The rate of probed Major Depression was significantly dropped to 8.1%, [5.1, 13.2]. Among Saudi women, the rate of probed Major Depression was 15%, [8.8-25.3] (n=11), which is high compared to 4%, [1.4-8.8] (n=4) in non-Saudi women. There was a significant difference in the rate between the two groups [t(184)=3.55, p<.001].

For Minor Depression, 3%, [0.8-9.6] (n=2) of Saudi women met the criteria of Minor Depression, whereas 4%, [1.9-9.9] (n=5) of non-Saudi women met the criteria of probed Minor Depression. There was no statistical difference in the rate between the two groups [t (184) =0.51, p=.608].
4.6.2.3 Prevalence of Anxiety disorders according to the usual diagnostic interview

The prevalence rates of Anxiety disorders using usual DSM criteria and DSM probed criteria are shown in Table 4.15. Using DSM criteria, the prevalence rate of Anxiety Disorder is 24.9% (n=46). AADA is the most common Anxiety Disorder presented in this population. Two women met criteria for both Panic Disorder and AADA and three met only criteria for Panic Disorder. For those with Social Phobia, three out of six women met criteria for Social Phobia, one met criteria for Social Phobia and Agoraphobia, one for Social Phobia and AADA and one for Social Phobia, Panic Disorder and Agoraphobia. The prevalence rate of Panic disorders with Agoraphobia was 1.6% and none of the women met criteria for OCD.

58% of women reported that the onset of Anxiety symptoms started after childbirth whereas 13% indicated the onset started before the pregnancy, 9% during the pregnancy and 20% of women were not sure about the onset.

Table 4.15: Rates of Anxiety disorders using usual DSM criteria and with probed criteria (n=185)

<table>
<thead>
<tr>
<th>Disorders</th>
<th>Usual DSM criteria</th>
<th>DSM probed criteria</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>95 % CI</td>
<td>%</td>
</tr>
<tr>
<td>Any Anxiety disorders</td>
<td>24.9</td>
<td>[20.5, 33.2]</td>
<td>15.1</td>
</tr>
<tr>
<td>AADA</td>
<td>17.8</td>
<td>[13.2, 24.4]</td>
<td>11.9</td>
</tr>
<tr>
<td>Panic Disorder without Agoraphobia</td>
<td>3.2</td>
<td>[1.5, 7.0]</td>
<td>2.2</td>
</tr>
<tr>
<td>Agoraphobia</td>
<td>3.2</td>
<td>[1.5, 7.0]</td>
<td>n/a</td>
</tr>
<tr>
<td>Panic Disorder a</td>
<td>3.2</td>
<td>[1.5, 7.0]</td>
<td>n/a</td>
</tr>
<tr>
<td>Social Phobia a</td>
<td>3.2</td>
<td>[1.5, 7.0]</td>
<td>n/a</td>
</tr>
<tr>
<td>PTSD a</td>
<td>3.2</td>
<td>[1.5, 7.0]</td>
<td>n/a</td>
</tr>
<tr>
<td>Panic Disorder with Agoraphobia</td>
<td>1.6</td>
<td>[0.6, 4.7]</td>
<td>1.1</td>
</tr>
<tr>
<td>OCD</td>
<td>0</td>
<td>-</td>
<td>0</td>
</tr>
</tbody>
</table>

Note. a no attributional probing; N/A= not available
In comparison, the prevalence rate of Anxiety disorders decreased from 24.9% to 15.1%, \( t(184)=2.133, p=.034 \). The result shows there is a significant difference between the two percentages of Anxiety disorders using usual diagnostic criteria and when taking into consideration attribution of the DSM Anxiety symptoms. The rate of AADA also decreased from 17.8% to 11.9%, \( t(184)=1.481, p=.140 \), which was not statistically significantly different when taking into consideration whether the symptom is perceived as just due to the practical demands of having a baby, or whether it is just due to mood/worries, or both (due to mood/worries and due to the practical demands of having a baby). Of 33 women meeting the usual DSM criteria for AADA, 22 attributed sufficient AADA symptoms to their mood to remain as meeting DSM criteria for AADA.

The rate of Panic Disorder without Agoraphobia decreased from 3.2% to 2.2%, \( t(184)=0.586, p=.559 \), of the usual diagnostic rate when consideration is given to whether a symptom is due to the practical demands of having a baby. Out of the six women meeting the usual DSM criteria for Panic Disorder, four women attributed sufficient Panic Disorder symptoms to their mood or worries to remain meeting DSM criteria for Panic Disorder.

The rate of Panic Disorder with Agoraphobia slightly decreased, from 1.6% to 1.1%, \( t(184)=0.414, p=.679 \), of the usual diagnostic rate when consideration is given to whether a symptom is perceived as just due to the practical demands of having a baby or whether it is perceived due to mood or worries. Out of the three women meeting the usual DSM criteria for Panic Disorder, two women attributed sufficient Panic Disorder symptoms to their mood or worries to remain meeting DSM criteria for Panic Disorder.

In Table 4.16 the frequency of attribution category for each AADA symptom is displayed.
Table 4.16: The frequency of attributional category for each AADA symptom (n=185)

<table>
<thead>
<tr>
<th>Attribution</th>
<th>DSM AADA Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N1 Excessive worry</td>
</tr>
<tr>
<td>Symptoms endorsed</td>
<td>50 (27%)</td>
</tr>
<tr>
<td></td>
<td>[22, 34]</td>
</tr>
<tr>
<td>Symptoms related to practical demands of having a baby</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>[14, 25]</td>
</tr>
<tr>
<td>Worries</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>[12, 40]</td>
</tr>
<tr>
<td>Both(^a)</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>[13.7, 25.0]</td>
</tr>
</tbody>
</table>

Note. n (%) [95% CI]; Percentages rounded up/down; N/A: attribution for symptom not probed
\(^a\) due to mood and also due to the practical demands of having a baby
Table 4.16 shows about one-third of each of the probed symptoms are endorsed by the women as being just due to the practical demands of having a baby, and are not related to their mood or worries. None of the core symptoms of Anxiety disorders were probed (see Section 4.3.6.3). Examples of some attributions of just due to the practical demands of having a baby given by women for each of the non-core symptoms include:

Feel restless: I just feel restless because I am the only one who cares about my son and trying to manage everything by myself. (Mother of a two-week-old baby)

Tired or exhausted easily: When I wake up in the morning I have no rest at all. I have to clean my baby, feed him and look after him and also clean the home and cook. When it is midday I feel really tired especially. I have no maid at home to help and having a four week old baby. (Mother of a four-week-old baby)

Difficulty concentrating: I lose my concentration when my baby cries, especially if we are at my in-laws’ house. I would get nervous if she cried and they start to ask me why she cries. I wouldn’t know what to do and I lose my focus. Sometimes people make me feel that baby crying is not normal. (Mother of a one-month-old baby)

On the other hand, there are examples where women said they have these symptoms and they are related to her mood. Examples of some attributions of just due to the mood or worries given by women for some of the Anxiety symptoms include:

Feel restless: I was constantly checking to see if the baby was still moving. I have a feeling I will lose my baby. (Mother of a one-week-old baby)

Sleeping difficulties: I was so worried that my daughter wouldn’t sleep properly if we were out and I wouldn’t sleep because I am so worried. (Mother of a two-month-old baby)

Difficulty concentrating: I felt unable to do anything properly. I would hardly ever leave the house. Especially when I go out, I feel people will judge me as a bad mother. (Mother of a two-month-old baby)

These examples show that the women’s attributions to Depressive and Anxiety symptoms have face validity. For example, to feel more tired due to the practical demands of looking after an infant and thus it should not be unquestioningly construed as a symptom of Depression or Anxiety.
4.6.2.4 Prevalence of Anxiety disorders based of diagnostic criteria among Saudi women

The rate of Anxiety disorders in this sample was 24.9% [20.5, 33.2]. The rate of Anxiety disorders among Saudi women was found to be 36%, [25.9-47.7] (n=26) compared to 18%, [11.8-25.8] (n= 20) of non-Saudi women. There was a significant difference in the rate between the two groups, t (184) = 3.44, p<.001.

When the attributional probing is taken into consideration, the rate of Anxiety disorders in this sample was reduced to 15.1% [14.6, 26.2]. The rate of Anxiety among Saudi women was found to be 24%, [15.3, 34.6] (n=17) compared to 10%, [5.5-16.6] (n= 11) of non-Saudi women. There was a significant difference in the rate between the two groups, t (184)=3.364, p<.001.

**Prevalence rates according to different self-report mood scales (EPDS; MGMQ and Faces scale)**

Table 4.17 shows different rates of each measure using different cut-off scores for each measure. At Time 1, it appears different Postpartum Distress rates are reported based on different self-report measures. As can be seen, the rate reported based on MGMQ (yes or possibly) was higher compared to the other scales. With the ‘bothering’ question, the rate dropped which is similar to the Faces Scale (Face 4, 5 or 6). The rate of Faces Scale (Face 4 or 5) was low compared to EPDS and MGMQ. At Time 2, the rates of Postpartum Distress were similar across all the self-report measures. The rates on the EPDS and Faces Scale (Face 4 or 5) were not significantly different at Times 1 and 2.
Table 4.17: Percentage and 95% CI for the rates of each self-report measure

<table>
<thead>
<tr>
<th>Measures</th>
<th>Prevalence</th>
<th>Time 1 (n=354)</th>
<th></th>
<th>Time 2(n=185)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percentage</td>
<td>95% CI</td>
<td>Percentage</td>
<td>95% CI</td>
<td></td>
</tr>
<tr>
<td>EPDS</td>
<td>22(^a)</td>
<td>[18-27](^b)</td>
<td>25(^a)</td>
<td>[20-32](^b)</td>
<td></td>
</tr>
<tr>
<td>MGMQ</td>
<td>46(^b)/32(^c)</td>
<td>[41-51](^b)/[28-37](^c)</td>
<td>28(^b)/24(^c)</td>
<td>[22-34](^b)/[18-30](^c)</td>
<td></td>
</tr>
<tr>
<td>Faces Scale</td>
<td>34(^d)/14(^e)</td>
<td>[30.0-40.0](^d)/[10.8-18.4](^e)</td>
<td>28(^d)/22(^e)</td>
<td>[21.6-34.4](^d)/[16.3-28.1](^e)</td>
<td></td>
</tr>
</tbody>
</table>

Note. Percentages rounded up/down

\(^a\) Cut-off score of 7 or more (validated in the study)

\(^b\) Responding ‘Yes’ (not coping) or ‘Possibly’ (not coping)

\(^c\) Responding that their feeling has bothered them ‘Moderately’ or ‘A lot’

\(^d\) Choosing face 4 ‘Unhappy or worried’ or face 6 ‘sometimes feeling happy and calm + other times feeling unhappy and worried’ or face 5 ‘Very unhappy or worried’

\(^e\) Choosing face 4 ‘Unhappy or worried’ or face 5 ‘Very unhappy or worried’

In this study of a sample of Arabic-speaking women (n=354) at Time 1, the mean score on the EPDS was 4.1 (SD=4.5) and at Time 2, the mean score on the EPDS was 3.7 (SD=4.8). The EPDS identified 79 women (22%) with a score of 7 or more at Time 1, indicating that these 79 women were possibly depressed or anxious as per the optimal cut-off score. Those women scoring 6 or less on the EPDS are referred to not possibly depressed or anxious. At Time 2, the EPDS identified 47 women (25%) with a score of 7 or more indicating that these 47 women were possibly depressed or anxious.

It is of note that there was a significant difference in the scores for EPDS at Time 1 in Saudi women (M=5.5, SD=4.9) and non-Saudi women (M=3.3, SD=4.4); t (352) = 4.7, p <.01. These results suggest that EPDS scores are significantly higher in Saudi women compared to non-Saudi women.

MGMQ identified 163 (46%) women at Time 1 who responded yes or possibly to the question. However, it is important to consider how bothered those women were about their feelings: 114 (32%) women endorsed they were bothered moderately or a lot by their feelings. The results suggest there was significant statistical differences between the two percentages, t(353)=3.021, p=.003. At Time 2, the number of women was reduced to 100 women who endorsed ‘Yes’ or ‘Possibly’. There was no significant
difference between the rate of women who were bothered by their feeling and the ‘Yes’ or ‘Possibly’ question (28% vs 24%; t(184)=0.756, p=.451).

It is of note there was a significant difference in the percentage of MGMQ at Time 1 in Saudi women (55%) and non-Saudi women (41%); t(353)=2.716, p=.007. These results suggest that MGMQ are significantly higher in Saudi women compared to non-Saudi women. However, there was non-significant difference in the percentage of MGMQ ‘bothering question’ at Time 1 in Saudi women (72%) and non-Saudi women (68%); t(353)=0.636, p=.525.

For Faces Scale, at Time 1 34% of women endorsed Face 4, 5 or 6 which was higher compared 14% of women who endorsed Face 4 or 5. The results suggest that there was significant statistically difference between the two rates, t(353)=5.673, p<.001. At Time 2, the rates were similar and there was no significant difference between the rates (28% vs 22%; t(184)=1.158, p=.248). The rate decreased once Face 6 (sometimes feeling happy and calm + other times feeling unhappy and worried) was not considered. Face 6 includes a mixed mood feeling, which could mean women felt happy on most days and few days felt sad. This face therefore could not reflect whether women were possibly depressed or anxious. Faces 4 or 5 are likely to reflect whether the women are possibly depressed or anxious for most of the day or nearly every day given in the timeframe specified for the scale.

It is of note that there was a significant difference in the percentage of Faces Scale (Face 4 or 5) at Time 1 in Saudi women (25%) and non-Saudi women (8%); t(353)=5.829, p<.001. These results suggest that prevalence rate based on Faces Scale is significantly higher in Saudi women compared to non-Saudi women.
4.6.2.5 Discussion

The rate of Depression found in this study was 19.5%, [14.6-26.2] DSM-IV Depression (Major or Minor), 16.2% DSM-IV Major Depression and 3.2% Minor Depression. The prevalence of PPD in the study sample was higher than rates reported in other studies (Amr & Balaha, 2010; Hamdan & Tamim, 2011; Liabsuetrakul, Vittayanont & Pitanupong, 2007) (which all used DSM-IV Depression criteria). However, some studies have reported similar prevalence in their studies (e.g. Agoub et al., 2005; Mchichi Alami et al., 2006).

For Anxiety disorders, the prevalence rate in this study, using DSM-IV MINI was 24.9%, [20.5, 33.2], which is inconsistent with the results of other studies. Reck et al. (2008) reported 11.1%, [9.3-13.2] of mothers met criteria for DSM-IV anxiety disorders at three months postpartum. Other studies found similar rates to Reck et al. (Amr & Balaha, 2010; Paul et al., 2013).

Although the sampling method used in the current study was random sampling, there was substantial difference in the compositions of Saudi and non-Saudi women between the study sample. The current study sample was comprised of mostly non-Saudi women (63.3%). The reasons for the under-representation of Saudi women in the sample are likely to be due to the cultural factors. Cultural factors are likely to be restricted mobility of Saudi women, strict practice of the 40-day period or being unable to share their feelings.

It is of note that the rate of Depression and Anxiety was significantly higher in Saudi women compared to non-Saudi women. The high rates may be related to the cultural factors. Cultural factors are likely to be restricted mobility of Saudi women, strict practice of the 40-day period or being unable to share their feelings.

Nevertheless, this finding supports the previous research, which found high rates of Anxiety disorders during the postpartum period (most research has investigated Postpartum Depression: it is known as the most prevalent mental disorder during the postnatal period). Therefore, the present study highlights the importance of screening women in the postpartum period for Depression and Anxiety.
The impact of attributional probing of Major Depression is significant, given that the Major Depression rate significantly dropped (16.2% to 8.1%, t (184) =2.266, p=.025) when the probed criteria was taken into consideration. The results showed the rate of Major or Minor Depression (19.5% to 11.9%, t (184) =1.862, p=.064) has dropped, which was not statistically significant. However, 22 (61%) out of 36 women endorsed symptoms used in the diagnosis of Depression not because they consider them to be mood related symptoms, but because they consider them to be due to the practical demands of having a baby. The non-significant difference could be due to the effect of Minor Depression. However in case of Minor Depression, the difference in the rates of the usual DSM criteria and probed criteria was not significant due to the small number of women. It is important to note that of the six women with Minor Depression, three of these no longer met criteria of Minor Depression. However, some of those no longer meeting criteria for Major Depression now met criteria for Minor Depression. Hence seven women (3.8%) met criteria of probed Minor Depression and this accounts for why Major or Minor Depression is not significant.

The impact of attributional probing on the prevalence rate of Anxiety disorders appeared significant (24.9% to 15.1%, t(184)=2.133, p=.034). For each Anxiety disorder, there was a drop in the rates when attributional probing was considered; however, the differences between the percentages were not statistically significant. It could be due to the effect of the small number of women. For example, in the case of Panic Disorder, while the numbers are small (n=3), one of the three participants for whom attributional probing was done no longer met criteria for the diagnosis.

These findings support previous research on the possibility of the overlap between Depression or Anxiety symptoms and normal postpartum life (e.g. Stowe & Nemeroff, 1995; Csatornai et al., 2009). Symptoms such as difficulty sleeping, feeling tired, lack of concentration, reduced appetite, or weight loss may occur in both Depression or Anxiety and postpartum women, which can overestimate the rate of Depression or Anxiety and this overestimated rate can result in pathologising of those women as Depressed or Anxious.

A study by Matthey and Ross-Hamid (2011) assessed the validity of Depression and Anxiety symptoms in the diagnostic interview in pregnant women and assessed the prevalence of Depression and Anxiety using usual DSM criteria and probed criteria.
The usual DSM criteria of Depression resulted in prevalence of 14.4%, whereas the probed criteria gave a prevalence of 8.5%. However, the usual DSM criteria of Anxiety resulted in prevalence of 16.9%, whereas the probed criteria gave a prevalence of 15.3%. The impact on the rate of Depression was higher than Anxiety. Matthey and Ross-Hamid argue that if the DSM criteria are applied rigidly without using attributional probing, the rate of Depression based on DSM criteria will be substantially inflated.

The findings from this study support the assumption that the rate of PPD and Anxiety is likely to be inflated if attributional probing is not used. In this study, women were asked about whether they thought the symptoms are related to the practical demands of having a baby or because of their mood or worries. Women’s practical symptom attributions have face validity; for example, to feel one is not enjoying life because her baby is still young. However, from the qualitative findings (Chapter 5: section: 5.8) it is clear that women do not consider PPD as a problem. Hence, it is possible that women’s view of the causes of their symptoms is not valid given that mental health issues in Saudi Arabia are highly stigmatised. Therefore, women may relate their symptoms to the practical demands of having a baby because of the stigma. Studies show that women are reluctant to admit their symptoms because of many other underlying causes such as they are fearful of the consequences (Mauthner, 2002; Zauderer, 2009).

Using the EPDS to assess the prevalence rate was also examined in this study, and a high prevalence rate was found. The prevalence based on the EPDS was 22.8% of women who participated in the study (i.e. scored 7 or above on the EPDS based on the validated cut-off score in this study) for possible Postpartum Depression or Anxiety. Recent studies in the Saudi population reported the rate of PPD using the EPDS ranging from 17.8% to 33.2% (Alasoom & Koura, 2014; Al-Johani, 2007; Alharbi & Abdulghani, 2014), and the prevalence of PPD in Arabic countries ranges from 12% to 37% (Green et al, 2006; Ghbash & Abou-Saleh, 1997; Al Hinai & Al Hinai, 2014; Saleh et al., 2013; Alami et al., 2006; Agoub et al., 2005; Chaaya et al., 2002; El-Hachem et al., 2014; Al Dallal & Grant, 2012; Yehia et al., 2013; Mohammed et al., 2011).

Significant differences in the prevalence rates of Postpartum Distress were observed by using different measures. The prevalence rate based on the structured diagnostic
interview had low prevalence rate, accounting for 19.5% and 24.2% for Depression and Anxiety respectively. Meanwhile, the highest prevalence rate was found using the MGMQ, representing 46%; however, it is 32% if the ‘bother’ criteria is considered. Women could feel unhappy or anxious for various reasons after childbirth, due to normal postpartum life and the baby’s demands. It is not the feeling but it is how bothered they feel that make it a pathological symptom. Issues have been raised regarding the usefulness of including the impairment criterion of DSM criteria. The impairment criterion in DSM has been added to determine the diagnosis of mental disorder and reduce false positive cases (Narrow, Rae, Robins, & Regier, 2002). Studies suggest the impairment criteria would not add any benefits to determining the presence of a disorder (Wakefield, 1997; Spitzer & Wakefield, 1999; Zimmerman, Chelminski, & Young, 2004). However, the bother question in MGMQ would add significance in determining the true cases who are bothered by their feeling. The prevalence rate of MGMQ (yes or possibly) decreased once the bother criteria were taken into consideration. Therefore, using bother criteria is likely to reduce the possibility of high false positive cases.

The rate based on the Faces Scale reported higher than EPDS but similar to the ‘bother’ criteria of MGMQ. The Faces Scale using three faces (Face 4, 5 or 6) found an increased rate of possible Depression or Anxiety and would increase false positive cases. However, using Face 4 or 5, which specifically asks about feeling depressed or anxious over the last two or three weeks, would estimate if women are possibly depressed or anxious most of the days in the specified period. It was difficult to compare the rates from Faces Scale to other studies as the sale was developed for this study. Therefore, further studies need to use Faces Scale using Face 4 or 5 and compare the findings.
4.6.3 Research Question 3:

*How do screening performance of the EPDS, Faces Scale for happiness and Anxiety and MGMQ compare to the DSM diagnostic criteria for Depression and Anxiety?*

4.6.3.1 Correlations and concordance between the measures

The focus of this analysis is how the EPDS, MGMQ, Faces Scale and MINI compare in detecting women’s emotional mood difficulties. Table 4.18 shows the correlations between each of the self-report measures, which are low to moderately correlated (see statistical consideration section 3.4.4).

*Table 4.18: Correlations between each measure using Time 1 data (n=354) (Time 2 data for DSM Postpartum Distress correlations)*

<table>
<thead>
<tr>
<th>Measures</th>
<th>EPDS</th>
<th>MGMQ (Yes/possibly)</th>
<th>MGMQ bothering</th>
<th>Faces Scale</th>
<th>DSM Postpartum Distress</th>
<th>DSM probed Postpartum Distress</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDS</td>
<td>-</td>
<td>0.47**</td>
<td>0.47**</td>
<td>0.35**</td>
<td>0.59**</td>
<td>0.51**</td>
</tr>
<tr>
<td>MGMQ yes /possibly</td>
<td></td>
<td>-</td>
<td>-</td>
<td>0.48**</td>
<td>0.58**</td>
<td>0.51**</td>
</tr>
<tr>
<td>MGMQ bothering</td>
<td></td>
<td>-</td>
<td>0.42**</td>
<td>0.52**</td>
<td>0.42**</td>
<td></td>
</tr>
<tr>
<td>Faces Scale</td>
<td></td>
<td>-</td>
<td>-</td>
<td>0.55**</td>
<td></td>
<td>0.51**</td>
</tr>
</tbody>
</table>

Note. * a point-biserial correlation  
* b Cramer’s phi coefficient  
* P value <.01

Table 4.18 shows the correlations between high scorers on each measure. The EPDS is the most well-established measure and it has also been used in Arabic populations. It is an extremely useful scale to identify Depression, and has some questions for Anxiety symptoms as well. General mood questions such as MGMQ or Faces Scale seem to be a useful in screening women in Saudi Arabia.

In this analysis, a comparison between the measures detecting women’s Postpartum Distress was performed. Table 4.19 shows EPDS detects 68%, whereas MGMQ (Yes or
Possibly) detects 70% of Postpartum Distress based on usual DSM criteria \[t(184)=0.232, p=.817\]. The results suggest there is no statistical difference between the two percentages and both measures perform similarly at detecting distress. Faces Scale detects 56% of Postpartum Distress compared to EPDS (68%), however there was no statistical difference between the percentages, \[t(184)=1.474, p=.142\].

When the attributional probing is considered, there was no statistically difference between the measures (EPDS: 70% and MGMQ: 73%) in detecting Postpartum Distress; \[t(184)=0.341, p=.733\]. The MGMQ (yes or possibly) detects 73% of Postpartum Distress compared to Faces Scale (59%), however the results suggest there was no significant difference between the two measures, \[t(184)=1.67, p=.097\].

The bother question of MGMQ performs better than the EPDS at detecting distress on the other measure (e.g. Bother question on MGMQ detects 84% of high scorers on EPDS, but EPDS only detects 46% of bother question on MGMQ, \[t(184)=4.808, p<.001\]). The Faces Scale, however, is lower than the EPDS at detecting distress on the other measure (e.g. Faces Scale detects 37% of high scorers on EPDS, but EPDS only detects 58% of high scorers on EPDS: \[t(184)=3.001, p=.003\].
Table 4.19: Concordance between measures detecting ‘High’ scores, using data from Time 1, except DSM Depression and Anxiety data from Time 2

<table>
<thead>
<tr>
<th>Per cent detected by</th>
<th>EPDS</th>
<th>MGMQ&lt;sup&gt;a&lt;/sup&gt; Yes or Possibly</th>
<th>MGMQ&lt;sup&gt;b&lt;/sup&gt; Bothering</th>
<th>Faces Scale</th>
<th>DSM Postpartum Distress</th>
<th>DSM probed Postpartum Distress</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDS</td>
<td>-</td>
<td>38%</td>
<td>46%</td>
<td>58%</td>
<td>68%</td>
<td>70%</td>
</tr>
<tr>
<td>MGMQ&lt;sup&gt;a&lt;/sup&gt;</td>
<td>78%</td>
<td>-</td>
<td>-</td>
<td>78%</td>
<td>70%</td>
<td>73%</td>
</tr>
<tr>
<td>Bothering&lt;sup&gt;b&lt;/sup&gt;</td>
<td>84%</td>
<td>-</td>
<td>-</td>
<td>77%</td>
<td>60%</td>
<td>59%</td>
</tr>
<tr>
<td>Faces Scale&lt;sup&gt;c&lt;/sup&gt;</td>
<td>37%</td>
<td>24%</td>
<td>26%</td>
<td>-</td>
<td>56%</td>
<td>59%</td>
</tr>
<tr>
<td>DSM Postpartum Distress</td>
<td>72%</td>
<td>69%</td>
<td>68%</td>
<td>70%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DSM probed Postpartum Distress</td>
<td>55%</td>
<td>53%</td>
<td>50%</td>
<td>55%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. Postpartum Distress: Depression (Major or Minor) or Anxiety.
<sup>a</sup> MGMQ: in the last two weeks, have you felt very stressed, anxious, or unhappy or found it difficult to cope, for some of the time? Answers considered high: yes or possibly.
<sup>b</sup> Bothering question: How bothered have you been by these feelings? Answers were considered bothered ‘moderately’ or ‘a lot’
<sup>c</sup> Choosing face 4 ‘Unhappy or worried’ or face 5 ‘Very unhappy or worried’

Table 4.20 shows the test characteristics of each measure. These findings indicate that more cases of Postpartum Distress are identified by EPDS and MGMQ compared to the Faces Scale.
<table>
<thead>
<tr>
<th>Measures</th>
<th>Usual DSM criteria</th>
<th>Probed criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensitivity</td>
<td>Specificity</td>
</tr>
</tbody>
</table>

Note: [95% CI]; Postpartum distress: Depression (Major or Minor) or Anxiety; PPV=Positive Predictive Value; NPV=Negative Predictive Value.
MGMQ: in the last two weeks, have you felt very stressed, anxious, or unhappy or found it difficult to cope, for some of the time? Answers considered Not coping: yes or possibly; Bothering question: how bothered have you been by these feelings? Answers were considered bothered ‘moderately’ or ‘a lot; *Choosing face 4 ‘Unhappy or worried’ or face 5 ‘Very unhappy or worried
4.6.3.2 Discussion

Other different self-report measures have been used in postnatal women to detect Postpartum Distress. It is important to consider other screening tools, which are reliable and also culturally appropriate for screening women in Saudi Arabia.

In this analysis, the performance of several different self-report measures (including EPDS, MGMQ and Faces Scale) has been examined. The findings suggest the EPDS and MGMQ perform similarly at detecting women with Postpartum Distress using usual DSM criteria and using the probed criteria. However, the bother question of MGMQ performs better than the EPDS at detecting distress on the other measure (sees section 4.6.3.1). The results found there were no significant differences in performance of EPDS, MGMQ (yes or possibly) and Faces Scale at detecting distress using usual DSM criteria and the probed criteria.

Clinically it is important to consider how an instrument performs at a particular threshold, therefore this analysis considered the performance characteristics at clinically relevant thresholds and the associated true positive and false positive rates.

When considering the sensitivity and specificity (and also PPV and NPV) of the instrument, it is essential to identify the optimal screening threshold at which women would be identified as a true positive case. The choice of this threshold or cut-off score is important to maximize the identification of true positive cases and also false positive cases, which can be ruled out by further psychosocial assessment. However, Altman (1999) suggests it is better to select a threshold based on sensitivity and NPV in screening contexts. This would identify the true positive cases that have Depression or Anxiety and the true negative cases who do not have Depression or Anxiety. However, it is important to consider the false positive cases, given that the cost of screening programs needs to be carefully considered. Gavin and colleagues (2015) suggest that the treatment cost of false positives results in potentially high costs in screening programs. Therefore it is important to consider the value of PPV, which identifies the percentage of women who screen positive who do not have Depression or Anxiety when examined clinically.

In this study, EPDS cut-off scores were determined using a ROC curve, where the maximum combination of sensitivity and specificity was calculated. The test
characteristics of MGMQ (yes or possibly) showed similar sensitivity and specificity to EPDS. However, Faces Scale and MGMQ (bother question) showed lower sensitivity compared to the other scales, but similar high specificity. All measures showed a high PPV which means that around 30%-40% of women who screened positive would not have Depression or Anxiety when examined clinically. Therefore, further psychosocial assessment is needed to assess Depression or Anxiety.

EPDS and MGMQ performed similarly well in concordance analysis and test characteristics in detecting Postpartum Distress using usual DSM criteria and the probed criteria. MGMQ (bother question) offer superior performance at detecting Postpartum Distress on the other measures. The MGMQ (bother question) gave low sensitivity but high specificity in detecting Postpartum Distress. However, in clinical practice, it is recommended that one tool be chosen for screening purposes, as described earlier in Chapter 3 (Literature review). Therefore, the screening tool needs to be assessed as to whether it is culturally appropriate for use in the specified population. Research suggests that item 10 (thoughts of self-harm) in the EPDS would be not culturally appropriate for Arabic-speaking women (Matthey et al., 1997; Brealey et al., 2010). Women might not be willing to answer this item honestly due to the cultural prohibition on admitting thoughts or attempts of suicide. In this study, 2.3% of women responded to item 10 on EPDS. Qualitative findings confirmed the assumption of previous research. When women spoke of suicide as an impact of Postpartum Depression, they rarely mentioned it during the interviews and when they talked about it they preceded it with the words ‘God forbid’ to indicate that suicide is a serious outcome and they would not want it to happen. Therefore, in respect to the usefulness of the EPDS as a screening tool for identification of women who have suicidal feelings (thoughts or attempts), it is likely many Arabic-speaking women would not endorse this item even if they have had thoughts or attempts of self-harm.

Nonetheless MGMQ could be a culturally appropriate screening tool to detect Postpartum Distress in Arabic-speaking women. The context of MGMQ allows assessment of the broader symptoms of Anxiety, Depression or Stress instead of relying on specific symptoms of Depression or Anxiety. MGMQ contains general questions to obtain quick screening of any distress that could occur in the perinatal period.
Faces Scale was developed for this study as it was suggested it may be a suitable self-report measure of Depression and/or Anxiety for illiterate or low-educated Saudi women. The findings showed that Faces Scale performed below the other measures at detecting Postpartum Distress and reported low sensitivity. It may be due to that the percentage of illiterate women (2.3%) was very low compared to the previous reported rates (Ghubash & Abu-Saleh, 1997; Chaaya et al., 2002; Agoub et al., 2005; Alasoom & Koura, 2014). Therefore, the findings did not support that Faces Scale could be a suitable self-report measure of Depression and/or Anxiety.
4.6.4 Research Question 4

What are the transient and enduring distress rates?

At Time 1, 354 women completed the measures and 185 women completed them at Time 2. A high drop-out rate of approximately 48% (n=169) from Time 1 to Time 2 was identified and discussed in section 4.5.2: Drop-out analysis).

Table 4.21 shows the number and percentage of women who scored high at Time 1 who no longer scored high at Time 2, using EPDS, MGMQ and Faces Scale. This indicates that approximately a third of the women who initially scored high on EPDS no longer scored high two weeks later and approximately half the women who initially scored high on MGMQ and Faces Scale no longer scored high two weeks later.

Table 4.21: Number of women who had Transient and Enduring Distress according to each measure

<table>
<thead>
<tr>
<th>Measures</th>
<th>Scored high at Time 1 &amp; completed Time 2</th>
<th>Enduring Distress</th>
<th>Transient Distress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 or more</td>
<td>38</td>
<td>27(71%)</td>
<td>11(29%)</td>
</tr>
<tr>
<td><strong>Faces Scale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face 4 or 5</td>
<td>25</td>
<td>12(48%)</td>
<td>13(52%)</td>
</tr>
<tr>
<td><strong>MGMQ</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes/possibly</td>
<td>86</td>
<td>36(42%)</td>
<td>50(58%)</td>
</tr>
<tr>
<td>Bothered question</td>
<td>77</td>
<td>25(32%)</td>
<td>52(68%)</td>
</tr>
</tbody>
</table>

Note. EPDS= Edinburgh Postnatal Depression Scale;
MGMQ (yes or possibly) in the last two weeks, have you felt very stressed, anxious, or unhappy or found it difficult to cope, for some of the time? Answers considered not coping: yes or possibly;
Bothering question: how bothered have you been by these feelings? Answers were considered bothered ‘moderately’ or ‘a lot;
Faces Scale (Face 4 or 5) = Choosing face 4 ‘Unhappy or worried’ or face 5 ‘Very unhappy or worried’
4.6.4.1 Discussion

The results section of Transient and Enduring Distress reported the proportion of women who scored high at Time 1 but who no longer scored high at Time 2 in different self-report measures.

Using a cut-off of 7 or more, 29% of women who scored high on EPDS no longer scored high two weeks later. However, using MGMQ and Faces Scale, half of the women who scored high at Time 1 no longer scored high two weeks later. This study has confirmed findings from other studies (Wickberg & Hwang, 1996; Ballestrem et al., 2005; Milgrom et al., 2005; Matthey & Ross-Hamid, 2012) that show that many women scoring at or above the cut-off score on the EPDS will score low on the EPDS just a few weeks later. In Wickberg and Hwang’s (1996) study, 1,655 women at two months postpartum had two-stage screening using EPDS (cut-off score of 12 or more). The study found the rate of high scoring women had dropped from 12.5% at Time 1 to 4.3% at Time 2 (one month later). Similarly, Ballestrem and colleagues (2005) found a big drop in the rate of high scoring women (17% to 3.7%) in a sample of 772 women who were re-tested three weeks later. These studies had a large sample size compared to the current study as can be seen; there was an enormous drop of the rates of high scoring women in both studies. However, Milgrom and colleagues (2005) screened 4,148 women twice and reported 21.5% of high scoring women no longer scored high on EPDS (12 or more) after two weeks.

Previous studies found women’s reasons for the drop in the scores are anticipated. At Time 2, in this study women were asked to provide their reasons of such drop. Most of the women indicated that due to the practical demands of having a baby was the main reason for changing their mood. Others described personal problems which were solved and therefore their mood improved.

The women who scored high on Time 1 could change their scores in the second testing due to the statistical phenomenon of regression to the mean. Therefore, the researcher has looked at this aspect in two ways. First, women’s reasons for their apparent change in mood were assessed. At Time 2, women were asked about their reasons when their scores had changed. Reasons for mood improvement are mainly related to: i) external stressors have been depleted (e.g., “I had a conflict with my husband and now we have...
sorted it out”. ii) Improved the symptoms related to the postpartum period (e.g., “sleepless was my problem with my son and now I have managed to sleep while he is asleep” ..). These reasons would suggest that the change in women’s scores in the second testing is likely to be a real change in mood, and not just due to measurement error.

Another way is to look at the reliable change index (RCI) of EPDS to see if there is measurement error. As reported by Matthey (2004), 4 or more points change being needed at the 95% confident level to indicate a real change has occurred, and that the change is not likely to be due to measurement error. In this study, out of 11 women who had transient distress, 9 (81.8%) women reduced their EPDS score by 4 or more points, thus indicating that a real change in mood had occurred.

Currently most prevalence studies reported rates based on a single administration of the scales which therefore will lead to unnecessary referral to mental health services simply because they have transient distress. Therefore, many studies recommend a repeat testing procedure (e.g. Beyondblue, 2011; Matthey & Ross-Hamid, 2012; Milgrom et al., 2005; Wickberg & Hwang, 1996), which could significantly reduce the negative consequences of women being labelled with mental illness based on a single administration of EPDS and overuse of health services.
4.6.5 Research Question 5

What is the validity for Arabic-speaking women of the Being a Mother measure, (BaM-13: a self-report measure of a woman’s experiences of motherhood)

The validation has been assessed to explore if BaM-13 is valid and meaningful for Arabic women, in particular for women who score positive for mood difficulties using other measures. BaM-13 is a 13-item self-report scale specifically designed to examine the wider domain of the woman’s experience of motherhood over the previous two to three weeks. Each item is scored on a 4-point scale (from 0–3), with a total score ranging from 0 to 39 (see Section 4.3.6.7). While the BaM-13 is not used to screen for possible mood difficulties, it would be expected that women meeting criteria for depressed or anxious mood would score differently than women who do not report such mood difficulties. Do women who say they are ‘bothered’ on the MGMQ score differently? Does BaM-13 discriminate between women who are shown on other validated measures as having mood difficulties? In order to answer these questions, testing of the validity and reliability and other properties of BaM-13 was carried out in the sample of Arabic-speaking women living in Saudi Arabia.

Reliability of BaM-13

1. **Test–retest reliability:** Test–retest reliability was calculated for 185 mothers between two administrations (range 14–21 days). Paired sample correlation was calculated on the total scores of BaM-13. A Spearman’s correlation of +0.68, 95 CI [0.58-0.76], p<0.01 was obtained, which was deemed acceptable.

2. **Cronbach’s alpha:** The Cronbach’s alpha coefficient of the BaM-13 was 0.89, which is considered acceptable (Cortina, 1993).
Validity of BaM-13

**Discriminant validity**

Statistically and clinically significant differences on the BaM-13 were obtained for women on the dimensions of better/poorer on the DSM criteria, MGMQ, Faces Scale.

**DSM criteria for Postpartum Distress (Major and Minor Depression and Anxiety)**

There was a significant difference (t (183) = -5.32, p<0.01) in the average scores for BaM-13 for women who met the diagnostic criteria of Postpartum Distress (M=11.6, SD= 5.7) and women who did not meet the diagnostic criteria (M=6.4, SD=5.6).

**EPDS**

There was a significant difference (t (352) = -9.46, p<0.01) in the average scores for BaM-13 for women who score 7 or more on EPDS (M=12.6, SD= 6.2) and women who scored 6 or below on EPDS (M=6.1, SD=5.1).

**MGMQ**

There was a significant difference (t (352) = -11.25, p<0.01) in the average scores for BaM-13 for women who reported that they have, or may have, felt sad, depressed or very anxious for more than half the previous two weeks (M=10.6, SD= 5.8) and women who said ‘No’ (M=4.7, SD=4.6).

**MGMQ (bother question)**

There was a significant difference (t (352) = -2.48, p<0.01) in the average scores for BaM-13 for women who reported that they were moderately or a lot bothered by their feelings (M=11.6, SD= 5.7) and women who said ‘No’ (M=9.2, SD=5.8).

**Faces Scale (Face 4 or 5)**

There was a significant difference (t (352) = -4.47, p<0.01) in the average scores for BaM-13 for women who reported that distressed on Faces Scale (Face 4 or 5) (M=11.0, SD= 5.7) and women who were not distressed (M=7.0, SD=4.5).
**Face Validity**

The BaM-13 was acceptable to the mothers in Saudi Arabia. Face validity was determined to be applicable and meaningful in the pilot study. During the main study, mothers viewed BaM-13 covering the concept it purports to measure. For example, a new mother of 3 weeks old baby commented over the phone at the time of re-assessment:

*Compared to all the [other] questions you have asked me, the BaM-13 questions describe exactly what I feel now. I have missed the life I had before I became pregnant; I have found it hard to cope when my baby cries, especially when I go outside; and I worry I am not as good as other mothers.*

**Concurrent validity**

The result on 354 mothers who completed the BaM-13 and EPDS at Time 1 was a positive moderate correlation of +0.61, 95 % CI [0.54, 0.68], p<.001. This indicates that while there is a moderate correlation between the two scales, as Matthey (2011a) reported for English-speaking women, they are nevertheless measuring different constructs.

**Cut-off scores**

Matthey (2011a) determined a cut-off score of 9 or more for English-speaking women, and this has been calculated against the Matthey Generic Mood Question (MGMQ; Matthey et al., 2013) that assesses Stress (Depression, Anxiety or Distress). This study also examined the appropriate cut-off scores for Arabic women against MGMQ, as BaM-13 is not used to screen for possible mood difficulties as pointed out earlier.

ROC analyses of different cut-off scores are shown in Table 4.22. At the cut-off score of 8 or more, the sensitivity is 79.6%, specificity 70.3%, PPV is 46.1% and NPV is 91.5%. The ROC curve obtained by plot at different cut-offs is shown in Figure 4.3. The area under the curve (AUC) is 0.784, with SE = 0.038 and 95% CI from 0.718 to 0.842.
Table 4.22: The sensitivity, specificity, PPV and NPV for different BaM-13 cut-off score compared to MGMQ (Yes/Possibly) (gold standard)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>PPV</th>
<th>NPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 or more</td>
<td>90.9%</td>
<td>34.8%</td>
<td>30.8%</td>
<td>92.3%</td>
</tr>
<tr>
<td>4 or more</td>
<td>90.9%</td>
<td>43.5%</td>
<td>33.9%</td>
<td>93.7%</td>
</tr>
<tr>
<td>5 or more</td>
<td>90.9%</td>
<td>49.3%</td>
<td>36.4%</td>
<td>94.4%</td>
</tr>
<tr>
<td>6 or more</td>
<td>88.6%</td>
<td>59.4%</td>
<td>41.1%</td>
<td>94.3%</td>
</tr>
<tr>
<td>7 or more</td>
<td>86.4%</td>
<td>61.6%</td>
<td>41.8%</td>
<td>93.4%</td>
</tr>
<tr>
<td>8 or more</td>
<td>79.6%</td>
<td>70.3%</td>
<td>46.1%</td>
<td>91.5%</td>
</tr>
<tr>
<td>9 or more</td>
<td>68.2%</td>
<td>73.2%</td>
<td>44.8%</td>
<td>87.8%</td>
</tr>
<tr>
<td>10 or more</td>
<td>54.6%</td>
<td>76.8%</td>
<td>42.9%</td>
<td>84.1%</td>
</tr>
<tr>
<td>11 or more</td>
<td>52.3%</td>
<td>80.4%</td>
<td>46.0%</td>
<td>84.1%</td>
</tr>
<tr>
<td>12 or more</td>
<td>45.5%</td>
<td>85.5%</td>
<td>50.0%</td>
<td>83.1%</td>
</tr>
<tr>
<td>13 or more</td>
<td>40.9%</td>
<td>89.1%</td>
<td>54.5%</td>
<td>82.6%</td>
</tr>
</tbody>
</table>

Note. PPV=Positive Predictive Value; NPV=Negative Predictive Value.

MGMQ: in the last two weeks, have you felt very stressed, anxious, or unhappy or found it difficult to cope, for some of the time? Answers considered Not coping: yes or possibly;

Factor analysis

A principal component analysis (PCA) was conducted on the 13 items, with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = 0.78 (‘good’ according to Field (Field, 2009), all the KMO values for individual items were > 0.6, which is above the acceptable level of 0.5 (Field, 2009). Bartlett’s test of sphericity $\chi^2(78) = 896.433$, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Three components had eigenvalues over Kiaser’s criterion of 1 in combination and explained 49.46% of the variance. Component one consisted of questions 5, 6, 7 and 8; component two consisted of questions 4, 9, 12 and 13; component three consisted of questions 1, 2, 3, and 10 (see Table 4.23).
Figure 4.3: Scree plot for three-factor solution of Arabic version of BaM-13

![Scree Plot]

Table 4.23: Factor analysis of the Arabic version of BaM-13 (Time 1; n=354)

<table>
<thead>
<tr>
<th>BaM-13</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1 I have felt confident about looking after my baby</td>
<td>.534</td>
</tr>
<tr>
<td>2 I have missed the life I had before I became pregnant with this</td>
<td>.643</td>
</tr>
<tr>
<td>baby</td>
<td></td>
</tr>
<tr>
<td>3 I have found it hard to cope when my baby cries</td>
<td>.621</td>
</tr>
<tr>
<td>4 I have felt close to my baby</td>
<td>.731</td>
</tr>
<tr>
<td>5 I have felt lonely or isolated</td>
<td>.796</td>
</tr>
<tr>
<td>6 I have felt bored</td>
<td>.571</td>
</tr>
<tr>
<td>7 I have felt unsupported</td>
<td>.799</td>
</tr>
<tr>
<td>8 I have felt alright about asking people for help or advice when I</td>
<td>.643</td>
</tr>
<tr>
<td>needed to</td>
<td></td>
</tr>
<tr>
<td>9 I have felt nervous or uneasy around my baby</td>
<td>.479</td>
</tr>
<tr>
<td>10 I have been worried that something would happen to my baby</td>
<td>.703</td>
</tr>
<tr>
<td>11 I have been annoyed or irritated with my baby</td>
<td></td>
</tr>
<tr>
<td>12 I worry I am not as good as other mothers</td>
<td>.621</td>
</tr>
<tr>
<td>13 I have felt guilty</td>
<td>.687</td>
</tr>
</tbody>
</table>

Note. Extraction Method: Principal Component Analysis. Rotation: Varimax. Eigen values >.1. Factor loadings below 0.4 are not presented.
4.6.5.1 Discussion

This study also examined the validity of the Arabic version of BaM-13. In the original paper describing BaM-13 (Matthey, 2011), the optimal cut-off score to assess women’s experiences of motherhood was found to be 9 or more for English-speaking women. This scale has not yet been translated into Arabic and this current study is the first validation study to evaluate the reliability and validity of the Arabic BaM-13 scale. The Arabic translation of BaM-13 shows good psychometric properties. Among 346 postpartum mothers, the reliability coefficient was higher (0.68) than that found (0.52) by Matthey (2011a). It is apparent that the BaM-13 for Arabic women can discriminate between women who are or are not experiencing significant mood difficulties. The Arabic BaM-13 had a moderate correlation with the EPDS.

Results of factor analysis show three factor structures that are similar to those noted in Matthey’s study. Matthey (2011a) described three factors as Child’s experience; Adult’s experience and Emotional closeness; however, in this study, items that load in each factor are different to English version. Factor one loaded most of the items of child’s experiences; however, the other factors, including adult’s experience and emotional closeness, are mixed compared to the three factor structures in Matthey’s study. This may explain how Arabic women and English women experience their motherhood differently. Items loaded in factor two (emotional closeness) in Arabic women include closeness to the baby, nervous or uneasy around the baby, worries as she is not good as other mothers and feeling guilty, whereas in the English version items included feeling un-confident looking after the baby and closeness to the baby.

The first validation study (Matthey, 2011) suggested a cut-off score of 9 or more for use of the scale by English-speaking women (sensitivity 72.5%, specificity 74.4%, and PPV 34.9%, validated against MGMQ); however, the cut-off score of 8 or more used in this study was lower than that obtained from the English version (sensitivity 79.6%, specificity 70.3%, and PPV 46.1%). One possible reason for this might be that several different populations of mothers were recruited in each study. Matthey recruited community mothers, ‘baby care mothers’ and ‘treatment mothers’ with younger and older infants/toddlers, which is not the case in the sampling criteria used in this study. Thus, women with young infants may have a more difficult experience compared to those with toddlers (Brown, 1994), which is the case in this study. Bhopal (1998) argues
that experiences of motherhood may be different with different ethnicity. This study did not investigate this argument, but it could be that differences in socioeconomic factors or types of support available during the transition to motherhood have an effect.

The results confirm that the Arabic BaM-13 has its validity in assessing a mother’s experience of and satisfaction with motherhood and reporting possible high levels of distress, and it can be used in conjunction with other Postpartum Depression scales in clinical services to improve assessment and in order to develop appropriate intervention programs.

4.7 Summary

This quantitative chapter has outlined the prevalence rate using the diagnostic criteria for Depression and Anxiety disorders and using different self-report measures. The prevalence rates reported from self-report measures were higher compared to those obtained using the diagnostic interview. These results indicate that women in Makkah, Saudi Arabia have a high level of Postpartum Distress (Depression and Anxiety) during the postpartum period. This study also supports the recommendations of other authors for repeat testing to report an accurate picture of the prevalence. When comparing different measures used to detect mood difficulties in postpartum women, the results suggest that if clinical services in Saudi Arabia wish to screen women during the postpartum period for possible Depression and/or Anxiety, then the MGMQ and Faces Scale will perform best. The EPDS is the most well-established self-report measure used worldwide and is recommended in screening for Postpartum Depression among Arabic-speaking women. Findings from the validation study of the EPDS indicate that the Arabic version is a reliable and valid measure of Depression in postpartum women, using a cut-off score of 7 or more. This study also confirms that the Arabic version of BaM-13 is a reliable and valid measure to discriminate between women who have tested positive on other validated measures as having mood difficulties.
Chapter 5

Qualitative study

5.1 Introduction

This chapter is divided into ten sections: sections 5.1 and 5.2 present the introduction and the research questions related to the chapter. In Section 5.3, the methodology, the methods used, data collection and data management and analysis are described. Section 5.4 outlines the qualitative findings from in-depth interviews conducted with women and primary health care providers. The last section presents the discussion of the qualitative findings in relation to the available literature on PPD as well as the conclusion to the chapter.

5.2 Research questions

The main research questions are:

1. How do women in Makkah, Saudi Arabia conceptualise PPD?
2. What are the barriers and facilitators for accessing mental health services?

5.3 Methodology

For this PhD study, given the limited understanding of PPD, it was necessary to use a research design that would enable me to understand the context or settings (Liampittong, 2013) that contribute to women’s understanding of PPD. A qualitative design was appropriate for such an understanding as it helps provide an in-depth exploration of participants’ perceptions, based on their beliefs and experiences (Al-Busaidi, 2008). Since little is known about PPD in Saudi Arabia, a descriptive qualitative approach allowed me the flexibility needed (Liamputtong, 2013) for a deeper understanding (Creswell, 2013; Denzin & Lincoln, 2009) of PPD. By using in-depth interviews as a method of data collection, I was able to explore the “emic” or insider’s
point of view (Denzin & Lincoln, 2009), which is crucial for developing recommendations and implementation of culturally relevant and personalised services that address the specific needs of women in Saudi Arabia.

5.3.1 Researcher’s stance

The researcher is the instrument of data collection in qualitative research (Creswell, 2013), and qualitative experts and scholars consistently emphasise the need to acknowledge the researcher’s stance (Creswell, 2013; Denzin & Lincoln, 2009; Patton, 2014) to ensure rigour of research (Patton, 2002) and enable the reader to make their own judgment regarding how and to what extent the researcher’s own background may have influenced the research process and/or findings. In this acknowledgment of researcher stance, it is recommended that the researcher’s linguistic and cultural background, theoretical stance, professional background and experience, as well as the relationship to the study participants, be clearly outlined upfront (Greenbank, 2003; Patton, 2014). Such explicit acknowledgment contributes to reflexivity (Dickson-Swift, James, Kippen, & Liamputtong, 2006) and therefore in this section I provide a brief description of my background.

I am a woman born to Saudi parents and raised in Makkah, Saudi Arabia, where I received my education from primary through to university. My father, who obtained his postgraduate education in the USA, is a professor in didactic management and planning. Perhaps because of his education, my father is a strong believer in women’s education and the impact this has on women’s personal lives and the world around them. As a result of these beliefs, he ensured that my siblings (three sisters and two brothers) and I had opportunities for tertiary education. All my sisters are academics, working in the areas of medical science, computer science and didactic management and planning.

I am a medical doctor; when I joined the medical school my cohort was only the third female intake in Makkah, as medical education had earlier been limited to males only. On graduation from medical school, I joined the teaching staff in the Family and Community Medicine Department at the university where I studied; I was then the second female Saudi academic on their entire staff. Along with my academic work, I also worked for two years as a general practitioner in a primary health care service at the Ministry of Health. After marriage, my husband, who is also a medical doctor,
continued to encourage me to pursue further education and hence I came to Australia to do a Master’s degree in Public Health and then a PhD at the University of New South Wales (UNSW), Australia.

Prior to moving to Australia I had given birth to my first child, a boy. I experienced a difficult time after giving birth, as I suffered complications during the delivery and afterward endured a lengthy period of pain due to delays in accurate diagnosis of my problems. I experienced PPD and, despite the practical and emotional support I received from my husband and my family, it took me a long time to deal with my emotional distress. As a qualified and experienced medical doctor, I recognised that I had PPD. I tried to hide it from everyone around me and manage it by myself rather than seeking professional help. However, my husband and mother also recognised my problem. They provided me with the emotional support, encouragement and practical support I needed.

Four years later I had my second child, a daughter, in Australia during the second year of my PhD studies. Although my parents came to be with me for the birth; they had to return home a month later. I missed my parents and I started experiencing some symptoms of what could have been PPD. Instead of feeling joyful, I was crying the whole day and feeling very lonely and isolated. I completed an EPDS test during the postpartum home visit, and my EPDS score was 10, which was borderline for possible Depression according to the Australian cut-off score (the cut-off score is 13 or more), which is why I was not diagnosed with PPD. I was facing many challenges daily: having a second child in a new country, having difficulties finding childcare, and working on my PhD. My husband continued to provide practical and emotional support and my supervisors were supportive, allowing me to work from home and having teleconference meetings until I found a place for my daughter in childcare. Although it was not easy for me to send a three-month-old baby to childcare, it was the only option for me to continue my PhD study in a country where I had no extended family support.

My own motherhood experience provided me with in-depth insights into women’s postnatal experiences. This experience allowed me to feel what any mother might go through in the transition to motherhood, and to better understand the stories of my participants and gain more in-depth insights into what they were telling me. I have experienced two pregnancies and two deliveries, the first was in Saudi Arabia and the second in Australia, and these experiences gave me a firsthand understanding of the
difficulties a new mother faces, particularly in the presence of socio-cultural pressure and other factors that could influence a woman’s mental wellbeing during the postpartum period. My familiarity with Saudi culture also provided insights into socio-cultural aspects of the society, helping me understand my participants’ perspectives, draw insights, and to understand what they were trying to convey in their interviews. However, I was quite conscious that my insider knowledge may lead me to disregard some important aspects which were obvious to me, as a Saudi mother. Similarly, during in-depth interviews it is possible that I may have unknowingly guided the discussion in a particular direction. It is therefore possible that I may have failed to explore some socio-cultural issues in depth during the interviews and in the analysis process. However, the use of the vignette questions with women and the interview guide with health care providers described in the following section should have minimised this. Throughout the research process, I was very aware of my own stance as the instrument of data collection and I engaged extensively in reflexivity (Liamputtong, 2007), keeping a journal and having extensive discussions with my supervisor to continuously question what I was doing, thereby minimising my own influence on the data collection and analysis process. I also took other measures to ensure the rigor of the research. These measures are described in Section 5.7.

5.3.2 Theoretical Framework

This descriptive qualitative study is informed by Kleinman’s explanatory model as a theoretical framework. Thus the questions in the vignette used in the in-depth interviews and the analysis of the data are based on the Kleinman’s explanatory models of illness (Kleinman, 1978). This model is extracted from ethnography, epidemiology, and social psychology to understand how Depression is identified and explained from a different perspective. Kleinman’s explanatory models of illness are adopted as a ‘theory’ in cross-cultural research when Kleinman compared explanations of the symptoms of Depression and neurasthesia in America and China (Kleinman, Anderson, Franker, Frankenberg & Young, 1986). Kleinman (1978) viewed health systems as cultural systems where culture is defined as “a system of symbolic meanings that shapes both social reality and personal experience” (p.86).
**Kleinman’s theory of the structure of the Health Care System**

According to Kleinman (1978) the health care systems as a local cultural system contain three overlapping parts: the popular, professional and folk sectors (Figure 5.1).

**Popular Sector:** includes the family context of illness and social networks and community beliefs and activities. Approximately 90% of illness managed within this sector.

**Professional Sector:** The professional arena is described by Kleinman (1980, p. 54) as “comprising of the organized healing professions”. This means it consists of Western biomedicine and indigenous healing methods, which explain the cause of illness as being within the human body and its biological processes.

**Folk sector:** includes non-professional healing specialists.

Health systems, according to Kleinman (1978), are cultural systems comprised of external (e.g. social and historical) and internal (e.g. psychophysiological and behavioural) factors. The treatment of illness and help-seeking practices in any society occur within these specific cultural systems. These sectors provide a framework for
understanding the different sectors that are culturally constructed within each society. This encompasses beliefs and behaviours regarding the aetiology of the illness, its cause, course, meaning of the illness and timing and onset of the symptoms. This framework is used to understand and discuss the qualitative findings of the women about the conceptualisation of PPD in this thesis.

Explanatory models include beliefs and expectations about the illness and the interaction with the mental health provider. Explanatory models of illness are influenced by culture and include how the person and their family believe about the cause, onset of symptoms, the pathophysiology, the course of illness and treatment (Kleinman, 1980). Explanatory models are recommended as a way to help practitioners to improve cultural capabilities of the consumer and their family (Kleinman, 1988). It is important to obtain the person's explanatory model of illness provides personal and social meaning to the illness experience and gives direction for treatment options that is acceptable to the consumer and their family (Andary et al., 2003). This model was built on the hypothesis of differences of belief on cause, course, and treatment of illness between patients and health care professionals; it is an appropriate model to use to understand the conceptualisation of Postpartum Depression in women in Saudi Arabia.

5.3.3 Research methods

Data was drawn from in-depth interviews with women who were in their postpartum period and health care providers (HCPs).

5.3.3.1 Selecting participants

In any qualitative study, participants are chosen purposively (Strauss & Corbin, 1990; Saunders, 2012). In this study, I was interested in understanding the perceptions of women regarding PPD. I also wanted to understand how PPD was conceptualised. Liamputtong (2013, p. 11) argues “... the logic and power of purposeful sampling lies in selecting information-rich cases for a study in depth”. In this study, ‘information-rich cases’ were women who had recently had a baby, as well as the health care providers who cared for those mothers in the perinatal period. Those women were likely to have been able to provide unique and rich insights for the research. I therefore used convenience sampling to choose mothers and HCPs for this study from primary health centres. It is customary in Saudi Arabia for mothers to bring their children to primary
health care (PHC) centres for vaccination and therefore it was logical and convenient for me to recruit my study sample from the vaccination clinics at PHC centres. Moreover, in Saudi Arabia there is 99% vaccination coverage and therefore recruiting participants from these vaccination sites gives me an opportunity to access a diverse sample of participants. Further details of the recruitment process are provided under Participant recruitment (Section 4.3.2.2). Health care providers included general practitioners (GPs); family physicians; nurses from well-baby, vaccination and maternity clinics; and social workers. This group was selected because of their relevance in working with these mothers during the perinatal period, providing health services (including mental health services) and their understanding of women-related problems after childbirth.

Participants were selected using maximum variation sampling, which is a purposive sampling strategy in which cases are selected to provide different perspectives relevant to the research question (Pattons, 2014). Maximum variation sampling (Liamputtong, 2013) helped me to understand how PPD is seen and understood among different women (e.g. employed and housewives; with different levels of education; those who experienced vaginal births and those who gave birth via caesarean section). Women were also selected to include different age groups, socioeconomic backgrounds, and those who had PPD as well as those who did not. To obtain different perspectives on PPD, a variety of health care professionals (e.g. GPs, vaccination nurses, antenatal nurses, well-baby nurses, social workers and family physicians) was also included in the study sample. In selecting health care providers, snowball sampling, a method used when it is difficult to identify members of the desired population (Liamputtong, 2013), was used. Snowball sampling requires participants to nominate other participants to be invited to participate. Participant selection continued until data saturation occurred. There is some evidence that for a purposive sample, 12 individuals is usually considered sufficient for qualitative research (Guest, Bunce, & Johnson, 2006). But usually sampling is undertaken until data saturation is reached (Liamputtong, 2013), and in this study I found that with a sample of 20, redundancies of data were occurring and therefore at that point I stopped recruiting additional participants. Data collection was undertaken over a period of six months (July to December 2013).
5.3.3.2 Participant recruitment

**Women**

For this study, women participants were selected if they had a newborn baby (aged 0–12 weeks), were able to understand Arabic and provided informed consent.

To help with recruiting participants for the interviews, I used a quantitative survey as the recruitment strategy. As noted in the quantitative chapter (Chapter 4: section 4.3.9), there was a section at the end of the questionnaire for the respondents to provide their contact information if they volunteered for an in-depth interview. These volunteers were contacted to arrange a convenient date, time and place for the in-depth interviews. Women were also handed a flyer describing the study, along with the quantitative survey. Some of the women preferred telephone interviews as it was difficult for them to travel outside of their home due to Saudi restrictions on the mobility of women. In Saudi Arabia, particularly in Makkah, women are forbidden to travel without a male companion.

**Health care providers**

Medical and allied health staff working in selected health centres and maternity services were eligible, as health care providers, to participate in the study. A letter of invitation was sent to them and if they were willing to participate, they were to contact me. During the interviews, some health care providers proposed other potential health care providers who met the eligibility criteria. They gave me the contact information for these recommended potential participants, who had consented to this information being given to me. Social workers were not initially included as health care providers. In 2012, when I conducted the pilot study, there were only male social workers in the public system; however, women are not referred to them due to cultural taboos around women being examined by a male health care provider. During an interview, a health care provider noted that including a female social worker would be beneficial for the study, as social workers may have rich information about the topic as such cases are referred to them. By then there were female social workers and therefore, I decided to include social workers in the study (See Appendix 1.1.4 and 1.2.4 for ethics approval). An invitation letter was sent to social workers who worked in PHC clinics; a similar process to that of health care providers was followed to recruit social workers.
5.3.3.3 In-depth interviews

In-depth interview is the data collection method most commonly employed in qualitative research because it allows participants to tell their stories in great depth (Green & Thorogood, 2013). In my research, I was aiming to understand the insider view or the “emic” (Henwood, 2008) perspectives of how the participants understood PPD: what it is, what contributes to it, how they managed it, and what their experience was in accessing mental health services. Hence, in-depth interviews were appropriate for my research aim, as this method of data collection offers the opportunity to get to know participants, and learn about their feelings and experiences, their thoughts and perceptions, in their own words (Liamputtong, 2013). The role of the researcher using in-depth interviews is to listen carefully and actively and provide probes when needed to keep generating data (Richards & Morse, 2012).

5.3.3.4 Interview guides

Primary health care providers guide

The guide for health care providers (see Appendix 6.3 for the Arabic and English versions) included broad questions about their views of how their patients perceived PPD and their experiences in providing mental health services for women following childbirth. In developing the interview guide, I drew on research by McCabe and Leas (2008), wherein they explored the barriers and facilitators to accessing mental health services by people with a mental illness.

Women’s vignette

A vignette was used as a trigger to explore women’s explanatory models of PPD. A case vignette (Sharma, Burt, & Ritchie, 2009), describing Depression in accordance with the DSM-IV criteria for Major Depressive disorder (APA, 2000), was first read out and questions based on Kleinman’s (1980) EM framework were used to elicit their perceptions about PPD.

The vignette was adapted from a Bipolar II PPD study (Sharma et al., 2009). However, in this study, the statement about a history of bipolar symptoms was removed, as bipolar II PPD was not the focus of this study. The rest of the symptoms remained unchanged (see Appendix 6.2 for the Arabic and English version). The character was changed from
“Ms A” to “sister Noura” to fit in with Saudi culture (“sister” is used as prefix to a woman’s name as a mark of respect). The vignette was translated into Arabic and then back-translated into English by bilingual translators.

5.3.3.5 Qualitative pilot study

A pilot study was undertaken before conducting the main study. Women who attended Al-Eskan Primary Health Care Centre in Makkah, Saudi Arabia, to have their babies vaccinated for tuberculosis (the BCG vaccination) – which is a standard vaccine for babies at birth in Saudi Arabia in the first two months after childbirth – were invited. The purpose of this pilot study was to assess the feasibility and acceptability of the in-depth interview as a data collection method and to learn more about the logistics of undertaking this research. An extensive research of the literature showed little evidence of qualitative research undertaken in the Saudi population and therefore a pilot study was deemed to be helpful. In the pilot study, the interview guide (see Appendix 3.1 for the Arabic and English version) developed for the final study was trialled to find out if rich data could be obtained using the guide.

The pilot study was conducted from January to February 2012 and included five women. The interviews did not provide the thick, rich data required for useful insights. Women were reluctant to talk about their own postpartum experiences. As a Saudi woman myself, I realized that women would be reluctant to speak about their personal experiences to someone they did not know. Hence, after a further search of the literature and discussion with my supervisor, I decided to abandon the use of an interview that focused on personal experiences and use a vignette instead.

Health care providers at the centre were also invited to contribute to the pilot study. Four primary health care providers participated in the study. Their interviews revealed that a face-to-face interview using an interview guide (see Appendix 3.2 for the Arabic and English version) was appropriate and therefore I decided to keep the interview guide for the study.
5.3.3.6 Recording, note taking, translating and transcribing interviews

The interviews were conducted and recorded in Arabic. Participants were asked if they were comfortable with audio recording of the interview. Most participants consented after assurance that their identity would not be revealed. Two health care providers expressed concerns during the interview, despite having signed the informed consent form, which included agreement for audio recording; in these cases the recording was stopped at that point. Previous research with Arabic participants had also encountered challenges in audio recording, in particular with Arabic-speaking women (Killawi et al., 2014).

When women did not consent for audio-recording I took notes. I had a set format for taking notes which included the time, date, place of the interview and the interview questions for each participant. As participants responded I wrote brief notes. I used shorthand using predetermined symbols and abbreviations to quickly note what was happening and what was said. These brief notes were to jog my memory (Bernald, 2013) later on. For example, when participants were talking and I note some key words or phrases that need further probing I circle them and when appropriate I probed it further. At the end of each interview, I used my notes to summarise the key points back to the participants to make sure I have not missed or misunderstood any point. After I finished from such interviews, as soon as I could, I typed detailed field notes of the interview including what participants said, while it was still fresh in my memory.

Given that the interviews were conducted in Arabic and then translated into English, language differences could influence the construction of meaning in the interviews. Some meaning could be lost in the translation process (Van Nes, Abma, Jonsson, & Deeg, 2010). Van Nes and colleagues (2010) recommend that, at the stage of data analysis, researchers use English as the main language and use fluid descriptions of the meanings instead of using one-word translations. To ensure that the meanings are transparent, researchers are advised to go back to the interviews in the original language. I sought to be accountable and transparent in my analysis phase, so the first three interviews were transcribed in Arabic and then translated into English. These were then back-translated to ensure that no meaning had been lost during the translation process. The rest of the interviews were directly transcribed into English. However, after the translation, I reviewed the transcripts thoroughly by going back to the
interviews and listening to them several times to verify that nothing had been lost during the translation process. For those Arabic expressions or words that did not have an exact word translation, the words are written as pronounced in Arabic and descriptions of meaning are provided in brackets.

As mentioned above, a back-translation method was used with some interviews to ensure the translation was reliable and to enhance the validity of the qualitative study (Van Nes et al., 2010). Translation was initially done by me; I am a native Arabic speaker and I also speak English well. The English translation was then back-translated into Arabic by a second person who was fluent in both languages. The back-translated Arabic version was then verified against the audio recording to ensure translation was given adequate consideration and the meaning-transfer-chain (Van Nes et al., 2010) was not lost. The interview transcripts were verified to ensure the translation matched the meanings intended by the participants.

5.3.4 Reimbursement for participation

In appreciation of the women’s time and contribution, I provided each with a $25 (100 SR) Mothercare baby shop voucher. Both the advertising flyers used for recruiting participants and the consent forms included this information. The reimbursements were handed out at the end of the interviews. For women who had telephone interviews, the compensation was arranged and passed on through the staff at the PHC.

5.4 Ethics considerations

Ethical approval for this study was sought and obtained from the Human Research Ethics Committee (HREC) of the UNSW, Australia (see Appendix 1.1.1 for the qualitative pilot study, 1.1.3 for the main study and 1.1.4 for including the social workers). Additional approval was also obtained from Umm Al-Qura University in Makkah, Saudi Arabia; a letter of approval from the Saudi Ministry of Health was also obtained to conduct the research (see Appendix 1.2.1; 1.2.2; 1.2.3 and 1.2.4).

5.4.1 Informed consent

While obtaining signed, written informed consent is crucial to ensure that participants are fully aware of and understand the purpose of the study, the literature suggests that “written consent can be intimidating to many cultural and ethnic groups” (Liamputtong,
Researchers have questioned whether a “Western” approach to the recruitment and consent processes should be applied in the same way for culturally different populations (Dawson & Kass, 2005; Upvall & Hashwani, 2001; Hyder & Wali, 2006; Bhutta, 2004). Killawi and colleagues (2014) suggest that Western ethical research principles seem to be applicable in Arabic societies, but require flexibility and culturally informed adaptations. They also found Arabic participants preferred to discuss with a family member whether they were able to participate in a study in order to obtain permission, given that they must consider a male relative’s availability for transportation or timing, or need assistance in the interview. In the present study, some women contacted their husbands in order to ask permission to participate. Otherwise, permission was given to participate in the study.

Informed consent was obtained according to the requirements of the UNSW Human Research Ethics Committee. Participants were given an information and consent form in Arabic (see Appendix 6.1). Participants had to sign twice on the form; once for conducting the interview and the second time for recording the interview. Participants were given an opportunity to discuss any questions or concerns about the study and consent process before being asked to provide verbal (recorded) or written (signed) consent.

All of those who participated in the face-to-face interviews signed the written consent form. In the case of telephone interviews, verbal consent was recorded on the audio tape. Some participants did not sign the consent for audio recording as previously discussed, and in such cases I took notes.

The terms anonymity and confidentiality have been used frequently in research and are particularly important in relation to small communities or vulnerable populations. Confidentiality is defined as a condition in which the researcher knows the participant’s identity, but undertakes further actions to protect that identity from being revealed to others (Rogelberg, 2002). Maintaining confidentiality is a key element to ensure the protection of private information and requires a clear statement showing informed consent has been given. Primary health care providers in this study were particularly sensitive to confidentiality and ethics issues. There are only a very few health care providers working in each of the selected primary health care centres and, as noted before, there are only three centres in Makkah city that provide the BCG vaccination.
Hence, it could be very easy to identify those who provided information for this study, even though no names are used in the presentation of the findings. Therefore it was essential that measures were taken to ensure anonymity of the participants.

5.4.2 Maintaining confidentiality and anonymity

Anonymity refers to a condition in which the participants’ identity is not known (Rogelberg, 2002). In this study, I ensured confidentiality and anonymity using the following strategies: 1) concealing the identity of participants and health care providers by using pseudonyms in all interview transcripts, 2) storing all audio-recordings, consent forms and transcripts in a confidential and secure place at UNSW, and 3) ensuring no publicly available information (such as conference publications and this thesis) contained any information that could potentially lead to the identification of study participants.

The audio-recordings and field notes were only viewed by me, the translator, and my supervisor; the interview transcripts were delinked from any participant’s identity and pseudonyms and codes were assigned to each interview.

5.4.3 Protecting myself and participants from risk and harm

I made every effort while designing this study to minimise the risk of unwanted outcomes for myself and for the participants. However, given that we were interviewing women who may be at risk of PPD it was possible that the participants may already have been experiencing PPD and therefore could have been distressed at any stage of the interview. Therefore the protocol outlined below was set up in the research design phase and followed during the implementation.

1) At the beginning of the interview, I explained to the participant the confidentiality issues and sought the woman’s consent in referring her to a general physician if such a need was felt during the interview.

2) If the participant appeared distressed at any stage of the interview, the formal interview was stopped and I helped the participant to deal with the distress in a supportive manner. As a qualified medical practitioner I am equipped with some skills in dealing with such situations.
3) If further expertise or help was needed, I discussed with the participant the need for consulting her family physician and emphasised the importance of seeking medical help.

4) Following any instance of having to stop an interview because of a participant being distressed, I debriefed the assigned physician in the centre without revealing the participant’s identity and sought the physician’s advice on what needed to be done. If the assigned physician advised that the woman should be referred to a psychiatrist, the following protocol was followed:

   a) If the participant had provided consent to be referred as explained in 1) above, the assigned physician would refer the participant to her family physician and the centre would follow its established protocol.

   b) If the participant had not given consent to be referred, I would contact the participant and strongly suggest to her that she sees her family physician. Two days following this contact, I would follow up with the participant to see how she was doing, and again follow up a week later.

In implementing the research, there was one instance where the protocol described above had to be implemented. In the reassessment of one of the women participants during the quantitative phase of the study described in Chapter 4, I received no answer to my phone calls. When the participant finally responded to a call, I inquired how she was doing and she told me her baby was dead. Understanding her situation and noting the distress in her voice, I did not continue with the research questions. Instead, I tried to provide her with as much support as I could over the phone and, following the protocol described above, I emphasised the importance of seeking medical help and at that time she did agree to me referring her. I promised to call her again and let her know that I was available if she needed any support from me. However, when I tried to follow up on this case, as laid out in the protocol, she never responded. I tried several times and discussed this case with my supervisor, but in the end had to leave it at that, as there was nothing more that I could do.

The above incident was extremely distressing for me, particularly as I had a seven-month-old daughter at the time and understood what it would be like to lose one’s baby. I spoke to my supervisors about this incident and they provided support and advice on
how to address the situation, and assured me that I had done all I could. During this time, I was living with my family and also had their emotional and practical support to help me deal with this situation.

I used risk-minimisation strategies to help me deal with the stress of fieldwork. I had regular communication via Skype and email with my supervisors, who constantly guided me. Moreover, if needed, I had access to confidential medical services, and my family for emotional and practical support.

5.5 Qualitative data collection

Individual in-depth interviews were conducted with the help of a common PPD vignette for women and an interview guide for health care providers as earlier described (see section 5.3.2.4). The purpose of using the PPD vignette was to facilitate the exploration of beliefs, attitudes and norms, and at the same time it helped to generate discussion. The vignette was also used as it is considered to be a useful method for exploring sensitive topics such as PPD. Prior to conducting the in-depth interviews in Saudi Arabia, the vignette for women was pre-tested on two mothers in Saudi Arabia.

At the beginning of each interview, a description of the study was given to the participants and they were reassured that they could withdraw from the study at any time without any fear or concern. Individual in-depth interviews lasted approximately 40 to 60 minutes. Participants could choose a convenient time and place for conducting the interview.

Three interviews took place in the participants’ homes in the early evening, two by telephone during the day and 15 in a private room/clinic in primary health care centres. All the interviews were completed in almost one setting, except for two. One of these, with a health care provider, had to be continued the next day because of the closing hour of the centre. The second case was a woman who did not continue because her husband was waiting for her outside the centre and he asked her to leave. I provided her with my contact details so as to continue the interview by telephone and I tried to call her but she ended the call once I had introduced myself. A possible explanation could be that her husband may have asked her not to participate in the study. Some women preferred to have face-to-face interviews after they had finished at the vaccination clinic and were waiting for their husbands to pick them up. Others preferred to be interviewed before
the clinic, while waiting for their turn for vaccination. Some women preferred a telephone interview, as their husbands were waiting outside. Field notes were written following each interview.

During the interviews (particularly with women), I encouraged a “two-way relationship” (Egharevba, 2001, p. 233), where I encouraged participants to ask me questions if they wanted. Frequently, women wanted to know whether I had children. I answered this question freely and believe that such self-disclosure encouraged rapport (Braun & Clarke, 2013).

I approached particularly sensitive topics with caution, as participants varied in their willingness to discuss their personal experiences. For example, when I asked about the problem in Noura’s case in the vignette, I also then attempted to find out if the participant herself or any of her family or friends had had similar experiences, and in this way went beyond the vignette to elicit information that related to the participant’s own experiences. Some women were quite happy to share their own experiences, while others responded with a “no” or “I don’t know”. In such cases, I did not probe further, especially if I felt that they were reluctant to talk about their own experiences.

5.6 Qualitative data analysis

Thematic analysis was used to analyse the qualitative data (Braun & Clarke, 2006). Thematic analysis is the generation of themes from the responses elicited and deemed as important to the description of the phenomenon (Daly, Kellehear, & Gliksman, 1997). In this analysis, I used both a deductive and an inductive approach; this approach provided a holistic way to describe the problem fully and strengthen the rigour of the study (Fereday & Muir-Cochrane, 2008). During the initial coding process, I was following a deductive approach for the first research question, to categorise the data into hierarchies using the Nvivo software. I used the concepts highlighted in Kleinman’s theory for the parent nodes/key categories. For example I had causes, symptoms and impact as parent nodes. Thus the parent nodes were coded deductively. However, within these categories, I then coded inductively. I also did look for uncovering additional categories inductively to what is in the Kleinman’s EM. Through this process, I was able to identify major themes that could explain the conceptualisation of PPD in women.
in Saudi Arabia. The conceptualisation of PPD explained how women recognised PPD, identified the causes and symptoms and therefore the impact.

I used the inductive approach to data analysis when I was analysing the data regarding the barriers and facilitators to accessibility, and then codes were compared and common or major themes that could fit the accessibility and help seeking practices were noted. Initial coding (also known as open coding) (Bryant & Charmaz, 2007; Braun & Clarke, 2006) consisted of line-by-line, phrase-by-phrase and paragraph analysis of transcripts. Transcripts were read and re-read, and initial ideas were noted down until I was familiar with the data. I had to deeply immerse myself in the words of the participants and became intimately familiar with them after transcribing the interviews and re-reading the interview transcripts many times. I also listened to audio-recordings and re-reading the transcripts of these until the full picture was gained and I was able to summarize the interviews. This was first done manually and reflections and categories were noted in a second column of the transcript. This process resulted in rudimentary descriptive codes to describe chunks of data (e.g. “barriers to accessibility”). Through this process, a coding framework was developed. All transcripts were then uploaded into NVivo software version 10 (QRS International, 2012) and coded using the coding framework as well as looking for new ideas and concepts.

Then data analysis involved reviewing the themes and checking if they related to the coded data and data set. This was ensured in regular meetings with the supervisor to review and discuss each code and its relevant quotes. This process was an ongoing process to refine each theme, elucidating the overall story, and generating clear definitions and names for each theme. The findings are reported in a formal way that relates back to the research topic; those related to accessibility to primary mental health services are presented as the findings.

5.7 Rigour

Rigour in qualitative research refers to the trustworthiness and quality of the study, which depends on the study design (Guba, 1981). This is demonstrated through a clear and transparent explanation of the research process (Beck, 2009; Patton, 1990). Theoretical rigour in qualitative research requires referring to the soundness of fit of the research question, aims and the choice of methods appropriate to the research problem.
(Liamputtong & Ezzy, 2005). My first step in the process of this research was to conduct a comprehensive literature review on Postpartum Depression in general and in particular in Saudi Arabia, which identified the research gap and therefore led to the research purpose and the research questions. A qualitative research method was best suited to answer the research questions.

Lincoln and Guba (2000) suggest the following four criteria to judge trustworthiness or quality of qualitative research: credibility, dependability, transferability and confirmability. Below I provide a description of how I addressed these four criteria.

5.7.1 Credibility

The first criterion, credibility, refers to the extent that qualitative findings are truly representative of the research participants. The intent of credibility provides a truth value, a “single tangible reality that an investigation is intended to unearth and display” (Lincoln & Guba, 2000, p. 294). Lincoln and Guba (2000) propose respondent validation, triangulation and prolonged engagement as strategies for ensuring credibility. Respondent validation or member checking involves getting the participants to confirm that what the researcher is reporting is a true account of what they said (Ritchie, Lewis, Nicholls, & Ormston, 2013). In this research, I frequently summarised the key points made by the participants during the interview itself and checked with the participants to see if I had accurately reflected what they had said. Due to the practical difficulties of getting in touch with the participants after the interview, it was not possible to organise a separate session for presenting the preliminary findings to the participants and obtaining their feedback.

Triangulation was also used to enhance the credibility of the study (Patton, 2002). I used data source triangulation by exploring perspectives from two different groups of participants: health care providers and women.

In addition to triangulation, the trustworthiness of research may also be addressed by prolonged engagement (Lincoln & Guba, 2000). In this study, data was collected over a six-month period, which could be considered as adequate for ensuring trustworthiness.
5.7.2 Dependability

The second criterion, dependability, refers to “the coherence of the internal process and the way the researcher accounts for changing conditions in the phenomena” (Bradley, 1993). During the entire research study, I maintained a research journal. This serves as an audit trail, which is a key strategy for meeting the rigour criterion of dependability (Kuper, Lingard, & Levinson, 2008). In the journal, I noted details of all the decisions I made in regard to data collection; and reflections on the process, particularly decisions and reflections relating to the data analysis. In addition to my research journal are reflective notes I made after reading each interview, memos on NVivo, minutes from meetings with my supervisor to discuss the research, and emails to my supervisor. All of these contribute to the audit trail.

During the coding process, all the codes were defined and revised numerous times. Inter-rater checking was also used to address the trustworthiness of this study. Ritchie and colleagues (2013) recommend that peer researchers be involved at different stages of the study. At the time of data analysis when the interviews were transcribed, translated and analysed, I shared my interview transcripts with three colleagues and my supervisor, who each separately coded different interviews. I then compared their codes to mine. This helped me to use the benefits of shared interpretation. I also attempted to limit my mistakes by rechecking the data during the data analysis process, searching the literature for explanations, and discussing data analysis with my primary supervisor on several occasions.

5.7.3 Transferability

The third criterion, transferability, refers to “the extent that the researchers’ working hypotheses about one context apply to another” (Bradley, 1993, p. 436). In this study, I have provided a ‘thick description’ (Bradley, 1993) of the study setting, such as the socio-cultural and political context of the study, a detailed literature review of what is already known about the topic, a detailed description of the participant characteristics, and a detailed description of the themes. Such details help readers to judge for themselves whether the study findings are applicable to other similar contexts and thereby demonstrate transferability (Patton, 2002). I have used numerous quotes to further add to the thick description and enhance transferability.
5.7.4 Confirmability

The forth criterion, confirmability, refers to “the extent to which the characteristics of the data, as posited by the researcher, can be confirmed by others who read or review the research results” (Bradley, 1993, p. 437). In this study, confirmability is demonstrated through support of the study findings with the available literature.

5.7.5 Reflexivity

Reflexivity is an essential part of ensuring rigor of qualitative research. Haynes (2012, p. 72) defines reflexivity as “an awareness of the researcher’s role in the practice of the research and the way this is influenced by the object of the research, enabling the researcher to acknowledge the way in which he or she affects both the research processes and outcomes”. The researcher is considered to be an instrument of data collection and therefore, an actor of data interpretation (Denzin & Lincoln, 2003). Thus, as part of reflexivity, it is necessary to acknowledge the researcher’s stance. For this reason, I have described my personal experiences and professional background in (see Section 5.3.1).

5.8 Findings

This section is related to the following research questions outlined at the beginning of this chapter:

1. How do women in Makkah, Saudi Arabia, conceptualise PPD?
2. What are the barriers and facilitators for accessing mental health services?

In presenting the findings I have used some direct quotes to reflect the participants’ voices in order to illustrate how the development of concepts and categories was achieved. In order to maintain confidentiality, all names used for participants are pseudonyms.
5.8.1 Description of the participants

Participants were recruited to provide a diverse sample of socio-demographic characteristics. Women were aged between 23 and 39 years. In terms of education, they ranged from having a primary school education to having a postgraduate qualification. Marital status ranged from married to a husband to women who had had more than one marriage, and women in polygamous relationships. Two women had been formally diagnosed with PPD.

The health care professionals interviewed included doctors, whom were general practitioners and family physicians; nurses from well-baby, vaccination and maternity clinics; and social workers. A brief background of participants is presented in Appendix 8.1.

5.8.2 The conceptualisation of PPD

Women were presented with a vignette (see Section 5.3.2.4) telling the story of a woman named Noura who had symptoms similar to PPD and, through this vignette, the women’s conceptualisations of PPD was explored. Conceptualisation of PPD is related to women’s perception of PPD and their description of how they understood it within the Saudi context. Four overarching themes emerged which describe how women’s understanding of PPD can contribute to Depression. These were: 1) recognising PPD, 2) contributors to PPD, 3) symptoms of PPD, and 4) recognising the impact of PPD.

5.8.2.1 Recognising PPD

Not all of the participants associated the symptoms of the character in the vignette with PPD. Out of the 11 women; six recognised the woman as suffering from “Postpartum Depression”, while the remaining five women did not associate the symptoms with an illness. This finding compares well with the qualitative literature on PPD. For example, in Australia, Nahas and colleagues (1999) investigated the lived experiences of Middle Eastern migrant women with PPD (n=45). Their findings indicated those mothers did not have any knowledge about PPD until they came to Australia. Similarly, studies of minority ethnic groups in the UK (Templeton et al., 2003) and UK studies of West African mothers (Gardner, Bunton, Edge, & Wittkowski, 2014) show that women did not identify PPD symptoms as an illness. These UK studies all employed a smaller sample size than the current PhD study. Nevertheless, it suggests a lack of
understanding of PPD among mothers from culturally and linguistically diverse (CALD) backgrounds.

The six participants who recognised PPD as an illness had a good knowledge of mental health problems and used the term “Postpartum Depression” to describe Noura’s case in the vignette. This is reflected in Susan’s quote below.

_The first thought is that this thing is not in her control ... it is Postpartum Depression, Postpartum Depression it’s something that is not in her control, so every word she says is true. It is nobody’s fault; she can’t be blamed for it._ (Susan, Saudi mother, 32 years, with four children)

Susan has four children and, according to her, had never suffered from PPD, though she had heard many stories about PPD. Susan stated that PPD appeared to be a “serious disease”.

Najla, is a 28-year-old Saudi woman who, at the time of the interview, had just had her second child. She easily recognised the condition and described PPD as something that every woman just has to take in her stride after childbirth. As she said confidently:

_This can happen to anyone and PPD is something that is well known. If you write “symptoms of PPD” and search for it on the internet, you will find all these there._  
(Najla, Saudi mother, 28 years, with two children)

Najla had a previous history of Depression when she was a teenager. She had also experienced PPD after the birth of both of her children. She spoke about her experience of having PPD:

_It is PPD ... to the extent that she can’t control her feelings. To be honest I had been through this condition after my first child. The psychiatrists explained it to me as psychosis._ (Najla, Saudi mother, 28 years, with two children)

Najla did not recognise that she had PPD with her first child until she was diagnosed by a psychiatrist. With her second child, she visited her doctor and told him that she had had Depression after giving birth. Najla had married twice, her first husband having divorced her after she was diagnosed with PPD. She is now in a polygamous relationship, married to a man with two other wives. She herself recognised she was
going through PPD again but she stated that this time it was less intense than the first time, as reflected in the following quote:

*After my second child, it [the Depression] was less intense. I did not go through much. It was the first time which was very difficult. The other day I went to the doctor and told him that I had given birth and that I feel depressed after the delivery.* (Najla, Saudi mother, 28 years, with two children)

The women who did not associate the symptoms in the vignette as PPD, used words such as “unhappy” and “thinking too much”, “in despair with life” or “devoid of love” to describe what “Noura” in the vignette was experiencing.

Reem, a 23-year-old mother with three children, described Noura’s feelings as those of an unhappy wife who thinks too much and therefore she did not love her baby:

*Inside of her heart, she [Noura] is not very happy. She’s not very happy inside of her heart. That’s why she thinks and thinks; what do I do. What do I do? She thinks and thinks a lot.* (Reem, non-Saudi mother, 23 years, three children)

Reem’s use of the words “thinks and thinks” may suggest a mental health or psychological condition. In some ethnic groups “thinking too much” has been used as an expression to describe too much worry. For example, Fenton and Sadiq-Sangster (1996) observe that women from Asian background use “thinking too much in the heart” as a culturally specific expression for mental illness. Similarly, Razee (2006) reports that Maldivian women use the “thinking too much” idiom as a way to reflect their emotional distress. “Thinking too much” had negatively impacted on those women, as Razee’s study reported they were unable to sleep or concentrate.

Nouf held a different view: she thought that Noura was in despair and had lost hope in life because of her past experiences. She claimed to “disbelieve” that a mother could not love or want to hold her child. She added that “such cases” often lead to suicide or child abuse and are common in today’s generation, as she said:

*She is in despair with life. There may be something from her past that is affecting her relationship with the child ... And cases like this, God forbid, lead to the mother committing suicide or throwing the child or something...* (Nouf, non-Saudi mother, 35 years, six children)
Sarah, a 23-year-old mother of one, described Noura as being devoid of love. She placed much of the blame on Noura’s family for not being more concerned about her wellbeing. According to Sarah, the lack of family concern caused Noura to feel “afraid about something” [losing someone she loved] and contributed to her feeling devoid of love and her unnatural relationship with the child. It is likely that Sarah was drawing on her own experiences as she spoke of what was happening to Noura in the vignette. Sarah had lost her mother when she was 15 years old and indicated that this loss had emotionally affected her even to this day. Sarah believed that Noura was afraid of losing her father or husband or the baby. However, she pointed out that the difference between herself and Noura was that she did not fear losing her child. She said:

*She [Noura] is afraid ... She does not intend to ... She wants to treat him [the baby] right but she is afraid. She keeps thinking about how her family had treated her. Later on, her baby’s life will be complicated [psychologically] the same way her life was complicated. Or she is afraid to lose them. For instance, I had lost my mother and to this day I think that I will lose my husband or my father and so on. I get such thoughts. But I never had any thoughts that I may lose my baby.* (Sarah, Saudi mother, 23 years, one child)

The participants who did not identify Noura as suffering from PPD, nevertheless recognised the woman as having a mental health problem. This suggests that these women may not be aware specifically of PPD but understood symptoms such as loss of appetite, inability to concentrate and anxiety as signs of a mental illness. For example, Nouf’s use of “suicide” and Reem’s talk about not loving the baby, reflect some aspects of PPD.

**5.8.2.2 Contributors to PPD**

Causes of PPD were defined as reasons or factors that participants associated as contributing to PPD. Participants identified biological, obstetric, socio-cultural, psychological, supernatural and religious beliefs as contributing to PPD. Biological factors relate to any cause which is inherent within the biological makeup of the person or history of mental illness. Obstetric factors relate to any complications relating to childbirth, which participants considered as contributing to PPD during or after childbirth. Socio-cultural factors are those instances where participants spoke of causes that related to the social, cultural or environmental context. Where participants spoke of
emotional aspects such as change of focus of attention to the baby, marital dissatisfaction, not being ready to have a baby and life experiences, these were labelled as psychological causes.

**Biological causes**

Few women mentioned that PPD can be caused by changes in hormone levels. For example, Lena, a 24-year-old mother of one, thought that “PPD is a hormonal change”, which was “something normal that happens”.

Najla, who was diagnosed with PPD, associated her PPD to her prior experience with Depression during her teenage years, as reflected in her words below:

> I have had Depression since my high school days. [The doctors] said I had acute Depression and gave me certain anti-depressive pills. The more my Depression increased they increased the dose. I am still on medication but I only take one pill now. So I continue with my treatment. I still have Depression. (Najla, Saudi mother, 28 years, two children)

Biological factors were also considered by health care providers to be the main cause of PPD. They mentioned history of Antenatal Depression, genetic predisposition or previous history of mental illness as the main contributors to PPD, as reflected in the following words of a general practitioner:

> I have seen mothers who have had Depression during pregnancy. They are fine in the following pregnancies. Depression has different levels/degrees. There are women who already have previous psychological conditions or a hereditary predisposition for this kind of problem. (HCP-A)

**Obstetric causes**

Obstetric factors include any complication that happened before or after the delivery of the child. Episiotomy is commonly practiced in Saudi Arabia (Saadia, 2014) and other Arab countries (Karaçam, Ekmen, Çalışır, & Şeker, 2013; Rizk, Abadir, Thomas & Abu-Zidan, 2005; Husic & Hammoud, 2009) as a routine part of childbirth. Perineal discomfort, perineal pain and difficulty in breastfeeding are the most common complications of episiotomy (Inyang-Etoh & Umoiyoho, 2013). Episiotomy seems to be a contributor to PPD in women in Saudi Arabia, as revealed in this study.
Zahrah, a 31-year-old mother and her husband’s second wife, spoke of the distress caused by the scar from her episiotomy. She thought the scar would affect her relationship with her husband, especially since her husband had another wife. She felt the scar made her ugly and undesirable to her husband.

Najla, who went through a difficult labour with her first baby, also spoke about her second delivery experience as one of the causes of her Depression, as reflected in the following quote:

... I would just imagine how the delivery went and how I suffered and how difficult my labour was and about several other things. (Najla, Saudi mother, 28 years, two children)

**Socio-cultural causes**

Participant responses from both the women and health care providers suggest that socio-cultural factors such as the woman’s support system, preferences regarding the baby’s sex, and traditional customs, can be attributed to PPD in the Saudi context.

**Support system**

Participants stated that support of one’s family and spouse is highly appreciated, especially during the postpartum period. Support encompasses both practical and emotional support (Gjerdingen, Froberg, & Fontaine, 1991). Practical support includes sharing household chores or responsibility for the baby. Practical support is usually received from husbands, mothers, sisters, an older daughter or a housemaid. In Saudi Arabia, it is quite common to have a housemaid at home to help women with their domestic duties. During the first 40 days following the delivery, it is common practice for Saudi women to live with or near their mothers or mothers-in-law. It is also common practice during this 40-day period for new mothers to be dependent on other women for domestic duties or childcare. Hence, it is likely that a lack of this kind of support can result in a woman feeling stressed and tired. Cultural expectations for support following delivery are clearly illustrated in Najla’s words:

*If she does not find support from her husband, support from her family or if she is not able to get enough rest after the delivery ... If she cannot rest, she has the baby and stays the 40 days after childbirth at her house and starts living her life, cooking and*
doing the laundry for example. If she does not get support from anyone, surely she will always feel let down and tired. (Najla, Saudi mother, 28 years, two children)

Culturally, most postpartum women prefer to stay with their own mothers after giving birth, in order to have their support. Amal, a 39-year-old working mother of four children, described her experience of not going to her mother’s house, which in her perception was the cause of her Depression:

The situation of Depression came on. Firstly, in this delivery I did not go to my mother’s house for the first forty days. I had to stay home for my children and their schools. I could not bear the situation any more. (Amal, Saudi mother, 39 years, four children)

Participants said that financial difficulties in their families while they stayed during the 40 days could also lead to PPD, as described in the following quote:

At her parent’s house there is no rest. The house may be small, or there is disturbance, or there is nobody to help her, for example if her mother is aged. Some families may make her feel that she is not welcome in the house, she and her baby that is. This can be disturbing. Some families do not have extra allowances. So all of this can put her under pressure. (Lena, Saudi woman, 24 years, one child)

Availability of a support system has been shown to be a protective factor for PPD in qualitative studies. Rodrigues and colleagues (2003) found PPD (as assessed by EPDS scores) is reported more frequently in mothers who have less practical and emotional support from their husbands compared to mothers who do have support. Gardner and colleagues (2014) found West African women in the UK attributed their Depression to a lack of support and not having their African family living nearby. Quantitative findings have also shown a negative association between lack of social support and the development of PPD (O’Hara & Swain, 1996). Seguin and her colleagues (1999) examined the correlation between social support (emotional and instrumental) and development of PPD. They found that inadequate social support is associated with PPD.

Sex preferences

Participants mentioned feeling disappointed when it came to the sex of the baby. In many cultures, including in Saudi Arabia, boys are deemed to be more desirable than girls, for social and financial reasons (Khraif, 2001). As reflected in Reem’s words
below, in Noura’s case the preferred sex of the baby created problems between the husband and wife, which, according to Reem, created problems for the mother during the postpartum period:

Yes. This also creates problems ... He [the husband] wants a boy but Noura wants a girl. Maybe [Noura] had a baby girl, [having a baby] is from Allah, and Allah gives us a girl or a boy. But the husband says, “Why did you get a girl and not a boy. I want a boy.” This creates problems. (Reem, non-Saudi mother, 23 years, three children)

Reem’s words also seem to suggest that a husband may blame the wife for not conceiving a boy. The preference for boys was noted not just in the women’s responses but also a general practitioner commented that a boy’s birth is welcomed with joy by the mother and the whole family:

The boy is not like the girl. Having a boy is given more importance than having a girl ... The joy of having a boy is greater. I have seen them. People’s acceptance for a boy is different from that of a girl. So it is all reflected on the mother. There are even people who do not congratulate her [the mother]. They are just thankful for the mother’s recovery and show no joy for the baby girl. (HCP-C)

The GP indicated that the reaction from relatives on the birth of a female baby could have a negative influence on the mother, which could contribute to Postpartum Depression.

Although in general the preference is for boys, in cases where the couple already have male children, they often want a girl. Amal, who already had two boys and one girl, was not happy that she was now expecting another boy:

Personally, I wanted to have a baby girl, you know. And I came to know it was a boy by the fifth month. So I found out about the sex of the baby early on. Within myself I was not happy; I wanted to have two girls and two boys. (Amal, Saudi mother, 39 years, four children)

Traditional cultural customs

Women in this study spoke negatively about postpartum customs in Saudi Arabia. As mentioned in Chapter 2, following childbirth, women are expected to be confined indoors for 40 days, for their own and their baby’s health. Women experience less freedom during this period. They are often homebound and unable to do what they want
or go out when they want. If for some reason they want to go out, they have to first obtain their husband’s permission. As Asma’s words below reflect, in most cases husbands prevent their wives from going out when the baby is young. While in Saudi Arabia women’s mobility in general is limited, Asma’s words suggest that even greater restriction is imposed on women during the postpartum period:

> Given our situation here in Saudi Arabia, if I want to go for a walk or to a mall with my baby in the morning, my husband may not give me permission to do so as the baby is still young. Our social customs tell us to stay home, either because the baby is still too young or the mother has just given birth. (Asma, Saudi mother, 29 years, one child)

**Psychological causes**

Participants spoke of psychological issues such as change of focus of attention to the baby, marital dissatisfaction, not being ready to have a baby, and life experiences, as contributing to PPD.

**Change of focus of attention to the baby**

Both women and health care providers indicated that following the birth of a child, particularly the first born, family attention shifts to the baby rather than the needs of the mother. As a Saudi mother myself, I have experienced this. During pregnancy, the focus is on the wellbeing of the mother, though perhaps this is really to do with protecting the unborn child. Nevertheless, the mother gets a lot of attention. However, once the baby is born, the family’s focus shifts to the baby. This change in focus of attention, according to health care providers, negatively impacts on mothers and could be a contributor to PPD:

> ... lack of attention in postpartum women. She wants more attention ... even more so from the husband ... and attention from the family as well. (HCP-E)

**Marital dissatisfaction**

Reem, a 25-year-old mother of three, was the only woman in this study who considered Noura’s unhappiness to be related to marital dissatisfaction. Reem had previously identified Noura as an unhappy woman. In Reem’s view, Noura’s husband was being unfaithful and wanted to have a second wife, which affected Noura’s mental wellbeing:
Her husband does not love her, that’s why she thinks a lot; he creates problems for her, that’s why she does not speak [to him or her family] and that’s why she thinks a lot. Maybe it’s like that ... That’s why she does not love her baby. (Reem, non-Saudi mother, 23 years, three children)

Reem considered that in Noura’s case, fear that her husband would leave her made her to think too much. So for Reem, Noura was emotionally distressed and her constant thoughts about the possibility of her husband leaving her made it difficult for her to have any emotional connection to her baby.

Reem believed Noura’s husband was creating problems to make up an excuse to marry a second wife. Reem also thought it possible that Noura’s husband wanted more children but Noura did not. Reem also believed Noura wanted to have a two- to three-year gap between children and her husband disagreed with her, leading to sexual tension between Noura and her husband. Reem’s words below clearly illustrate that differences between what the husband and wife want lead to significant tension, which impacts on the postpartum mother’s mental wellbeing:

She [Noura] says, “I want to have the second child after two years” but [Noura’s husband] says, “I want [more children] soon”. [Noura] does not want to have intercourse. [The husband] says you must have intercourse. That’s why there are many problems ... [Noura] says she wants to take an injection or pills. There is also the intrauterine device. I don’t want a baby. I don’t want [more] children for now. He says, “I don’t like the intrauterine device, I don’t like pills or injections”. [The husband] says so. That’s why there are problems. The husband does not listen. He says, “I don’t like this”. [Noura] says, “I like it and I don’t want another baby. I just had one baby. I want the second after two or three years.” The husband says, “I want it”. There are problems like this too. (Reem, non-Saudi mother, 23 years, three children)

The marital issues that Reem speaks of are likely to be associated with the male-dominant society that Saudi Arabia is. The concept of polygamy (having more than one wife at a time) is also common in Middle Eastern countries (Al-Krenawi, 2014), including Saudi Arabia. Reasons for polygamy include husbands’ desire to have more children. However, polygamy has negative effects on women and causes social problems (Hamzah & Othman, 2010; Al-Krenawi, 2014). None of the Saudi studies have examined the relationship between polygamy and PPD. However, previous research shows that the impact of polygamy on Arabic women is a pivotal factor in
marital problems, which could result in PPD (Abo-Saleh & Ghubash, 1997). The women in Abo-Saleh and Ghubash’s study share similar cultural and social characteristics with Saudi women and it is likely the impact of polygamy could be similar.

Not being ready to have a baby

Participant responses suggest that some women were not ready to have a child, either because they were too young or it was too soon after their marriage. Women spoke of how their life had changed and how the motherhood experience was different from what they had hoped for or expected. Women’s responses suggest that falling pregnant when they were not ready for a baby in their life may result in the mother feeling distant from or not loving the baby. One participant spoke of her aunt feeling depressed after childbirth:

When my aunt gave birth to her first daughter, she was perhaps 17 or 18 years old and she did not love her daughter at all because she was not ready to give birth. She got married and became pregnant in the same month. She got morning sickness and became heavy and gave birth, so she did not love her baby; that’s why she did not give love to her baby. (Zahrah, non-Saudi mother, 31 years, two children)

When pregnancy or birth experiences were unpleasant or negative, women found it distressing and difficult to move on. Arabic women face pressure for early marriage (soon after starting to menstruate) and to become pregnant soon after marriage (Stephan, 2006). At such early ages, most women are immature, and not prepared for the transition to motherhood.

Life experiences

Life experiences, life circumstances or events in the mother’s life were believed to be a contributor to subsequent manifestation of Depression and to have a negative impact on caring for a child. According to Asma, she was still a postgraduate student when she had her baby; hence, she had experienced a difficult time nursing her baby:

For instance, when I had my daughter, I was under pressure due to my studies and was not necessarily working. I was on leave for two weeks. So I was under pressure in these two weeks... I had my studies but my mother made it easy for me by taking care of the baby. But my studies were a stronger factor. And I also had to commute between
Jeddah and Makkah [a distance of around 90 km]. This played a big role in my case. I was worried about this. I did not even breastfeed [the baby]. Why? Because I knew that after two weeks I would be leaving her alone for more than five hours every day, hence I did not feel the closeness to breastfeed her. I directly started her on artificial milk. So much so that I had tried three different kinds of milk within the first week. I could not decide on one kind. This was what concerned me the most. Even more than making time to spend with her. There is much difference between my deliveries. I felt that I did not know anything with my first delivery. With the second one, I knew things and was prepared but my studies were a challenge. It’s possible that if I stopped now and if I didn’t study after my third delivery, then my life would be a lot calmer and I would not have this Depression. (Asma, Saudi mother, 29 years, one child)

Asma’s words clearly show that, for her, the challenge of continuing her studies and at the same time taking care of a baby was what contributed to her PPD.

Amal had two in-womb dead foetuses and related how her pregnancy loss was the major contributor to her Depression, which she refers to as “feeling scared and worried”:

I had conceived during the first month of my marriage. And – praise be to Allah – the embryo had grown in my tummy and I think it was six months old. So what was the cause of death? Everything was normal. I used to follow up every month. Even she [the doctor] was surprised too. So it was destined to be a death without any cause. This pregnancy passed and I felt as if my father died. Maybe when my father passed away I was not crying like that. Even my family said that perhaps it was because I got disturbed by father’s death. There was not much difference between them. You cannot imagine how much I was affected by it psychologically. To the extent that I had a normal delivery [to give birth to the dead baby] and ... I was afraid ... I felt as if everything was unreal. Being pregnant was something new for me. Giving birth was something new for me. I feared that I was not taking care of myself. I was worried and scared. I was in a terrible psychological state. I could not sleep. I could not eat. You cannot imagine to what extent I suffered. I was going through an antenatal Depression. (Amal, Saudi mother, 39 years, four children)

Supernatural causes

Some participants thought that the mother could be influenced by the evil eye or a demonic influence, while others believed PPD was an effect of black magic or Jinn (a supernatural being) possession, called “Umm Al-Sibyan” (meaning a Jinn attacks a
pregnant women and kills the foetus inside her womb). Both women and health care providers said that black magic, demonic influence or the evil eye are believed to be associated with Postpartum Depression. Fatmah used the Arabic word “Sihr”, which means black magic. She explained that Noura in the vignette was suffering from the effects of black magic spells or demonic influence, which she believed were the cause of her Depression and mal-attachment to her child. In Fatmah’s description of Noura’s condition, she says there was a possibility that someone had cast a spell on Noura to prevent her from loving her husband and child. She also reasoned that Noura may have been in a relationship with someone prior to her marriage, who had now cast evil spells on her to destroy her married life and thus caused her to have psychological problems, as is evident in this statement:

_I think she suffers from “Sihr” as she has recurring episodes of Depression and cannot emotionally attach herself to the newborn. It could be possible that someone cast a spell on her, perhaps to prevent her husband to emotionally attach himself to their child. If this is not black magic then it could be demonic influence. If her symptoms persist, then it could lead to a severe mental disorder._

_In my case, as I mentioned, they diagnosed it to be the evil eye, but it was not just evil-eye ... it was black magic. I could not even stand talking to my family and when they wanted to come over to see me I would turn them away ... and I did not take baths ... I wouldn’t bathe for a whole week. I became that way ... I did not want my son ... I even tried to choke him and hit him ... I hated him and I hated his father so much. You cannot even imagine how much. This was all due to black magic._ (Fatmah, non-Saudi mother, 25 years, two children)

Evil eye is believed to be a common cause of mental illness in Saudi Arabia. In the majority of interviews, both health care providers and women spoke of evil eye as the cause of PPD. The following quotation from Zahrah typifies how participants perceived psychological problems:

_As we know in our Saudi society, anything that is related to the psychological side is cancelled out. We may say that it is the “evil eye” but we won’t say “the poor mother has Depression”. If someone had this PPD we will say it is the “evil eye” ... it was surely so and so who had visited us yesterday and she saw you and you walked in front of her so she gave you the “evil eye”. (Zahrah, non-Saudi mother, 31 years, two children)
A GP echoed the perceptions of women that supernatural causes were the cause of PPD:

\[
\text{Black magic and evil eye, especially with women who are expecting a child, so the first thing they go back to is \ldots At first they think it has something to do with demons, demonic influence, and evil eye and so on. (Dr Khadegah)}
\]

Beliefs in supernatural forces make it difficult for most women to recognise the medical causes of PPD and to seek appropriate medical help.

**Religious beliefs**

Religion plays an important role in the day-to-day life of Muslim women, and this was quite evident in this study. Saudi Arabia is a strongly Muslim country. Having some sort of religious faith has been suggested as a protecting factor against PPD (Beck, 2002; Tannous, Gigante, Fuchs, & Busnello, 2008). Faith in God has been identified as necessary to maintaining psychological wellbeing. All participants agreed that there is a lack of faith in God in women who have PPD. They believed lack of faith affects women’s emotional wellbeing and causes internal weakness. This is reflected in Najla’s response to the cause of PPD in Noura’s case:

\[
\text{This goes back to their faith. Some people have strong faith; it does not let anything affect them. But some people \ldots no! Insinuations may have an effect on them. It is Depression, with weakness of faith. Her relationship is not strong with her Lord. (Najla, Saudi mother, 28 years, two children)}
\]

During the 40-day period following the birth of a child, women are not allowed to pray or to touch the Holy Qur’an. Women experienced feeling particularly depressed during this period, when they can’t pray or read the Qur’an and so can’t follow their usual religious practices. They believed reading the Qur’an would help to ease their emotional problems. As Nouf said “Lack of recitation of the Holy Qur’an and lack in belief in Allah Almighty are reasons of her sad feelings”.
**5.8.2.3 Symptoms of PPD**

Symptoms of PPD listed by participants were, for the most part, similar to what is mentioned in the general literature. They described feeling a loss of self-confidence, struggling with lack of sleep, feeling worried, scared and tearful. For example, a woman experienced feeling anxious about having her first baby. She was unsure how to act as “a good mum” in order to look after the baby and unsure how to respond to the baby’s crying, for which she could find no cause. Within the Saudi context, participants reported lacking a desire to breastfeed as a common sign of having Depression. Although they recognised the importance of breastfeeding their baby and knew that breastfeeding was best, the difficulty they experienced in emotional attachment to the baby was the reason for the loss of the desire to breastfeed.

Interestingly, participants in this study described symptoms of PPD which are consistent with DSM criteria (APA, 2000), even though most of them did not view PPD as an illness. This finding is consistent with findings from studies of West African mothers living in the UK (Gardner et al., 2014), Ethiopian women (Hanlon, Whitley, Wondimagegn, Alem, & Prince, 2009) and black Caribbean women (Edge, Baker, & Rogers, 2004).

**5.8.2.4 Recognising the impact of PPD**

Most participants acknowledged that symptoms of PPD have an adverse impact on the mother, the child, and the mother’s relationships with significant others.

*Isolation*

Isolation was the most commonly mentioned impact of PPD. Women recognised that PPD negatively affected mothers and disrupted their social connections with the family and community. One woman stated:

*If [Noura] remains worried all the time, you will find that [Noura] does not want to socialise and people will distance themselves away from her as well ... meaning she will be left alone in the end.* (Nouf, non-Saudi mother, 35 years, six children)

Nouf indicated that isolation would be caused because Noura is worried all the time because she is unable to share her problems with others. Noura prefers to avoid
socialising with others and this contributes to her feeling of isolation, and subsequently people would distance themselves from her.

Some attributed isolation to the side effects of anti-depressive treatment. Amal, who is 39 years old and a working mother with four children, spoke of her experience after returning to work while still being on anti-depressive treatment. She said that when she shared her PPD story with her work colleagues, they did not understand her problem and had a misconception about the treatment, as reflected in the following quotes:

_They seem to believe that once you start getting psychiatric treatment, you will not be able to stop …_

_… When I and one of my colleagues were just sitting and talking and she started saying to me that since I had started treatment, I would never be able to quit it. I would remain this way all my life._ (Amal, Saudi mother, 39 years, four children)

For Amal, this has affected her negatively. Although she believed taking the medication was not going to be forever, she stopped taking her medication and had a severe attack of Depression. Amal had visited her psychiatrist and started to take her medication again. She was still on medical leave. Amal described her feelings of not wanting to go back to work because she knew that her colleagues would continue talking about the side effects of taking anti-depressive medication.

Amal was also worried about a particular side effect of the anti-depressive medication, which caused her to gain weight and made it difficult for her to go back to work. For Amal, her physical appearance was significant. She knew that having a baby means that your body weight changes and taking anti-depressive medication also changed her physical appearance.

_I still don’t feel that I am ready to go back to work. Because keep in mind that my weight has increased … The medication makes a person gain weight up to 10 kg or so. I had already gained [weight] after the delivery._ (Amal, Saudi mother, 39 years, four children)
**Perceived stigma**

Participants spoke of those with mental health issues being stigmatised. Therefore, women with PPD concealed their illness, which negatively impacted on them. As one participant explained:

> Firstly, on the part of people because people start talking; this woman has a mental problem; this woman should not mix with people ... this hurts a person. Even if the woman is not mentally well. When people talk, it is not just that individual who is affected. As far as others are concerned, the [illness] affects her family, her mother, father and the sisters too. (Lena, Saudi mother, 24 years, one child)

As clearly reflected in the above words, the impact of having a mental health problem is not just on the person who is experiencing the illness, but on the entire family. This has major implications for help-seeking, as illustrated in the words of another participant:

> Those [people] who do not understand [PPD] begin to gossip about her. Of course she will be affected and it will get worse. Not only have they abandoned her but now they gossip about her. Her mother may also get annoyed with her. Her mother ... does not want to disclose [that the daughter is having PPD]. (Susan, Saudi mother, 32 years, four children)

Women felt they would be stigmatised if others knew that they were taking antidepressive medications. They felt that being on such treatment could even affect their future career. The impact of such stigma on the future of a woman is clearly illustrated in the following words of a health care professional:

> She [a patient] told me “if people found out I am taking psychiatric medicine then no one would speak to me again”. That is how scared she was. She said that she was convinced she needed the psychiatric medication. She agreed that she had Depression. I had given her some brochures and she went through them. She told me that she could see all the symptoms in her and that it was Depression. But later if her family and everyone else found out that she had taken psychiatric medicine then ... she cannot have a career and so on. I told her Psychiatric medicine is not addictive and it does not bring any stigma or problems. (HCP-R)
Relationship with the baby

Participants described difficulties with emotional and practical aspects of baby care and this impacted on the relationship between the mother and child. Participants noted that mothers with PPD may throw their child or harm them in some other way. Participants acknowledged that such mothers who may harm their baby are unaware of what they are doing. Such mothers lose their enjoyment of life and as mothers. Najla, who was diagnosed with PPD, talked about her experience with her first child and what she was doing to her baby when she was not yet diagnosed with PPD:

*I wanted to hurt my child and tried to set my house on fire and things like that you know ... All these months I tried to harm my son. I tried to choke him while he was asleep and he even turned blue.* (Najla, Saudi mother, 28 years, two children)

Amal described her experience of not wanting to touch her baby or even to look after him. Amal said her Depression was the cause of attachment difficulties with her son. She said:

*I did not want to take care of the baby. I did not want to hold him. I left everything to the maid ... I left everything to the maid even though that was not my nature or my habit. And to this day I have not changed his diaper. To this day I have not given him a bath. To this day I do not breastfeed him. Whenever I put him close to my chest I feel uneasy. So I was in the situation of Depression.* (Amal, Saudi mother, 39 years, four children)

Committing suicide

Participants rarely mentioned suicide during the interviews, perhaps because in Saudi society suicide is not acceptable. This is reflected in words used by Nouf, who said: “*cases like this, God forbid, lead to the mother committing suicide*”. Lena too used similar words: “*God forbid it may even lead to suicide*”. Participants believed committing suicide to be the most serious impact of PPD. Lena spoke of a family friend, whose daughter committed suicide because of her Depression:

*There is just this story of my father’s friend, his daughter committed suicide because of PPD ... She was eighteen years old ... the family is well known here in Makkah, she threw herself from ... After the delivery, she was still in her forty days after delivery and she threw herself from the ... and died. ... so the reason was Depression. That was the first time I heard*
that Depression could cause this. For the first time I felt the seriousness of Depression. 
(Lena, Saudi mother, 24 years, one child)

5.8.3 Barriers and facilitators to accessing primary mental health services

5.8.3.1 Barriers to accessing primary mental health services

The participants spoke of barriers that could prevent or delay them accessing health care. These barriers included the stigma attached to mental illness, transportation difficulties, seeking help from religious healers, lack of quality health care, non-recognition of PPD as a serious illness, and side effects of anti-depressive medication.

Stigma attached to mental illness

As earlier described in Section 5.8.2.4, stigma seemed a major barrier for the study participants. Women felt ashamed when they felt they were unable to meet societal expectations of motherhood. For example, Susan explained that people may not want to sit with a person as “she has a psychological illness”. However, they would “sit with her [a woman] if she always complains of a headache, but psychological illness no”.

As a result of stigmatisation of people with mental illness in Saudi culture, people are likely to conceal their mental illness from others, unlike other illnesses. Because of the fear of being labelled as mad or crazy, sufferers of mental illness often experience social isolation from their family or society. Just seeking the help of mental health services could damage a woman’s marital prospects, increase the likelihood of marital separation or divorce, or increase marital conflicts. Within the Saudi context, when a wife has a mental illness, it can be an excuse for the husband to take a second wife. Thus, a fear of the stigma of having a mental illness and the implications of such labelling seem to prevent women from accessing mental health services, as clearly reflected in the quote below:

Our society’s culture is that way. I do not know if it is something unacceptable for them or it is a stigma, I don’t know. If I have a mental problem then I must stay quiet, but if I have a biological problem then I can go around and talk about it yes, and get help from the best doctors. Only a small minority consult psychiatrists. The majority say why do I go to a psychiatric doctor; am I mad? It is seen as a stigma to go to a psychiatric doctor. Even those who do go to psychiatrists don’t tell people that they do. They go
there secretly. I am talking about my society (laughs). But this is the reality! The minority that does go, does so with secrecy. And they benefit and everything but they do not tell anyone that they benefitted so that no one asks them “how” or “why did you go?” Even though it is just an illness like any other biological disease. (Susan, Saudi mother, 32 years, four children)

Previous research has identified stigma as a key reason for reluctance to access services. Green and colleagues (2005) found that stigma led to social exclusion and withdrawal. Edwards and Timmons (2005) examined six women who were diagnosed with severe PPD, to explore and gain an understanding of a mother’s experiences in relation to stigma. Women concealed their PPD due to the stigma. Eapen and Ghubash (2004) described stigma relating to mental services as being prevalent in Arabic society, which influenced women’s help-seeking behaviours.

Health care providers also confirmed that women could present with somatic symptoms and a physical examination would reveal no medical problem; the problem was emotional. So emotional problems were presented as somatic problems, as one health care provider said:

If she has a headache for example and she keeps thinking about it and later seeks help. So she may go to the doctor for example and the doctor examines her and finds out there is no problem ... but the problem in her head may cause this ... Some of them may be looking for physical problems. But the root of the problem is that ... it is actually an emotional problem. (HCP-R)

It is most likely that women present with somatic symptoms, as reflected in the above quote, when they are having an emotional problem, because of the stigma associated with mental illness. Due to cultural influences regarding the mental health of women, they prefer to report somatic symptoms.

**Transportation difficulties**

Participants spoke of the difficulties they faced under Saudi culture and law, where women are not allowed to drive and are not allowed to travel without a male accompanying them. Several participants spoke of transportation issues as the main barrier for accessing health care. As one woman said, “There is no one to bring me to the centre”. Participants described being unable to attend their appointments at the centre without their husbands or, at the least, needing to obtain their permission to go
out. Participants pointed out that husbands always tried to make excuses for not bringing women to their appointments:

> For example [the husband] will say to you “I am busy” or “I want to sleep” and some of them say “I feel lazy”. I heard them say, “My husband does not like to bring me” ... that’s it. Some of them don’t give you any details of course as they may be shy or so. Or he will say to you he is busy at work or “I am not free for you”. (HCP-M)

**Belief in supernatural causes**

As previously highlighted, many of the participants attributed their PPD to supernatural causes; women spoke of mental illness caused by possession by evil spirits or demons. Influenced by such belief, women in Saudi Arabia may be reluctant to seek help from primary health care centres, as supernatural causes are thought to be best treated by religious or faith healers; health care professionals are unable to provide the care needed for those who are affected by the evil eye, spirits or demons.

**Lack of quality health care**

Lack of quality health care was another barrier, and this included lack of trust in health care providers, difficulty getting anti-depressive treatment from primary health care, and doctors’ language and communication.

Trust in health care providers appeared to be very low. Reasons provided tended to be more cultural than personal. Social workers in the study said that most women do not trust doctors sufficiently to share their emotional problems:

> People in our society tend to think and say “How can I tell a stranger all my secrets?”, “Can I trust this person [the doctor]?” and “Who is this person [the doctor] anyway?”

> The doctor could be a stranger to her. She [the woman] may not open up to her [the doctor]. Even if the doctor told her to do something ... she [the mother] will say it’s just the doctor. (HCP-J)

When asked for the reasons for not trusting health care providers, participants mentioned providers’ level of experience. One woman said:

> They [the doctors at the PHC centre] do not have any experience. But I don’t know why it is thought so that if the doctor is working at a big hospital then he must be good ...
experience. The health care centre may give me any treatment and pass me on. (Susan, Saudi mother, 32 years, four children)

Women reported difficulty in getting anti-depressive treatment from primary health care centres. Najla, a PPD patient, explained the difficulties she experienced in getting treatment from the primary health care centre because of the GP’s level of experience:

*Will the centre give me anti-depressive medicine? No, of course [GPs] will not give it to me. I should go to [the psychiatrist] who is specialized and experienced. It is not to find fault with the primary health care centre.* (Najla, Saudi mother, 28 years, two children)

Participants claimed people in Saudi Arabia do not trust doctors as they believe “*the education and qualification*” of the physician “*are not up to the mark*” and also at times “*anti-depressive treatments are not available*”. Hence, they are reluctant to seek help from PHC centres. As one woman stated, the “*primary health care centre may give me any treatment and pass me on*”, suggesting that she did not have much confidence in the services provided by PHC centres.

Similar to the views expressed by women, a health care provider reiterated the inadequacy of the staff of the PHC centres to manage women experiencing PPD:

*Unfortunately [the doctors] did not know the criteria or what symptoms or signs to look for. [The doctors] would say they know Depression and Anxiety but if you ask them how they can tell, they do not know anything about the conditions. Only a few of them had any idea.* (HCP-W)

Some participants felt that non-Arabic speaking doctors do not understand what women say. Communication with patients is essential to providing quality medical care (Timmins, 2002). Language was considered as a significant barrier in accessing primary care. It has been reported in the Saudi literature that most primary care providers are not fluent Arabic speakers; patients had language barriers with their physicians (Al-Faris, Khoja, Falouda, & Saeed, 1996; Ali & Mahmoud, 1993). The latest report released by the Ministry of Health (MoH, 2013) indicated approximately 60% of physicians in Makkah city are non-Saudi. Most primary care providers are not Saudi, and may not speak Arabic; Al-Ahmadi and Roland (2005) found 40% of patients who attended primary care centres complained of language barriers. One of the health care providers I interviewed spoke of the language difficulty facing non-Saudi doctors, as she described
a personal experience at the primary health centre. She said a non-Saudi doctor came to her and asked her to translate what a patient was complaining of:

Sometimes when a mother comes to a non-Saudi doctor complaining about something, it is possible that [the doctor] does not understand the mother. She [the doctor] comes [to me] and asks [me to] explain what the mother is saying. (HCP-Z)

**Non-recognition of Postpartum Depression as a serious problem**

Many participants spoke of the symptoms of PPD not being considered as serious, rather as an “exaggeration of her feeling or her fear”. PPD was not considered as an illness, rather as a natural part of having a baby:

[PPD is considered] as pampering ... as exaggeration; that [the mother] is exaggerating her feelings or her fear. They will not understand the problem. I don’t know, I feel ... Our society does not believe this way, that someone has PPD. They would say everybody else got pregnant and had children and nothing happened to them.

(Lena, Saudi mother, 24 years, one child)

As reflected in the quote below, the lack of attention given to mental health issues leads to reluctance on the part of the woman experiencing PPD to take it further. It is also likely that PPD is not considered as serious a problem as physical illnesses, because of the stigma associated with mental illness:

If she had talked to her mother or sister they may not understand her and hush up the problem, make it seem minor when it actually is a major problem. If she said to her mother “I have a headache”, she would give her some medicine but if she said “I have Depression”, then she would say “that’s it, go away ... ask Allah for guidance, seek refuge from Satan ... surely you haven’t slept well, surely” ... This way they will not understand her. (Susan, Saudi mother, 32 years, four children)

**Side effects of anti-depressive medications**

Side effects of anti-depressive medications also led to delays in seeking the help of mental health services. Participants were aware of the side effects of using anti-depressive medications. Amal knew she was suffering from PPD but did not want to take medication because of the side effects.
The medication makes a person gain weight, up to 10 kg or so. I had already gained after the delivery and did not want to gain anymore. So this was the thing that prevented me from going for treatment of the Depression. (Amal, Saudi mother, 39 years, four children)

For Susan, it was the fear of addiction to the medication that made her family object to her taking medication for PPD:

The way my family thinks is that they would give you medicines and later you might get addicted to them. My family strictly objected to it ... so that they don’t give you medicines that you get addicted to and these pills also have side effects. (Susan, Saudi mother, 32 years, four children)

The issue with addiction was not only with the women; one health care provider spoke of some physicians believing that anti-depressive treatments can be addictive:

Unfortunately even among the doctors. During the psychiatric courses when we talked to them about psychiatric medications. They asked us, What is in Tryptizol? What is in Prozac? But they say the patient gets addicted to them. How can you say it is an addiction? Being a doctor you must correct this misconception among people. But sadly, the doctors view psychiatric medication as an addiction. (HCP-R)

5.8.3.2 Facilitators to accessing mental health services

The key facilitators that were generated from participant interviews include availability, self-identifying with PPD, positive attitudes toward accessing mental health services, and good rapport between health care providers and the community.

Availability

In terms of availability, health care providers spoke of availability of psychological services, female doctors and medications. Health care professionals indicated that protocols are available on how to refer women from PHC centres to appropriate psychiatric services. They believed these protocols to be appropriate at the primary health care level. One health care provider said:

The GPs in this primary centre used to transfer women to a family physician who is specialized in mental health. And [family physician] may also transfer women to a
hospital if they need ... I think to XX [name removed for privacy] hospital, based on the
protocol, which is the referral hospital for psychiatric cases ... The services are
available. I recall that one of our GPs here in the PHC always referred to this XX
family physician. They are available ... psychological care services are available.
(HCP-E)

Availability of female professionals plays a role in facilitating accessibility to mental
health services for women. Women seem to talk more freely with female professionals
than male professionals. Women feel comfortable to remove their head covering when
they attend an appointment with a female doctor. The importance of availability of
female health professionals is clearly reflected in the quote below:

Most women know they are going to see a female doctor and so they do not need to
cover up (wear a head scarf) again like when they go to see a male doctor. They are
able to comfortably talk with the female doctor ... because they are more relaxed talking
to a female doctor. The female doctor in our PHC is a good listener to women. She is
very patient and does not mind if the person wants to talk. She does not mind if there is
long line waiting outside. She gives the patients a fair share of her time. She does mind
if there are a hundred or two hundred patients waiting for her outside. (HCP-K)

Psychiatric medications are available at specific primary health care centres in Makkah
city. Health care providers have a list of nearby primary care centres where they can
transfer women to get the appropriate treatment if it is not available at their centre. One
health care professional emphasised that medications are available, as she stated:

It was around 2009 when we started [the mental health clinic] and the medications
became available to us. What are the medicines we have ... We have anti-depressants
like Tryptizol. We have Tofranil now. Cipralex and Prozac are also available now. So
these were made available and are currently present. There are several patients who
follow up with me. [Doctors] are referring patients to me from other health care centres
in Makkah. (HCP-R)

Self-identifying with PPD

Women indicated that their ability to recognise that they may be experiencing
symptoms of PPD was crucial to seeking medical help and accepting medical treatment.
Two women were previously diagnosed with PPD and self-identification of PPD as a
mental illness could be influenced by having a previous history of PPD. Najla had had a
prior episode of PPD and reported less severe symptoms in the second episode, and she self-identified the symptoms of Depression within the first month after her second birth and sought medical attention. Amal was diagnosed with PPD after her first birth, in the next two pregnancies she was free from PPD, and after the last birth she was diagnosed again with PPD. She recognised the symptoms, saying she had the same feeling as in the first episode, and she sought immediate medical help. She needed electric shocks and required admission to hospital, and explained that she was ready for this kind of treatment:

> When I saw the symptoms I had these same exact symptoms after my first childbirth of that dead baby. So I was going through the very same feelings and symptoms as the first time. So I asked [my husband] to take me for treatment as I was not able to bear it anymore. He took me to the hospital while my sisters looked after my children. I just went to the hospital directly as I was very sick. (Amal, Saudi mother, 39 years, four children)

Both Amal and Najla recognised themselves that they were experiencing PPD, so sought help from professionals. This suggests the necessity for women to have adequate knowledge about the symptoms of PPD and the available mental health services. The need for such knowledge as a facilitator to accessing mental health services was also noted by other women participants, as well as health care providers. One health care provider spoke of a female patient who recognised she was suffering from PPD and asked for help:

> Recently I saw a case. She came to me two weeks ago and said, “I have not slept in three or four days. I don’t want anyone to be around me. I cannot stand anyone. I cry all the time. I shut myself behind doors. And I feel there is someone next to me. There is someone beside me and in front of me.” Now that is a serious thing to say! So I transferred her. With a case like this ... I have not studied psychiatry to be able to treat her. (HCP-Z)
5.8.4 Help-seeking practices

Participants talked about three types of help-seeking practices: seeking help from family or friends, from faith healers, and seeking professional help.

5.8.4.1 Seeking help from family or friends

Seeking support from family, relatives or friends emerged in response to the interview questions asking the participants to identify possible sources of help for Noura’s case in the vignette. Family members were the first point of contact for obtaining help. Zahrah felt it should be the husband who should provide the support first. Other participants mentioned that it is traditional to first talk to one’s mother or sister about one’s concerns or worries, as they would have been through similar experiences. One health care provider indicated that seeking help from the family was a way of not making your problems known to the public; mental health issues were considered to be a private matter and therefore speaking about these issues to those outside the family was not considered to be good for the family reputation. The HCP’s response suggests once again the stigma surrounding mental health issues.

5.8.4.2 Seeking help from faith healers

All women spoke of coping with mental illness by seeking help from religious healers called “Sheikh” in Arabic. As presented earlier, there is a common belief that PPD is caused by the evil eye or by demons. Hence, it is not surprising that participants spoke of seeking help from faith healers, who are known to treat the evil eye or afflictions caused by demons. Faith healing is a common practice in Arab culture (Al-Krenawi & Graham, 2000), and in Saudi Arabia in particular.

5.8.4.3 Seeking professional help

Because of the stigma attached to mental illness, participants spoke of seeking professional help as the last resort. They would speak to a family member first or seek faith healing before considering professional help. However, according to a HCP, when Depression reached serious stages, then they sought professional help:

*People do not approach the primary centre until they see that Depression has reached the last stage and they become afraid of it ... that [the woman] is not normal and so on.*
Then they go to a psychiatrist. Or they come to you and say they want a referral to a psychiatrist. (HCP-A)

A health care provider indicated that women seek their help only when it comes to financial or family problems. Few women indicated that Noura in the vignette should see a psychiatrist. One participant commented that professional help should be taken into account only after faith healing has been tried, saying:

First and foremost are the religious healers who provide treatment through the Islamic “Ruqya” invocations, followed by other medical treatments. It is essential they start with the “sheikh”, who may refer them to a doctor in case he finds no demonic influence on the patient. (Zahrah, non-Saudi mother, 31 years, two children)

5.9 Discussion

In this study, qualitative methods were used to understand how women in Makkah, Saudi Arabia conceptualised PPD, and their help-seeking behaviours.

As there are no existing studies on the conceptualisation of PPD in women in Saudi Arabia, this qualitative study was undertaken with the aim of improving understanding of PPD in the Saudi context. Kleinman’s explanatory models of illness (1978) were used to understand the topic. The interviews with women in Makkah have yielded illness explanatory models of PPD, with rich descriptions of its causes and impact. Such insights are essential for the delivery of effective and culturally sensitive services.

According to Kleinman’s (1978) theory as described earlier, health care systems in most societies contain three social arenas within which illness is experienced and reacted to. These are the professional, popular and folk arenas. In the following section, I use these three social arenas to discuss the findings of the qualitative study.

5.9.1 The popular arena

Kleinman (1978) argues that popular explanations usually dictate how illness is managed and where to obtain help. In this study, the popular arena is clearly evident in the way women and health care providers conceptualised PPD. Most participants did not label the illness described in the case vignette as Depression, the woman in the vignette was labelled as “thinking too much”, being “devoid of love” and “despairing of
Kleinman (1980) posits that illness has different languages as it can move from different health care system sectors. In the popular arena, the beliefs, values and behavioural norms of participants about the cause and meaning of PPD were described at length. The majority of the women did not label Noura as having a mental illness. Even though many of them mentioned the same symptoms considered to represent a possible case of PPD that are used to diagnose Depression according to diagnostic criteria (APA, 2000), they did not conceptualise PPD as an illness.

It is likely that women did not label PPD as an illness because of low awareness or knowledge of PPD. There is limited prior research documenting Arabic women’s understanding of PPD. Nahas and colleagues (1999) interviewed 45 Middle Eastern migrant women in Australia and reported that the majority of women had never heard of PPD until they came to Australia. In a more recent study by Ghubash and Eapen (2009), a focus group discussion was conducted among 19 Arabic women in the United Arab Emirates, which showed that none of the women conceptualised PPD as a mental illness. Thus the findings of this PhD study are similar to findings presented in the limited available literature, and clearly suggest poor mental health literacy among women in this study. It is likely this lack of knowledge may prevent recognition of PPD.

A number of researchers have identified cross-cultural similarities in women not identifying PPD as an illness, as noted among a group of West African mothers living in the UK (Gardner et al., 2014), in South Asian mothers (Wittkowski et al., 2011), and in women from black and minority ethnic communities in Wiltshire, UK (Templeton et al., 2003). In the United States, a pilot study examining the feasibility of using group therapy for postpartum depressed mothers reported a major recruitment barrier was related to participants’ lack of understanding of PPD and a reluctance to admit they were depressed (Ugarriza, 2004). Evidence shows that people from different cultural backgrounds have different constructions of mental illness and, therefore, different ways of seeking help. It should be noted that this current study included women from diverse ethnic backgrounds, and they described Depression in culturally specific ways. For example, in two interviews with women who were originally from Burma, they spoke of Noura’s distress using the expression “thinking too much”, an idiom commonly used in Asian cultures to describe emotional distress. For example, this idiom was reported
among Maldivian women (Razee, 2006), Karen women (Watkins, 2012) and Cambodian women (D’Avanzo, Frye, & Froman, 1994).

Explanation of causes of PPD within the popular arena revealed that socio-cultural causes were thought to be the most common contributors to PPD for the participants. Sex preference (wanting a male child) was a salient contributing factor that was mentioned by both women and health care providers in this study. Previous studies have strongly implicated the pressure to give birth to a male child as a cause of PPD (Ghubash & Eapen, 2009; Rahman, Iqbal, & Harrington, 2003; Patel, Rodrigues, & DeSouza, 2002). In this study, almost all participants mentioned that giving birth to a girl when a boy was preferred could be a cause for Depression. The importance given to boys is evident in some of the laws and customs of Saudi Arabia. As noted earlier, in Arabic societies, the name of the father and mother change after the birth of the first son, which is considered to be symbolic of respect (Ghubash & Eapen, 2009; Mohammad, 2007). The father will be called Abu (which means “father of”) followed by the son’s name (Ghubash & Eapen, 2009) and the mother will be called Um (which means “mother of”) followed by the son’s name.

The sex of the baby was also ascribed as a cause for Depression when the couple had already got boys and the wife would have preferred a girl. Thus, this current study further reiterates the significance for male child preference in Saudi Arabia, and this has serious implications for the mental health of women. Pressure surrounding the sex of the infant has been reported in South Asian literature as well. Patel and colleagues’ study among Indian women found that an infant’s sex was an absolute risk factor to Postpartum Depression and a major effect modifier for other risk factors for PPD (Patel et al., 2002). The reasons for son preference in many cultures were mainly related to economic benefits, and reflect women’s subordinate position in the family and society (Rodrigues et al., 2003; Winkvist & Akhtar, 2000). In this PhD study, preference for a boy is clearly noted as a risk factor for PPD. However, the study findings do not suggest that the birth of a boy protects women against PPD.

Prior researchers have identified that while some traditional postpartum practices may be detrimental to postnatal mental health, others can be protective for PPD (Bina, 2008). Postpartum practices in Saudi Arabia include staying at the parents’ home, not going out unless necessary, eating well-balanced food, and getting support from family or
relatives. The most beneficial aspect of traditional practices during the postpartum period is receiving the family’s support (Grigoriadis et al., 2009). Similar to prior research findings, the current study suggests that strong support from the family protected women from PPD, while lack of support contributed to the development of PPD. Nahas and colleagues (1999) found Arabic women living in Australia experienced PPD due to the lack of social support from their families, friends or neighbours who shared the same traditional practices. Research has consistently shown that Arabic women expressed a great desire for more help (Stuchbery, Matthey, & Barnett, 1998), suggesting that Arabic women may be more dissatisfied with the support they receive and this may be because their expectations for support are higher, as traditionally they expect and value family and community support. In the literature the 40-day rest period has been identified as a protective factor. However, in this PhD study the 40-day period is considered as a risk factor and this is a novel finding that this study adds to the existing literature. The restrictions from the husband on the mobility of the wife, especially during the 40-day period, are an important aspect in the development of PPD. Evidence shows Saudi women perceived that limited mobility due to the gender roles negatively influenced their health (Alyaemni et al., 2013).

Kleinman’s (1978) popular arena was evident not only in how women and health care providers conceptualised PPD, but also in how they understood the course of treatment of PPD. Kleinman (1980) argues that individuals first managed the illness within the family, and decisions were made based on family values and beliefs about the illness. Women in this study first sought help from their family and friends. However, in those instances where they perceived the symptoms to be serious, they sought professional help. Folkman (2013) argues that the individual is bound by the cultural rules that shape and influence their behaviours, and this could impact on emotional life. The cultural factor was important for the women in this study. As many of the women and health care providers indicated, mental illness is highly stigmatised and, as a result, women did not want to seek professional help. As Corrigan and Watson (2002) state, seeking help from a psychiatrist would label them as mad which, as was echoed in this study, would mean not just the individual woman, but their family would be stigmatised. Moreover, seeking professional help could even jeopardise their future prospects for a job. Thus, cultural beliefs were a major deterrent to seeking professional help. This may explain why women kept their PPD hidden from health services and, when they did seek help,
they would present with somatic symptoms. For many of the participants in this study, PPD is considered to be a private matter and therefore they would seek counsel from family members and not access appropriate mental health care. Similar help-seeking patterns have been reported in studies from India and Hong Kong (Chan, Levy, Chung, & Lee, 2002; Rodrigues et al., 2003). In these communities, it is unacceptable for a woman to talk about her feelings or even discuss anything related to the emotions.

### 5.9.2 The folk arena

In this study, supernatural explanations were an important finding, not just for the conceptualisation of PPD but also for help seeking. Women and health care providers attributed PPD to supernatural causes such as the evil eye or demonic influences such as Jinn possession. The phenomenon of supernatural spirits causing mental illness is commonly accepted in Muslim communities (Al-Krenawi & Graham, 1999; Al-Krenawi, Graham, & Kandah, 2000), in particular Saudi Arabia. It is believed the postpartum period is a common time in which Jinn possession can occur, due to women’s vulnerability (Hanlon et al., 2009; Ghubash & Eapen, 2009). The topic of Jinn possession in cases of Postpartum Depression was described recently by Hanley and Brown (2014), where ten Arabic mothers considered to have been possessed by Jinn during the postnatal period showed symptoms and aetiology similar to Western concepts of PPD. In a study of women living in the United Arab Emirates, women attributed Depression to Jinn possession or the evil eye (Ghubash & Eapen, 2009). They also used a local term: *Umm al-Sibyan*, which relates to a myth about the presence of unforeseen supernatural forces that affect the mother after giving birth to a baby boy (Ghubash & Eapen, 2009). The findings of this PhD research echo the above-mentioned studies in Arabic countries. This conceptualisation of PPD within what Kleinman (1980) calls the folk arena is not surprising considering that many Muslims believe in the existence of supernatural spirits such as Jinn. Such conceptualisations may explain why the participants in this study commonly spoke of seeking help from religious healers.
5.9.3 The professional arena

In this study, the professional arena was reflected in the responses of a very few of the participants, who considered hormonal changes and previous history of Depression as causes of Postpartum Depression. As is to be expected, more of the health care providers indicated biological causes for PPD. Interestingly, all of the women and the health care providers mentioned that they had come across cases of PPD that they believed were attributable to non-biological causes. The work of Murray (2012) in central Vietnam identified similar results, finding that only a small number of health care professionals viewed biological causes as possible causes of PPD. It was also found that women with mild or moderate cases of Depression did not seek help from health services, were usually treated at home and believed the problem to be resolved after approximately six months.

The medical model explaining PPD describes it as a reaction of pathological response to motherhood. This kind of belief was found among the participants of this study, which may explain the women’s attitude regarding seeking medical help and therefore accessing services.

5.9.4 Accessing health services

Many of the barriers to care described by the health care providers and women in this study were rooted in cultural understandings of PPD. Stigma attached to mental illness was the main barrier to accessing health services. Women felt ashamed of their feelings, not only because of their inability to meet societal expectations of motherhood, but also because of their fear of being labelled mad or crazy which could result in social isolation and bringing shame to the family. These findings reinforce the current literature indicating that shame, stigma, and the fear of being labelled mentally ill are significant barriers to accessing health services for PPD (Shakespeare, Blake, & Garcia, 2003; Templeton et al., 2003; Ugarriza, 2004). Arabic women are very private, and religion plays a strong role in coping with mental health issues. Some participants considered it to be unacceptable to discuss family problems with a “stranger”. Women often express somatic symptoms, which are more socially acceptable.

Interactions and relationships built between patients and health care providers seemed to be important factors for women in Makkah, Saudi Arabia, in deciding where to seek
care. In this study, lack of trust in health care providers was identified as a barrier to accessing health services, which is an essential element of quality care. This study suggests that there are different reasons why women do not trust health care providers. Participants described difficulty in discussing mental health problems outside the family, doctor–patient relationships, trust in health care professionals, and health care providers’ knowledge and experience.

Most women related their barriers to accessing health services to a lack of trust in HCPs. In Saudi Arabia, primary health care providers are still viewed as doctors who graduate from medical school without any postgraduate education or experience. Most studies highlight the importance of improving undergraduate psychiatric training in Saudi physicians (Almoshawah, 2010; Al-Khathami, Mangoud, Rahim, & Abdumadini, 2013). Therefore, lack of adequate training among doctors also appears to influence patients’ decisions to manage mental illness themselves. Findings suggest the importance of health literacy and patient–provider communication. This highlights why women do not trust health care providers at PHC centres and provides insight into lack of use of health services because of lack of trust. These findings could be used in efforts to improve relationships with health care providers and quality care at primary health care centres in the future.

5.10 Summary

This qualitative study has enhanced the knowledge of the conceptualisation of PPD, and barriers and facilitators to accessibility to primary health services among women in Makkah, Saudi Arabia. The analysis describes some important points in relation to how these women conceptualise PPD and access primary mental health services. The work of Kleinman (1980) provided a lens for analysing the conceptualisation of PPD and discussing the results. Women’s conceptualisation and their help-seeking practices, as well as access to mental health services, is embedded in cultural and social norms and in Islamic beliefs. The influence of culture and religious beliefs on the way women conceptualise PPD has been noted in this study.

The findings reveal that while many women identified the symptoms of PPD described in the vignette, most of them did not recognise PPD as an illness. In their view, social
(e.g. lack of system support or sex preference) and supernatural (e.g. black magic or the evil eye) causes are the most influential factors attributed to PPD. Stigma attached to mental illness, transportation difficulties and lack of quality health care were found to be significant barriers to accessing mental health services. Most women managed PPD within the family, although some sought help from religious healers or health care professionals.
Chapter 6
General discussion and conclusion

This chapter brings together the findings from the quantitative and qualitative studies and discusses the methodological implications of these findings and the implications for service provision and future research. The findings of each study for this PhD research have been previously discussed in Chapters 4 and 5, within the context of the existing literature. In this chapter, I also discuss the strengths and limitations of the study, and make specific recommendations for clinical practice and future research.

This study sought to assess the prevalence of Postpartum Distress using different measures, including diagnostic criteria and self-report measures, and to understand the conceptualisation of PPD and accessibility to primary mental health services in Makkah, Saudi Arabia. The literature review (Chapter 3) indicated a lack of knowledge of the prevalence of Postpartum Distress in Saudi Arabia. As earlier pointed out (Section 3.2.2.1), most published studies estimating prevalence rates are for Western countries and the few studies from Arab countries focus on Depression but not Anxiety. In this study, Anxiety was included in the assessment of Postpartum Distress. Thus, this study firstly adds to the existing literature on mental wellbeing of Arabic women, providing a broader understanding of Postpartum Distress, and documents the magnitude of Postpartum Distress in Makkah, Saudi Arabia. Secondly, the study provides new insights into how Postpartum Distress can be measured, especially in culturally appropriate ways. Thirdly, the study documents some of the determinants of accessibility to mental health services to women in Saudi Arabia.

The findings of this study provide a foundation for developing mental health policy and mental health interventions in Saudi Arabia, particularly in Makkah. This is a significant contribution as, to the best of my knowledge, this is the first time that any empirical studies on Postpartum Distress have been undertaken for Makkah, Saudi Arabia. The findings are applicable not just to Saudi Arabia but may also contribute to better tailoring of mental health interventions and assessment of Postpartum Distress among women with an Arabic background who have migrated to other countries. At a global level, this study adds to the current literature on conceptualisation of PPD as well as
social determinants of mental wellbeing of women. Finally, this study provides valuable information that can enhance cultural competency of mental health service providers.

6.1 Understanding Postpartum Distress

The findings from the present study confirm the presence of high prevalence rates of Postpartum Distress among Arabic-speaking women in Saudi Arabia. As pointed out in Chapter 4, the prevalence rates of Distress were higher than what has been reported previously in the literature (Amr & Balaha, 2010; Gavin et al., 2005; O’Hara & Swain, 1996; Norhayati et al., 2015). The high prevalence rates discussed in Chapter 4 (Section 4.6.2) clearly establish that Postpartum Distress for this population group is a major public health problem.

What is more significant is that even though about one-third of the study population were Saudi women, Postpartum Distress was significantly higher in this group compared to non-Saudi women (see Section 3.6.2). This is particularly important given that the qualitative findings clearly suggest that women did not recognise PPD as a health issue of concern (see Section 5.8.2.1). The high prevalence of Postpartum Distress identified through the quantitative methods (Chapter 4) and the findings of the qualitative study (Chapter 5) have major implications for mental health services in Saudi Arabia.

As discussed in Chapter 5, women’s explanations for PPD are embedded in their cultural beliefs (e.g. religious beliefs in supernatural causes for mental illness) and societal expectations (e.g. meeting societal expectations of motherhood). The language used by some women to describe what Noura in the vignette was experiencing reflected that most participants believed she needed help. However, for a few Noura was not suffering from a mental illness, rather her problems were associated with a lack of religious faith. For others it was more to do with her relationship with her husband. Thus, the kind of help Noura needed was considered by most participants to come from either family or religious sources and not from professional sources. Given that this study showed a high prevalence rate of PPD, this lack of recognition of PPD as a health issue reflected in the qualitative findings is likely to lead to delays in seeking the professional help that these women need, or women not getting any treatment at all.
Delays in treatment of PPD and/or PPD being left without treatment can lead to serious negative consequences for the mother, child, the family, the society (Flynn, Davis, Marcus, Cunningham, & Blow, 2004; O’Hara & Swain, 1996; Stowe et al., 2005). As pointed out in Chapter 3, women with PPD are at a higher risk of committing suicide (Gavin et al., 2015). As noted in the qualitative findings (Section 5.8.2.4), isolation was also noted as a significant impact of Depression on mothers, because women were unable to share their feelings with others because they perceive stigma from others. Moreover, suicide is considered to be a sin and therefore it is unlikely that women who have suicidal ideation will talk about it, further increasing the negative consequences for the postpartum mother and the baby. Lindahl, Pearson and Colpe (2005) reported that PPD also increases the risk of infanticide. Furthermore, evidence shows that children of depressed mothers have been affected with psychological problems throughout their lives (Gavin et al., 2015). The qualitative findings of this study confirmed that women with PPD had difficulties with the emotional and practical aspects of infant care and this impacted on the relationship between the mother and child. Talge and colleagues (2007) found that children who do not receive the emotional bonding and/or care during their early childhood are likely to have neurodevelopmental problems.

PPD in mothers has been linked to paternal Depression (Goodman, 2004; Paulson & Bazemore, 2010). Increasing evidence shows that partners of depressed mothers also reported symptoms of Depression. In Paulson and Bazemore’s (2010) study, a moderate positive correlation was found between Depression in mothers and fathers \(r=0.308\). Therefore, it was suggested that PPD impacts on marital relationships and lead to marital dissatisfaction and conflicts (Beck, 1996; Burke, 2003), which affect the family mental wellbeing.

PPD impacts not just the individual but also the broader society, given that women with PPD have more work absences and more visits to health services; therefore the burden on the health system is greater. Weissman and colleagues (2006) reported that women who were diagnosed with PPD had functional disability and greater use of psychiatric services. They also found that the children of depressed women suffered from long-term problems, which lead to greater use of health services.

The negative impacts of untreated PPD on various aspects of life have been investigated widely (Boyd et al., 2005) and are well documented. Given that the women in this study
were for the most part unlikely to recognise PPD and, even if they did, were unlikely to seek professional help, it is important for health professionals to screen women who are at risk of PPD and provide professional care.

Many countries recommend routine screening in postpartum women (Wisner, Austin, Bowen, Cantwell, & Glangeaud-Freudenthal, 2015; Gjerdingen et al., 2009). Screening provides an opportunity for early identification, prevention and treatment and improves clinical outcomes (Stowe et al., 2005; Myers et al., 2013). The successful implementation of a screening program would require important factors to be considered. Various important questions of why, who, what, where, when and how need to be addressed for successful implementation of a screening policy (Yawn et al., 2015). A full consideration of all these questions is beyond the scope of the present study. Due to time and resource restraints, only some of the questions that could contribute to the promotion of such screening in Saudi Arabia have been addressed and these were discussed chapter 4.

6.2 Methodological considerations in measurement of Postpartum Distress

In screening, as discussed in Chapter 3 (Section 3.3), a number of tools are used, such as EPDS (Cox et al., 1987), PHQ-9 (Kroenke et al., 2003) and BDI-II (Beck et al., 1996). It is important to consider what tool (or tools) should be used to screen women in Saudi Arabia. Time of completion, test characteristics and the cultural appropriateness of the screening tool are key factors to determine the suitability of a screening tool. These aspects were discussed in in Chapter 4.

As previously noted, the EPDS is the most widely used screening measure for Postpartum Depression internationally (Henshaw & Ericksen, 2015). The 10-item scale can be completed in very short time and has been validated in Arabic women; however, not in Saudi Arabia (Ghubash et al., 1997; Matthey & Barnett, 1997; Agoub et al., 2005). Scholars have suggested that the EPDS be validated in the sample of women that it is used for (Lien, 2007). In this study I followed this recommendation and examined the validation of EPDS in women in Saudi Arabia. This validation showed a difference in the cut-off scores and thus reiterates the need for validation as recommended by Lien (2007). As discussed in chapter 4 in this study, an EPDS cut-off score of 7 or more was found to be optimum for the screening of Postpartum Distress in a sample of postpartum women in Saudi Arabia; previous studies with other population groups have used
different cut-off scores of EPDS. For example, Matthey and Barnett recommended an EPDS cut-off score of 10 or more for the screening of Major Depression in a sample of postpartum Arabic women, whereas Agoub and colleagues found 12 or more to be the optimal cut-off score to screen women for Major or Minor Depression. Given that previous studies have used higher cut-off scores compared to the cut-off score found in this study, the prevalence rate of PPD would be deflated. An EPDS cut-off score of 7 or more provided the optimum trade-off between sensitivity (with 77% of women with Postpartum Distress correctly identified) and specificity (with 85% of women without Postpartum Distress correctly identified). The results showed that the Arabic version of the EPDS has good psychometric properties among the study population. Thus, this study suggests that EPDS is an appropriate tool, but using a cut-off score of 7 or more, which is lower than what has been recommended by previous studies.

Selection of an appropriate screening tool for use with women in Saudi Arabia may be influenced by the cultural conceptualisation of PPD among women in Saudi Arabia. As was uncovered in the qualitative study (Section 5.8) and has also been documented in the literature (Shakespeare et al., 2003), women are reluctant to share their feelings with health professionals and to come forward for screening. Arabic women are likely to conceal their emotional feelings, as it is considered culturally inappropriate to talk about their feelings (Brealey et al., 2010). This study suggests that MGMQ is likely to be of greatest use to health care professionals to screen for emotional difficulties, and administration of this tool is easy and does not take much time.

Current evidence recommends routine screening for PPD be done at least twice to differentiate between transient and enduring distress (see Section 4.6.4) (Ayers et al., 2015). An advantage of repeat testing is that it reflects an accurate prevalence rate of women with enduring distress (Matthey & Ross-Hamid, 2012). If rates of Depression or Anxiety are based on a single administration of the scales, women may be referred unnecessarily to mental health specialists, as it is likely that the results of the single screening would show transient distress. Transient mood disorders are more common than long-term disorders in the perinatal period (Ayers et al., 2015). The findings of this study reiterate the current literature; around 30% of women no longer scored high on EPDS at Time 2. Furthermore, using MGMQ and Faces Scale, approximately 50% of women no longer continue to be distressed at Time 2. High scoring women could be
labelled with mental illness based on just one administration of the screening test, and this would not only put an unnecessary burden on health services, it also has implications for further stigmatising women. As the qualitative findings clearly showed, women with a mental illness face stigma and discrimination that can have grave consequences for them such as ending their marital relationship, losing jobs and becoming isolated from others. Polygamy being common in Saudi Arabia (Al-Krenawi, 2013), when a woman is labelled as having a mental illness this can provide a ‘valid’ reason for the woman’s husband to take another wife. This was clearly noted in this study by Reem’s theory that Noura’s husband was creating problems and Noura therefore thinks too much, and she is afraid that thinking too much could lead her husband to marry another wife. ‘Thinking too much’ is an expression of distress, and from Reem’s view is a valid reason for Noura’s husband to re-marry. Moreover, the impact is not just on the woman herself but also her entire family. Therefore, as is shown in the findings of this study, it is recommended that clinical settings adopt a repeat testing approach to avoid pathologising women with transient symptoms (Matthey, 2010).

While a screening tool provides a score that helps identify a woman with PPD, health care providers need to be careful in how they interpret these scores. As the literature shows, women should not be diagnosed only based on the scores of EPDS. An adequate diagnostic assessment should follow any self-report screening tool, as self-report screening tools are not diagnostic tools (Henshaw & Ericksen, 2015). Younkers, Vigod and Ross (2012) suggest health care providers should evaluate women with elevated scores using standardized diagnostic interviews. However, there is much debate regarding the most effective way to apply diagnostic criteria in the perinatal period. As discussed in the literature review (Section 3.2.2.5), DSM criteria for Depression and Anxiety include somatic symptoms. The symptom criteria used for Depression and Anxiety disorders have been questioned when used in the postpartum period due to the overlap of diagnostic symptoms with the normal somatic symptoms of postpartum life; for example, loss of appetite, difficulty sleeping, or weight loss (Affonso, De, Horowitz, & Mayberry, 2000; Matthey & Ross-Hamid, 2011; Milgrom et al., 1999). Interestingly, in the qualitative findings, women indicated the symptoms presented in Noura’s case in the vignette as symptoms of PPD. However, the symptoms identified by women were symptoms that were not attributionally probed in DSM criteria; for example, low mood
or feeling anxious were symptoms of Depression. Moreover, women described lack of breastfeeding as a common sign that women are depressed. Breastfeeding is very clearly encouraged in the Holy Qur’an and therefore in Saudi culture it is highly recommended for mothers to breastfeed for up to two years if the mother is able. Failure to breastfeed when women were considered able to do it raised the issue of Depression among women in Saudi culture. Therefore, lack of breastfeeding may predict Depression in Muslim women and might be considered as a depressive symptom for health care professionals.

In the qualitative study, women questioned whether they were being good mothers and this uncertainty made them feel anxious, especially first time mothers. Depression or Anxiety in women could reflect any dissatisfaction with their role during the postpartum period and vice versa: dissatisfied women could have Depression or Anxiety. However, women’s satisfaction with the motherhood role or her experience of motherhood is not examined in mood screening tools (Matthey, 2011). This study examined the validity for Arabic-speaking women of the Being a Mother measure (BaM-13: a self-report measure of a woman’s experiences of motherhood). The Arabic version of BaM-13 has shown good psychometric properties. BaM-13 has demonstrated its ability to discern women who show up on MINI, EPDS, MGMQ and Faces Scale measures as having mood difficulties. It is important to consider how well Arabic women adjust to motherhood, which could explain the high prevalence rates of Postpartum Distress. It seems if screening comprises BaM-13 besides self-report mood measures, it would give deep insights about women’s source of distress rather than just detecting mood disorders.

### 6.3 Accessibility to primary health services

The qualitative findings suggest that the stigma attached to mental illness, transportation difficulties and lack of quality health care are significant barriers to accessing mental health services among women in Saudi Arabia. Stigma was reported as the major reason for women to conceal their feelings and not to seek professional help. As Amal’s experience illustrated, taking anti-depressive medication made her colleague regard her negatively. Qualitative data also indicated that women’s husbands may play a major role not only in their mental wellbeing but also in what women can and cannot do. For example, some of the women sought their husband’s permission prior to agreeing to
participate in the study. As women indicated, unless they were driven by a male member of their family they were unable to even bring their child for vaccination. Thus, any opportunity where women present at clinical services needs to be used by health professionals to screen them for Postpartum Distress and raise awareness of Postpartum Distress or any emotional concerns. Given the significant role that husbands play in their wives’ lives, it is also crucial for health care providers to involve husbands (or a family member) in the process of care in Saudi Arabia. Studies show that when the partners understand the problem and know what sorts of support can be provided, it results in positive outcomes for the mother’s and family’s wellbeing (Fletcher et al., 2015).

A number of barriers are likely to influence women to access health services, such as health care providers’ gender and native language. The unavailability of female health care providers was a significant barrier. The qualitative findings identified women’s preference to a female medical doctor, which is most likely to be a cultural factor. Health care providers’ native language also acts as a barrier for women, given that a high proportion of non-Saudi health care providers work in PHC settings, as discussed in Chapter 5, Section 5.8.3.1.

Health professionals therefore appear to play a critical role in providing effective screening. Previous studies have explored barriers to accessing health services and help-seeking among postpartum women (Dennis & Chung-Lee, 2006; Gavin et al., 2015; Goodman, 2004). It is worth considering the barriers that prevented women from seeking help that were explored in this study as these barriers are likely to prevent effective implementation of routine screening in the future.

The findings of this thesis suggest the importance of early detection and prevention of Postpartum Distress, given that high prevalence rates are reported and most women in the study did not recognise it as an illness. It is important for future research to examine how culturally appropriate it is to implement a screening program, and this thesis helps to fill some of the evidence gaps. The research findings help to provide an understanding of the proportion of women in Saudi Arabia who suffer from Postpartum Distress during the postpartum period. Such statistics should be useful to those working in the health system charged with planning for the provision of health and mental health services and the design of appropriate interventions for the prevention of Postpartum
Distress for high-risk women. However, research is also required to specify the appropriate time for screening, appropriate therapeutic approaches, follow-up assessment and the cost of routine screening.

6.4 Study strengths and limitations

The main strengths of this thesis are that it used both qualitative and quantitative methods to better understand the situation of Postpartum Distress in Makkah, Saudi Arabia. Other strengths of this study include its sample size (n=354), inclusion of three primary health care centres, assessment of Depression and Anxiety prevalence rates in the postpartum period within the first three months, use of different self-report measures (EPDS, MGMQ and Faces Scale), and a validated cut-off score of EPDS and BaM-13 in Arabic-speaking women in Saudi Arabia.

However, there are some limitations to the generalisability of the findings from this thesis. First, potential limitations are the 65% participation rate, study sample composition and the 48% drop-out rate between times 1 and 2.

There was an obvious low participation rate and significant difference in the nationality composition in this study. The percentage of Saudi women (36.7%) was much lower than non-Saudi women (63.3%). The possible explanation of such a low recruitment rate may be associated with the strict practice by Saudi women of the 40-day rest period, when women are supposed to stay indoors. From experience as a Saudi woman and a mother, Saudi women are not expected to go out unless it is necessary. Given that the BCG vaccination appointment is scheduled at birth, it is not considered necessary for the mother to take the child to the vaccination clinic. A family member could replace the mother and take the baby for the vaccination. It is also possible that the Saudi women’s husbands did not want them to participate in the study. The study did not explore these aspects and this is a weakness of the study.

The drop-out rate (48%) was higher than anticipated (20%) in this study; however, based on the sample size calculation (Section 4.3.4), 48 women were anticipated to score high at Time 1. Based on the estimated drop-out rate from Time 1 to Time 2, it was anticipated that around 30 to 40 women would score high at Time 1 and give data at Time 2. That was considered sufficient to reflect the rates of transient and enduring
distress. In this study, 38 women who scored high at Time 1 gave data at Time 2, which is sufficient as anticipated, despite the high drop-out rate found in this study.

There were no significant differences between women who completed Time 2 and those who did not complete Time 2 on their recruitment EPDS and BaM-13 scores, their nationality or in their infant’s age. This study found significant difference between multiparous and primaparous women who completed and did not complete Time 2, therefore this study may only represent findings on primiparous women.

Second, this study used different ways of administering the research instruments. The administration method of the four self-report measures was different across the two occasions. In the primary health care clinic (at their first appointment), the women were provided with the forms and they completed these then and there. At the follow-up phone interview, the items and response options were read to them, although women were given a copy of the measures (only 38% of women had the copy at the time of the phone interview). In this study the follow-up phone interview was the practical option for women as they had babies to care for and the next interview was two months after the first one. It was also practical for me as the researcher, given there was a lack of resource availability. Being female I cannot drive and there is no public transport, feeling unsafe as a woman to travel to the women’s homes alone lead to my preference for undertaking the reassessment using telephone interviews. Studies have shown that EPDS is reliable via telephone administration (Cox et al., 1996; Da Costa et al., 2000; Dritsa et al., 2008; Murray & Carothers, 1990).

However, in this study given that at Time 1 the tool was administered face to face and Time 2 on the phone, how these two different approaches may have influenced women’s responses is unclear. Someone sitting next to the women during the phone interview (e.g. a family member) may have influenced the women to respond positively to the questions rather than expressing their true feelings.

Third, this study looked at the instrument-order effect. This study used four self-report measures to answer the research questions. To investigate the order effect effectively, each order should have at least a sample of 50 women in 24 permutations. It was impossible for this study to recruit 1,200 women to investigate the problem, which was a supplementary analysis in this thesis. Therefore the study used six orders within the
sample size calculated to answer the research questions. The findings showed there are inconsistent differences, whether EPDS was given first or one of the other measures.

Fourth, in this study attributional probing was used to accurately classify women if they suffer from Depression or Anxiety symptoms rather than a normal process of postpartum life. The methodology used in this study—of enquiring from women themselves as to the reason for the presence of a symptom—can of course be open to question regarding the validity of the women’s views of the causes of their symptoms. Other studies have used a similar methodology in that symptoms either attributed by the women to obvious physical changes were not counted in the assessment of Depression (da Costa et al., 2009; Ross et al., 2003; Matthey & Ross-Hamid, 2011). Matthey & Ross-Hamid (2011) provided examples of women’s attributions during pregnancy which indicate that there is some face validity in this method of determining whether a symptom is mood or pregnancy related. However, given that there are cultural factors that drive women’s interpretations of their symptoms, it is possible that women do not admit their symptoms because of many other underlying causes.

Fifth, in this study the analysis of the anxiety subscale was not a robust finding. Given that this study is the first Arabic study that has assessed the anxiety subscale of the Arabic version of EPDS, it was not possible to compare the findings with any other Arabic studies. In this study, the factor structures at Time 1 identified three factors: Anxiety (items 3, 4, 5, 6, 7 and 9), Depression (items 8 and 10) and Anhedonia (items 1 and 2). However, using data from Time 2, the factor structures had two components where items were mixed: Anxiety (items 1, 2, 3, 4, 5, 6, 8 and 9) and Depression (items 7 and 10). Previous studies have found the three items (items 3, 4 and 5) of the anxiety subscale were consistently loaded on anxiety factor. Therefore, further Arabic studies need to investigate using the three items of EPDS to screen for Anxiety disorders.
6.5 Implications and recommendations

Drawing upon the research findings presented in Chapters 4 and 5, this section provides concise implications and recommendations, which are discussed below. Implications and recommendations are grouped according to clinical practices and research settings and are presented following the framework of Ottawa Charter (WHO, 1986).

6.5.1 Implications and recommendations for Saudi Arabia

Saudi Arabia has been successful in reducing maternal and infant morbidity through many programs, including family-health registers, maternal and child care, and integrated child health care (United Nations Development Programme (UNDP), 2011). However, maternal mental health has not been integrated as part of maternal and child health care in primary health care. This study confirms that Postpartum Depression and Anxiety are high in women in Makkah, Saudi Arabia; particularly in Saudi women. Hence it is important that maternal mental health be integrated as part of current maternal and child health care services. Such integration would help reduce the stigma attached to mental illness and to mental health services, and also promote accessibility to primary health care (Rowe & Fisher, 2010). Although Saudi Arabia has an effective maternal and child care program and also antenatal and postnatal care accessible through free primary health care (Al-Ahmadi & Roland, 2005), the current approach is heavily based on a medical model that is focused on delivering medical services. I propose that when addressing women’s mental health, it is important to consider a health promotion approach. The literature shows that health promotion approaches are effective in addressing mental wellbeing (Herrman, Saxena, & Moodie, 2005). The Ottawa Charter (WHO, 1986) provides a useful framework for guiding the development of such mental health promotion initiatives for women in Saudi Arabia.

6.5.1.1 Developing public policy for promoting mental wellbeing of postpartum women

As discussed earlier, there is no maternal mental health policy within routine maternal care despite Al-Habeeb and Qureshi (2010) reporting that a national mental health policy was developed for PHCs across Saudi Arabia. The aim of the national policy is to identify and address mental health issues in the Saudi population, expand mental health services and the mental health workforce and improve mental health literacy. However, mental health services at the PHC level do not exist. It is important in Saudi Arabia to
integrate a routine screening program for mood disorders during the postpartum period when women attend primary health services for well-baby visits or postpartum visits. Current practice is that when mothers bring their babies, the health care providers focus on the baby’s wellbeing. Given the difficulties discussed earlier (e.g. transport issues, stigma), it is important that even during well-baby visits there is a focus on the mother’s mental health. Routine perinatal mood disorder screening is recommended, as occurs for example in Australia (Beyondblue, 2012; Austin, Reilly, Milgrom, & Barnett, 2010) and the United Kingdom (National Institute for Clinical Excellence [NICE], 2007). The American Academy of Paediatrics (AAP) also recommends that paediatricians screen mothers for Postpartum Depression at a baby’s one-, two- and four-month visits (Earls, 2010).

Evidence shows that screening is an important step to identify women who are at great risk (Gavin, et al., 2015) and may play a role in reducing stigma (Armstrong & Small, 2010). The qualitative findings clearly showed transportation difficulties as a barrier for accessing services. Given that in Saudi Arabia women are not allowed to drive, it makes sense for a postpartum home visits program to be considered in Saudi Arabia. The WHO has recommended home visits for postnatal care in the first week after childbirth (WHO, 2014). Such a program would enhance women’s knowledge of maternal mental health and also improve maternal and infant interaction, and help to reduce the severity of Depression (Horowitz et al., 2013).

6.5.1.2 Creating supportive environments for promoting women’s mental wellbeing

The stigma attached to mental illness in Saudi Arabia has profound implications on women’s mental health and wellbeing and the accessibility of services when they are in need. Therefore interventions must consider culturally appropriate strategies to reduce stigma so that women have a supportive environment where they don’t feel threatened to bring up issues of mental health. Based on the findings of this study, the main focus of interventions needs to be on changing the community’s perceptions of and attitudes towards mental illness, specifically on reducing stigma.

WHO (2001) recommended the global prioritization of reducing stigma as a population-based approach. Different mental health programs to reduce stigma have been launched
in various countries (Corrigan, Morris, Michaels, Rafacz, & Rüsch, 2012), through education and training interventions (Boysen & Vogel, 2008; Essler, Arthur, & Stickley, 2006; Yamaguchi, Mino, & Uddin, 2011) and media campaigns (Crisp, Gelder, Goddard, & Meltzer, 2005). It is also important to consider the provision of mental health campaigns at schools as well as campaigns aimed at the broader community to promote mental health.

6.5.1.3 Community development

Community development is considered an important element in promoting public health. Given the importance of understanding the problem based on community’s knowledge (WHO, 2004), community development initiatives need to be addressed through the involvement of mothers, young girls at schools, religious healers, families, and health care providers to build community capacity that would help to increase awareness and develop strategies to address the problem.

6.5.1.4 Developing personal skills

Awareness and early intervention strategies have been successful in many countries, including Australia (Beyondblue, 2011); it is therefore probable that such strategies could be successful if implemented in Saudi Arabia, if the cultural aspects were taken into consideration. Such strategies include education and increasing awareness of Postpartum Distress, with the provision of factual information about perinatal mood disorders at the public level. In order to address knowledge gaps among women in Saudi Arabia, public awareness campaigns (Rhodes & Segre, 2013) must be delivered by antenatal and postnatal care providers; or to women during their regular visits to primary health care centres or hospital clinics; by paediatricians, obstetricians and gynaecologists; or outside of health clinics such as during home visits over the postpartum period or at shopping malls or schools. Education would not only enhance women’s knowledge but also the knowledge of the whole family, including husbands. Saudi Arabia is a male dominated society, in which husbands can and do influence their wives’ decision-making on health issues and seeking help (Mobarak & Söderfeldt, 2010); it is therefore most important that increasing men’s level of awareness of mental health be a specific focus in Saudi Arabia.
6.5.1.4 Reorienting health services

Health care providers have a major public health role in identifying cases, referring to appropriate care (Morrell, Cubison, Ricketts, Williams, & Hall, 2015) and also increasing awareness (Donker, Cuijpers, Stanley & Danaher, 2015). Given the situation in Saudi culture, it may be important for health care professionals to provide women with an easy opening to discuss their feelings, especially during antenatal and postnatal care or well-baby visits. Nurses (or physicians) who provide antenatal, postnatal or baby care services for women could help to share knowledge (Pinto & Logsdon, 2009) and identify possible risk factors of Depression (Austin, Fisher, & Reilly, 2015), which can be promoted through a screening process (Buist, O’Mahen, & Rooney, 2015) to improve detection of PPD and Anxiety.

It is also important to educate health care providers and to provide relevant training (Horowitz et al., 2011; Rhodes & Segre, 2013) for them. This study has provided information that can provide a basis for development of a culturally competent training module for health care providers. It is suggested that these findings be incorporated into both pre- and post-service training programs for all categories of health providers.

This study has found important methodological considerations, as discussed earlier in this chapter, to promote effective screening program and culturally appropriate care. The recommendations are described below.

Clinical practices need to consider using attributional probing

The research findings concerning the rates of Postnatal Distress using the usual DSM criteria and attributional probing indicate that it would be useful to consider the attributional probing approach, given that the rates of PPD and Anxiety may be overestimated. For the reasons already discussed, it is recommended that health care providers use attributional probing as an integral part of their diagnosis protocol.

Introduction of MGMQ for screening for Postpartum Distress

Given that there are different instruments that can be used for screening Postpartum Distress, this study compared the performance of different self-report measures (EPDS, MGMQ and Faces Scale). The findings suggest EPDS and MGMQ (the bother
question) performed similarly at detecting Postpartum Distress. It is likely that direct questions screening could be a useful screening measure to identify Postpartum Distress in this population. MGMQ can be used as the first stage screening measure for a quick screen for Postnatal Distress, followed by a more detailed measure at the second screening stage. However, Faces Scale performed poorly at detecting distress on the other measure (EPDS and MGMQ) and therefore there is limited support to use Faces Scale as a screening measure.

**Cut-off score for EPDS and interpretation of the score**

Validation of the EPDS has yielded different cut-off scores among different populations and even among populations who speak the same language, and this study suggests the cut-off score of 7 or more to be optimum for a sample of Arabic-speaking women in Saudi Arabia. Thus a cut off score of 7 or more is suggested.

For women who score 7 or more in Saudi Arabia, careful consideration should be given as to how to interpret EPDS results, given that this study has found an optimal cut-off of 7 or more for detecting Depression (Major or Minor) and Anxiety against usual and probed criteria of DSM, and 10 or more for detecting Major Depression probed criteria of DSM.

However, this finding needs to be replicated before definitely recommending that this is the cut-off score to be used.

**Considerations to distinguish between transient and enduring distress**

To distinguish between transient and enduring distress, there are two approaches. The first approach is repeat testing after 2 weeks. The findings from this study support the recommendations of other studies for a repeat testing approach after 2–4 weeks (Matthey & Ross-Hamid, 2012; Wickberg & Hwang, 1996). Such repeat testing may avoid pathologising women who suffer from transient distress, which can be detrimental to their own and their family’s wellbeing. However, the drawback of repeat testing is dropout in the second testing or they experience high level of distress for quite some time. Another approach therefore would be to consider a brief screener if women score high at the first visit to assess if they are in fact suffering from significant stress. If they
are an appropriate referral can be made. This may not be feasible for services to use this approach as it takes extra time. These are some considerations to help distinguish between transient and enduring distress.

6.5.2 Recommendations for research

6.5.2.1 Methodological recommendations
This study reflected the prevalence and understanding of Postpartum Distress in women in Saudi Arabia. Given the high rate reported in Saudi women, it is recommended that studies actively seek Saudi women and recruit them, maybe through home visits rather than at PHC centres. Further research is also necessary to ensure the findings are generalised to all Saudi and Arabic women and therefore research needs to be replicated in a larger sample.

EPDS is the most widely used instrument to screen women for PPD (Hewitt et al., 2009). However, the use of EPDS as a screening instrument in women in Saudi Arabia remains culturally inappropriate because of item 10 (thought of self-harm), although screening of Depression requires important consideration of thoughts of self-harm (Cox et al., 1996; Yawn, et al., 2015). Further research is therefore needed to explore the appropriateness of the EPDS for use among women in Saudi Arabia.

6.5.2.2 Use of explanatory models to further explore mental health topics with women in Saudi Arabia
This study used the vignette with an explanatory model interview framework. The findings suggest that the use of vignettes in Saudi settings is very useful to help understand PPD and explore how women conceptualise PPD within their culture. The pilot study found the interviews that directly explored women’s experiences and perceptions did not yield useful insight. Women were reluctant to talk about their own postpartum experiences. However, when a vignette was used as a trigger, women were more forthcoming and as rapport was built using this approach, they were more open to sharing their own experiences. Thus in future research with Saudi populations it is recommended that a vignette be used, drawing on the explanatory model interview.
6.5.2.3 Conceptualisations of perinatal mood disorders by health care providers

This study explored the conceptualisation of PPD in women in Saudi Arabia and the interviews with health care providers also focused on women’s perceptions that they had encountered. This study did not explore health providers’ own views. Given that stigma is a major determinant of mental health of women in Saudi Arabia, it would be useful in future research to explore health care providers’ conceptualisation of PPD. This can help in understanding the challenges to implementing programs for promoting the mental wellbeing of postpartum women, such as screening programs.

6.6 Conclusion

In conclusion, the prevalence rate of Postpartum Distress was high in women in Makkah, Saudi Arabia; and Saudi women, in particular, showed high levels of PPD, yet they did not recognise PPD as an illness nor understand the importance of seeking professional help. The quantitative study used to assess the validation of EPDS and BaM-13 found them to be reliable and valid for use in women in Saudi Arabia. MGMG (bother question) performed well in detecting Postpartum Distress on the other measures. The study has also shown that most of the women who scored high on any self-report measure were no longer scoring high two weeks later.

Many barriers were identified, such as transportation difficulties and stigma, which is the most significant barrier that prevents women from accessing health care services. Early screening can help address some of the negative consequences that could occur for the mother, child and family. In screening there is a need to focus on adopting different methodological considerations in measuring Postpartum Distress and addressing the barriers that may prevent women from accessing health services.


Dritsa, M., Da Costa, D., Dupuis, G., Lowenstein, I., & Khalifé, S. (2008). Effects of a home-based exercise intervention on fatigue in postpartum depressed women:


& Gemmill, A. (eds), Identifying Perinatal Depression and Anxiety: Evidence-Based Practice in screening, psychosocial Assessment, and Management (pp.11-31). UK: Wiley Blackwell.


Hank, K., & Kohler, H. P. (2000). Gender preferences for children in Europe: Empirical results from 17 FFS countries. *Demographic research, 2*(1), 133-144.


perineal pain, wound healing 3 weeks postpartum, in Turkey: A prospective follow-up study. *Iranian journal of nursing and midwifery research*, 18(3), 237.


Lincoln, Y. S., & Guba, E. G. (2000). The only generalization is: There is no generalization. *Case study method*, 27-44.


Miller, L. J. (2002). Postpartum depression. *JAMA, 287*, 762-765


NVivo qualitative data analysis software; QSR International Pty Ltd. Version 10, 2012.


Prenoveau, J., Craske, M., Counsell, N., West, V., Davies, B., Cooper, P., ... & Stein, A. (2013). Postpartum GAD is a risk factor for postpartum MDD: the course and longitudinal relationships of postpartum GAD and MDD. *Depression and anxiety*, 30(6), 506-514.


Small, R., Lumley, J., & Yelland, J. (2003). Cross-cultural experiences of maternal depression: associations and contributing factors for Vietnamese, Turkish and


APPENDICES

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1.1 Approval letters from UNSW
   1.1.1 Approval letter for the qualitative pilot study
   1.1.2 Approval letter for the quantitative pilot study
   1.1.3 Approval letter for the main study
   1.1.4 Approval letter for adding the social workers to the qualitative study
1.2 Approval letters from Saudi Arabia
   1.2.1 Approval letter for the qualitative pilot study (one letter signed from MoH and UQU)
   1.2.2 Approval letter for the main study-UQU
   1.2.3 Approval letter for the main study-MoH
   1.2.4 Approval letter for adding the social workers to the qualitative study(one letter signed from MoH and UQU)

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Appendix 7: Statistical analysis
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Appendix 8: Qualitative analysis
Women characteristics
Appendix 1: Ethics Approval

1.1 Approval letters from UNSW

1.1.1 Approval letter for the qualitative pilot study

29 September 2011

Dr Husna Razee

School of Public Health and Community Medicine

Dear Dr Razee

Accessibility to primary mental health services for women in Makkah-Saudi Arabia

HREC 11317

Thank you for the email and attachments to Mrs Annamarie D’Souza dated 13 September 2011.

The Executive of the Human Research Ethics Committee considered the above protocol at its meeting held on 27 September 2011 and is pleased to advise it is satisfied that this protocol meets the requirements as set out in the National Statement on Ethical Conduct in Human Research*.

Having taken into account the advice of the Committee, the Deputy Vice-Chancellor (Research) has approved the project to proceed.

Would you please note -:

- approval is valid for five years (from the date of the executive meeting i.e. 27 September 2011);
- you will be required to provide annual reports on the study’s progress to the HREC, as recommended by the National Statement;
- you are required to immediately report to the Ethics Secretariat anything which might warrant review of ethical approval of the protocol (National Statement 3.3.22, 5.5.7) including:
  a) serious or unexpected outcomes experienced by research participants (using the Serious Adverse Event proforma on the University website at http://www.gmo.unsw.edu.au/Ethics/HumanEthics/InformationForApplicants/ProformsTemplates/C13_SAEP%20Proforma.rtf);
  b) proposed changes in the protocol; and
  c) unforeseen events or new information (eg from other studies) that might affect continued ethical acceptability of the project or may indicate the need for amendments to the protocol;
- any modifications to the project must have prior written approval and be ratified by any other relevant Human Research Ethics Committee, as appropriate;
• if there are implantable devices, the researcher must establish a system for tracking the participants with implantable devices for the lifetime of the device (with consent) and report any device incidents to the TGA;

• if the research project is discontinued before the expected date of completion, the researcher is required to inform the HREC and other relevant institutions (and where possible, research participants), giving reasons. For multi-site research, or where there has been multiple ethical review, the researcher must advise how this will be communicated before the research begins (National Statement 3.3.23 and 5.5.6);

• consent forms are to be retained within the archives of the School and made available to the Committee upon request.

Yours sincerely,
Professor Michael Grimm
Presiding Member
HREC
*http://www.nhmrc.gov.au
1.1.2 Approval letter for the quantitative pilot study
06-Feb-2013
Dr Husna Razee
Sydney NSW 2052

Dear Dr Razee

HREC Ref: # HC11317
Accessibility to primary mental health services for women in Makkah-Saudi Arabia

Thank you for your request for modification submitted on 04-Feb-2013.

The Executive of the Human Research Ethics Committee considered the above request for modifications at its meeting held on 05-Feb-2013, and is pleased to advise it is satisfied that this modification meets the requirements as set out in the National Statement on Ethical Conduct in Human Research*. Having taken into account the advice of the Committee, the Deputy Vice-Chancellor (Research) has approved this modification to proceed.

Sincerely,

Michael Grimm
Presiding Member
Human Research Ethics Committee

1.1.3 Approval letter for the main study

27-Mar-2013
Dr Husna Razee
Sydney NSW 2052

Dear Dr Razee,

HREC Ref: # HC12559
The prevalence of postpartum distress and accessibility to primary mental health services for women in Makkah - Saudi Arabia

The Human Research Ethics Committee considered the above protocol at its meeting held on 26-Mar-2013 and is pleased to advise it is satisfied that this protocol meets the requirements as set out in the National Statement on Ethical Conduct in Human Research*. Having taken into account the advice of the Committee, the Deputy Vice-Chancellor (Research) has approved the project to proceed.

Would you please note:-

- approval is valid from 26-Mar-2013 to 25-Mar-2018;
- you will be required to provide annual reports on the study's progress to the HREC, as recommended by the National Statement;
- you are required to immediately report to the Ethics Secretariat anything which might warrant review of ethical approval of the protocol (National Statement 3.3.22, 5.5.7: http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf) including:
  i) serious or unexpected outcomes experienced by research participants (using the Serious Adverse Event proforma on the University website at http://research.unsw.edu.au/human-ethics-forms-and-proformas);
  ii) proposed changes in the protocol; and
  iii) unforeseen events or new information (eg. from other studies) that might affect continued ethical acceptability of the project or may indicate the need for amendments to the protocol;
- any modifications to the project must have prior written approval and be ratified by any other relevant Human Research Ethics Committee, as appropriate;
- if there are implantable devices, the researcher must establish a system for tracking the participants with implantable devices for the lifetime of the device (with consent) and report any device incidents to the TGA;
- if the research project is discontinued before the expected date of completion, the researcher is required to inform the HREC and other relevant institutions (and where possible, research participants), giving reasons. For
multi-site research, or where there has been multiple ethical review, the researcher must advise how this will be communicated before the research begins (National Statement 3.3.22, 5.5.7: http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf);

vii) consent forms are to be retained within the archives of the PHCM - School of Public Health & Community Medicine and made available to the Committee upon request.

Regarding point (iv), the UNSW HREC application form at question 6.1 refers to researchers inducing or uncovering psychological distress. Even though the researchers have appropriate support in place, the point is not moot: the discovery of pre-existing psychological distress in the course of research becomes the responsibility of the researcher to address.

Sincerely,

[Signature]

Michael Grimm
Presiding Member
Human Research Ethics Committee

* http://www.nhmrc.gov.au
1.1.4 Approval letter for adding the social workers to the qualitative study

06-Feb-2014
Dr Husna Razee
Sydney NSW 2052

Dear Dr Razee,

HREC Ref: # HC12559
The prevalence of postpartum distress and accessibility to primary mental health services for women in Makkah - Saudi Arabia

The Human Research Ethics Committee considered the above protocol at its meeting held on 04-Feb-2014 and is pleased to advise it is satisfied that this protocol meets the requirements as set out in the National Statement on Ethical Conduct in Human Research*. Having taken into account the advice of the Committee, the Deputy Vice-Chancellor (Research) has approved the project to proceed.

Would you please note:-

- approval is valid from 26-Mar-2013 to 25-Mar-2018;

- you will be required to provide annual reports on the study's progress to the HREC, as recommended by the National Statement;

- you are required to immediately report to the Ethics Secretariat anything which might warrant review of ethical approval of the protocol (National Statement 3.3.22, 5.5.7; http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf) including:
  - serious or unexpected outcomes experienced by research participants (using the Serious Adverse Event proforma on the University website at http://research.unsw.edu.au/human-ethics-forms-and-proformas);
  - proposed changes in the protocol; and
  - unforeseen events or new information (eg. from other studies) that might affect continued ethical acceptability of the project or may indicate the need for amendments to the protocol;

- any modifications to the project must have prior written approval and be ratified by any other relevant Human Research Ethics Committee, as appropriate;

- if there are implantable devices, the researcher must establish a system for tracking the participants with implantable devices for the lifetime of the device (with consent) and report any device incidents to the TGA;

- if the research project is discontinued before the expected date of completion, the researcher is required to inform the HREC and other relevant institutions.
(and where possible, research participants), giving reasons. For multi-site research, or where there has been multiple ethical review, the researcher must advise how this will be communicated before the research begins (National Statement 3.3.22, 5.5.7: http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf);

- consent forms are to be retained within the archives of the PHCM - School of Public Health & Community Medicine and made available to the Committee upon request.

Sincerely,

[Signature]

Associate Professor Heather Worth
Presiding Member
Human Research Ethics Committee

* http://www.nhmrc.gov.au
1.2 Approval letters from Saudi Arabia

1.2.1 Approval letter for the qualitative pilot study (one letter signed from MoH and UQU)

How accessible are the current primary health care services women in Makkah – Saudi Arabia?

We appreciate your cooperation in this study and express our gratitude.

[Signature]

Dr. Ibrahim bin Muhammad Alireza

[Stamp]
1.2.2 Approval letter for the main study-Umm Al-Qura University

29-1-2013

Dear Dr. Garout

Assalam-o-Alaikum

Attached please find the final report of Ethical Committee of Department of Community Medicine on the proposal of Dr Nahla Hariri

Reference "The prevalence of postpartum distress and accessibility to primary mental health services for women in Makkah, Saudi Arabia"

Comments:

The medical ethical committee has studied the proposal submitted by Dr Nahla Hariri entitled "The prevalence of postpartum distress and accessibility to primary mental health services for women in Makkah, Saudi Arabia"

The candidate has made necessary corrections submitted to this committee through a document dated January 4th 2013. The committee has considered the proposal and found the final submission as satisfactory and the candidate can continue the second phase in research (stage of data collection).

Conclusion:

The proposal is approved by the committee and candidate can proceed to the second phase of data collection.

Members of Ethical Committee:

Prof Sirag El Rady MD
Cell; 00966506509737
email; siragm2002@hotmail.com

Prof Dr. Muhammad Irfanullah Siddiqui FCPS
Cell; 00966599060713
email; irfan7255@yahoo.com
1.2.3 Approval letter for the main study - Ministry of Health

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1.2.4 Approval letter for adding the social workers to the qualitative study (one letter signed from MoH and UQU)

To whom it may concern

Re: Dr. Nahla Hashim Hariri 15 December 2013

(The prevalence of postpartum distress and accessibility to primary mental health services for women in Makkah – Saudi Arabia” HC # 12359)

This is to confirm that the authority of Ministry of Health in Makkah city – Saudi Arabia has approved the request of Dr. Hariri to conduct the interviews with social workers in Makkah.

Dr. Mohammed A. Gaurat
Assistant Professor of Community Medicine
Department of Community Medicine
Faculty of Medicine – Umm Al-Qura University
Makkah – Saudi Arabia
Mobile: +96655554413
Email: dr.m.garoot@gmail.com

Dr. Sari I. Asiri
Health Affairs Director Assistant
of Public Health - Makkah
Ministry of Health – Saudi Arabia
Acting Consultant Family Medicine
Mobile: +966566582104
Email: dr.asiri@hotmail.com
Appendix 2: Flyer

2.1 The English version

Mothers’ experiences with new babies

Thank you very much for attending the primary health care centre.

In this study we are interested in learning what life is like for you with a new baby. We would also like to find out the ease of access to health services at the primary health care level and explore how well the primary health care services address your emotional, social and cultural needs. What we learn from you in this study we hope will contribute to improving the services for you and other Saudi women who attend the centre in the Kingdom of Saudi Arabia.

The study also includes an interview of those women who agree to be interviewed. If you agree to participate in the interview, you will be given a gift card from Mothercare shop valued SR 100 ($25) as a token of appreciation for your participation.

If you are interested in participating in the study, you can contact the researcher directly, Dr Nahla

Thank you for considering participation in the study.
عزيزتي الأم

الحمد لله على سلامتك وسلامة مولودك الجديد،

لأن صحتك وصحة مولودك تهمنا من جميع النواحي نود أن نأخذ من وقتكم الثمين لمقابلتك وطرح بعض الأسئلة لمعرفة مدى سهولة الحياة الخاصة بك كأم مع طفلك الجديد وسهولة الوصول إلى خدمات الرعاية الصحية الأولية إذا احتاجت الأم المساعدة في فترة ما بعد الولادة.

نحن مهتمون في معرفة تجاربك في طلب المساعدة لأن إجابتك سوف تساعدنًا لتقديم خدمات أفضل للأمهات في المراكز الصحية.

هناك هدية مقدمة لك وهي عبارة عن قسيمة شراء من محلات مذكر للأطفال بقيمة 100 ريال سعودي عند المشاركة.

إذا كنتي تودين المقابلة والمشاركة الرجاء مقابلة الباحثة د/نهلاء المتواجدة في المركز وسوف تقوم بمساعدتك.

 شكراً لقراءتك هذه النشرة والتفكير في المشاركة ،
Appendix 3: The Qualitative Pilot Study

3.1 women’s Interview Guide

3.1.1 The English version

Theme list/topic guide:

- Experience with Primary Mental Health Care Services (PMHCS)
- Reasons for women seeking PMHCS.
- Reasons for/not seeking help from PMHCS.
- How well PMHCS addressed the participant’s reasons for coming to centre.
- Reasons why women may not come to PMHCS for their mental health problems.
- Problems encountered in seeking help from PMHCS.
- Satisfaction with the services provided by health care professionals
- Women’s attitude toward PMHCS
- Knowledge of services offered by PMHCS
- How PMHCS can address women’s cultural and social needs
- Suggestions to improve health services for women.

3.1.2 The Arabic version

- تجربتك مع خدمات الرعاية الصحية النفسية الأولية
- ما هي الأسباب التي تجعل النساء يطلبون المساعدة من الخدمات النفسية الأولية.
- ما مدى مساعدة المركز في تقديم احتياجات المرأة.
- ما هي الأسباب التي تجعل النساء قد لا تأتي إلى خدمات الرعاية النفسية الأولية لحل المشاكل الصحية النفسية.
- ما هي المشكلات التي واجهتها في طلب المساعدة من خدمات الرعاية النفسية الأولية.
- الرضا عن الخدمات التي تقدمها العاملون في الرعاية الصحية الأولية.
- موقف المرأة من خدمات الرعاية الصحية النفسية.
- معرفة الخدمات التي تقدمها المراكز الصحية.
- كيف يمكن للخدمات تلبية الاحتياجات الثقافية والاجتماعية للمرأة.
- اقتراحات لتحسين الخدمات الصحية للمرأة.
3.2 PHCs Interview Guide

3.2.1 The English version

Theme list/topic guide:

- Experience /stories of providing services to women seeking help from Primary Mental Health Care Services (PMHCS).
- Perceptions of the social and cultural needs of women who seek help from PMHCS.
- Reasons why women may not seek help from PMHCS.
- How well provider is able to address the patients’ reasons for coming to centre.
- Reasons why women may seek help from PMHCS.
- Problems women may encounter in seeking help from PMHCS.
- Perception of women’s level of satisfaction with the services provided by provider.
- How provider addresses women’s cultural and social needs.
- Suggestions to improve health services for women.

3.2.2 The Arabic version

- من خبرتك / أو قصص عن تقديم الخدمات للنساء اللواتي يطلبن المساعدة من خدمات الرعاية الصحية النفسية الأولية.
- تصورات لاحتياجات الاجتماعية والثقافية للمرأة الذي طلب المساعدة من المركز.
- الأسباب التي تجعل النساء قد لا تطلب المساعدة من خدمات الرعاية الصحية النفسية الأولية.
- ما مدى قدرة المركز على توفير احتياجات المريض.
- الأسباب التي تجعل النساء يطلبن المساعدة من خدمات الرعاية الصحية النفسية الأولية.
- ما هي المشاكل أو العقبات التي قد تواجه النساء في طلب المساعدة من خدمات الرعاية الصحية النفسية الأولية.
- ما هو مدى مستوى الرضا عن الخدمات المقدمة من قبل العاملين في المركز.
- كيف يوفر العاملون في المركز الاحتياجات الثقافية والاجتماعية للمرأة.
- اقتراحات لتحسين الخدمات الصحية للمرأة.
Appendix 4: The Quantitative Pilot Study

4.1 The English version

Your age: ______________

How long have you been in Australia? ____________

Are you married:   Yes       No

Do you have children? Yes       No

If yes, your youngest child’s age: ______________

How many children do you have? ______________

What is the highest level of school education you attained? (e.g., primary, intermediate, high) ______________

Have you completed any further education? Yes       No

If yes, what level? Diploma / College / University / TAFE / PG/ other: ______________

In the last five years, have you visited Saudi Arabia? Yes       No

If yes, how many times? ______________
## How I feel Questions

<table>
<thead>
<tr>
<th>Questions</th>
<th>Are the wording / language easy and simple?</th>
<th>Are the idea / concept understandable?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. In the last 2 weeks have you felt very stressed, anxious, or unhappy, or found it difficult to cope for some of the time?</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>☐ Yes ☐ possibly ☐ No</td>
<td>O No</td>
<td>O No</td>
<td></td>
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<tr>
<td>If ‘No’, please stop here and turn to the next page.</td>
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<tr>
<td>If ‘Yes’ or ‘Possibly’:</td>
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<tr>
<td>1b. For how much of the last 2 weeks have you felt this way?</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>☐ 1 or 2 days ☐ 3 – 5 days ☐ about half the time ☐ more than half the time ☐ other</td>
<td>O No</td>
<td>O No</td>
<td></td>
</tr>
<tr>
<td>1c. How bothered are you by these feelings?</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>I am bothered:</td>
<td>O No</td>
<td>O No</td>
<td></td>
</tr>
<tr>
<td>☐ Not at all</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>☐ A little bit</td>
<td></td>
<td></td>
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<tr>
<td>☐ Moderately</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>☐ A lot</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1d. What has caused you to feel this way?</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
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<tr>
<td>O No</td>
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<td>Questions</td>
<td>Are the wording / language easy and simple?</td>
<td>Are the idea / concept understandable?</td>
<td>Comments</td>
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<tr>
<td><strong>How I feel Questions</strong></td>
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<tr>
<td>2a. How much do you think these feelings have interfered with your ability to do things on a day-to-day basis?</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
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<tr>
<td>They have interfered:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Not at all</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td>- A little bit</td>
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<tr>
<td>- Moderately</td>
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<tr>
<td>- A lot</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Any comments or further information?</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
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<tr>
<td></td>
<td>O No</td>
<td>O No</td>
<td></td>
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<tr>
<td>Questions</td>
<td>Are the wording / language easy and simple?</td>
<td>Are the idea / concept understandable?</td>
<td>Comments</td>
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<tr>
<td><strong>Being A Mother</strong> (BaM-13)</td>
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<tr>
<td>The items below will help us understand what you are experiencing as a mother.</td>
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<tr>
<td>There are no right or wrong answers. Just answers that tell us how you have been feeling.</td>
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<tr>
<td>For each question think about how you have been feeling over the past 2–3 weeks.</td>
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<tr>
<td>Please underline one statement for each item that is closest to how you have been feeling.</td>
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<tr>
<td><strong>Over the past 2–3 weeks</strong></td>
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<tr>
<td>1. I have felt confident about looking after my baby/toddler</td>
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<tr>
<td>□ Most or all of the time</td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td>□ Some of the time</td>
<td>O No</td>
<td>O No</td>
<td></td>
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<tr>
<td>□ Not very often</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Rarely or never</td>
<td></td>
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<tr>
<td>2. I have missed the life I had before I became pregnant with this baby/toddler</td>
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<td></td>
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<tr>
<td>□ Rarely or never</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
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<tr>
<td>□ Not very often</td>
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<tr>
<td>□ Some of the time</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td>□ Most or all of the time</td>
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<td>Being A Mother (BaM-13)</td>
<td>Questions</td>
<td>Are the wording / language easy and simple?</td>
<td>Are the idea / concept understandable?</td>
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<tr>
<td>3. I have found it hard to cope when my baby/toddler cries</td>
<td>□ Rarely or never</td>
<td>O Yes</td>
<td>O Yes</td>
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<td></td>
<td>□ Not very often</td>
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<td></td>
<td>□ Some of the time</td>
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<tr>
<td></td>
<td>□ Most or all of the time</td>
<td></td>
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<tr>
<td>4. I have felt close to my baby/toddler</td>
<td>□ Most or all of the time</td>
<td>O Yes</td>
<td>O Yes</td>
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<td></td>
<td>□ Some of the time</td>
<td>O No</td>
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<td></td>
<td>□ Not very often</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td></td>
<td>□ Rarely or never</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td>5. I have felt lonely or isolated</td>
<td>□ Rarely or never</td>
<td>O Yes</td>
<td>O Yes</td>
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<td></td>
<td>□ Not very often</td>
<td>O No</td>
<td>O No</td>
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<td></td>
<td>□ Some of the time</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td></td>
<td>□ Most or all of the time</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td>Questions</td>
<td>Are the wording / language easy and simple?</td>
<td>Are the idea / concept understandable?</td>
<td>Comments</td>
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<td>--------------------------------------------------------------------------</td>
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<tr>
<td>6. I have felt bored</td>
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<tr>
<td>□ Rarely or never</td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td>□ Not very often</td>
<td>O No</td>
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<td>□ Some of the time</td>
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<td>□ Most or all of the time</td>
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<tr>
<td>7. I have felt unsupported</td>
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<td></td>
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<tr>
<td>□ Rarely or never</td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td>□ Not very often</td>
<td>O No</td>
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<tr>
<td>□ Some of the time</td>
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<tr>
<td>□ Most or all of the time</td>
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<tr>
<td>8. I have felt alright about asking people for help or advice when I needed to</td>
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<tr>
<td>□ Most or all of the time</td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td>□ Some of the time</td>
<td>O No</td>
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<tr>
<td>□ Not very often</td>
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<td>□ Rarely or never</td>
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<td>Questions</td>
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<td>Comments</td>
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<tr>
<td>9. I have felt nervous or uneasy around my baby/toddler</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>Rarely or never</td>
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<tr>
<td>Not very often</td>
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<tr>
<td>Some of the time</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td>Most or all of the time</td>
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<tr>
<td>10. I have been worried that something would happen to my baby/toddler</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
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<tr>
<td>Rarely or never</td>
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<tr>
<td>Not very often</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td>Some of the time</td>
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<td></td>
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<tr>
<td>Most or all of the time</td>
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<tr>
<td>11. I have been annoyed or irritated with my baby/toddler</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>Rarely or never</td>
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<td></td>
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<tr>
<td>Not very often</td>
<td>O No</td>
<td>O No</td>
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<tr>
<td>Some of the time</td>
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<tr>
<td>Most or all of the time</td>
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</table>
### Being a Mother (BaM-13)

<table>
<thead>
<tr>
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<th>Are the idea / concept understandable?</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>12. I worry I am not as good as other mothers</td>
<td></td>
<td>O Yes</td>
<td>O Yes</td>
</tr>
<tr>
<td>- Rarely or never</td>
<td></td>
<td>O No</td>
<td>O No</td>
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<tr>
<td>- Not very often</td>
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<td>O No</td>
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<td>- Some of the time</td>
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<td>O No</td>
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<tr>
<td>- Most or all of the time</td>
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<td>O No</td>
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<tr>
<td>13. I have felt guilty</td>
<td></td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td>- Rarely or never</td>
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<td>O No</td>
<td>O No</td>
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<tr>
<td>- Not very often</td>
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<td>O No</td>
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<tr>
<td>- Some of the time</td>
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<td>O No</td>
<td>O No</td>
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<tr>
<td>- Most or all of the time</td>
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<td>O No</td>
<td>O No</td>
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</tbody>
</table>

If you have found being a mother very stressful, very difficult, or unenjoyable, why do you think this is?

__________________________________________________________________________
<table>
<thead>
<tr>
<th>Questions</th>
<th>Are the wording / language easy and simple?</th>
<th>Are the idea / concept understandable?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faces Scale Happiness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Very Happy</td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td>2 Happy</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>3 So So</td>
<td>O Yes</td>
<td>O Yes</td>
<td></td>
</tr>
<tr>
<td>Questions</td>
<td>Are the wording / language easy and simple?</td>
<td>Are the idea / concept understandable?</td>
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<tr>
<td>Faces Scale Happiness</td>
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<tr>
<td>4</td>
<td>Unhappy</td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td>5</td>
<td>Very Unhappy</td>
<td>O Yes</td>
<td>O Yes</td>
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<td>Questions</td>
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<td>Are the idea / concept understandable?</td>
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<tr>
<td>Scale</td>
<td>Anxiety</td>
<td>O Yes</td>
<td>O Yes</td>
</tr>
<tr>
<td></td>
<td>1 Not worried</td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td></td>
<td>2 A little bit worried</td>
<td>O Yes</td>
<td>O Yes</td>
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<td>3 So So</td>
<td>O Yes</td>
<td>O Yes</td>
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<tr>
<td>Faces Scale Anxiety</td>
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<td>Are the wording / language easy and simple?</td>
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</table>
4.2 The Arabic version

العمر: ____________________

منذ متى وانتي في أستراليا؟ ____________________

هل أنت متزوجة: 0 نعم 0 لا

هل لديك أطفال؟ 0 نعم 0 لا

إذا كانت الإجابة بنعم، عمر أصغر طفل: ____________________

كم عدد أطفالك؟ ____________________

ما هو أعلى مستوى من التعليم حصلتي عليه؟ (على سبيل المثال، الابتدائية أو المتوسطة …) ____________________

هل أكملت المزيد من التعليم؟ 0 نعم 0 لا

إذا كان الجواب بنعم، أي مستوى؟ دبلوم / كلية / جامعة / مثف / أخرى: ____________________

في السنوات الخمس الماضية، هل زرت المملكة العربية السعودية؟ 0 نعم 0 لا

إذا كان الجواب بنعم، كم مرة؟ ____________________
<table>
<thead>
<tr>
<th>تعليقات</th>
<th>هل الفكرة / المبدأ مفهم؟</th>
<th>هل الصيغة / اللغة سهلة وبسيطة؟</th>
<th>الأسئلة</th>
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<td></td>
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<td></td>
<td>1: خلال الأسبوعين الماضيين هل قد شعرت بالتوتر، القلق، أو كنتي غير سعيدة، أو وجدت صعوبة في التكيف لبعض الوقت؟ نعم</td>
</tr>
<tr>
<td>لو إجابتك &quot;لا&quot; الرجاء التوقف هنا والذهاب إلى الصفحة التالية لو &quot;نعم&quot; أو &quot;محتمل&quot;</td>
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<td>2: كم إستمر معك هذا الشعور خلال الأسبوعين الماضيين؟ يوم 1-2</td>
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<td>تقريبا نصف الوقت (حوالي أسبوع)</td>
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<td>أكثر من نصف الوقت (أكثر من أسبوع)</td>
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<td>الأخرى</td>
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<td>3: هل أزعجك هذا الشعور؟ كنت منزعجة لا على الإطلاق قليل متوسط كثير</td>
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<td>4: ما الذي جعلك تشعر بهذا الشعور؟</td>
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<td>تعليقات</td>
<td>هل الفكرة / المبدأ مفهوم؟</td>
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<td>لا</td>
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<td>2: إلى أي مدى أثرت هذه المشاعر على قدرتك للفيام بمهامك اليومية الأساسية؟ كان لها تأثير لا على الإطلاق أقل، متوسط، كثير</td>
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<td>لا</td>
<td>نعم 0 لا</td>
<td>هل لديك تعليقات أو معلومات إضافية على ما تشعرين به خلال الأسبوعين الماضيين؟</td>
<td></td>
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</table>

**أسئلة**

**كيف**

**أشعر**
البنود التالية ستساعدك على فهم ما تشعرين به كأم. لا توجد اجابات صحيحة أو خاطئة. فقط الأجوبة التي تختارها و التي توضح شعورك قبل الإجابة على كل سؤال تذكر كيف كنت تشعرين خلال الأسبوعين أو الثلاثة أسابيع الماضية. الرجاء وضع خط تحت العبارة التي تصف شعورك بالتحديد الذي مررت به خلال الأسبوعين أو الثلاثة أسابيع الماضية:

<table>
<thead>
<tr>
<th>تعليقات</th>
<th>هل الفكرة / المبدأ مفهوم؟</th>
<th>هل الصيغة / اللغة سهلة وبسيطة؟</th>
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1: شعرت بثقة وانا أربي طفلي
نعم، في معظم أو كل الأحيان
لا، في معظم الأحيان
لا، ليس في معظم الأحيان
لا نادراً أو أبداً

2: أفتقدت حيتي التي كنت أعيشها قبل الحمل بطفلي
لا نادراً أو أبداً
لا، ليس في معظم الأحيان
نعم، بعض الأحيان
نعم، في معظم أو كل الأحيان

3: وجدت صعوبة في التصرف عندما يبكى طفلي
لا نادراً أو أبداً
لا، ليس في معظم الأحيان
نعم، بعض الأحيان
نعم، في معظم أو كل الأحيان
<table>
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<th>تعليقات</th>
<th>هل الفكرة / المبدأ مفهوم؟</th>
<th>هل الصيغة / اللغة سهلة وبسيطة؟</th>
<th>الأسئلة</th>
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| 4 | لا | لا | 4 أشعر بالقرب من طفلي  
لا في معظم أو كل الأحيان  
نعم, بعض الأحيان  
لا ليس في معظم الأحيان  
لا نادراً أو أبداً |
| 5 | لا | لا | 5 شعرت بالوحدة أو العزلة  
لا في معظم الأحيان  
نعم, بعض الأحيان  
نعم في معظم أو كل الأحيان |
| 6 | لا | لا | 6 شعرت بالملل  
لا في معظم الأحيان  
نعم, بعض الأحيان  
نعم في معظم أو كل الأحيان |
| 7 | لا | لا | 7 شعرت بأتي وحيدة ولا يوجد من يدعمني  
لا في معظم الأحيان  
نعم, بعض الأحيان  
نعم في معظم أو كل الأحيان |
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<th>تعليقات</th>
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<th>هل الصيغة / اللغة سهلة وبسيط؟</th>
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<td>8</td>
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<td>لنعم 0 لا</td>
<td>أم كونك أشعر بارتياح عندما أطلب المساعدة أو النصح من الآخرين كما احتاج لذلك نعم، في معظم أو كل الأحيان نعم، بعض الأحيان لا ليس في معظم الأحيان لا نادراً أو أبداً</td>
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<td>9</td>
<td>لاأ نعم 0 لا 0</td>
<td>لنعم 0 لا</td>
<td>شعرت بالاضطراب وعدم الراحة عندما يكون طفلي معي لا نادراً أو أبداً لا ليس في معظم الأحيان نعم بعض الأحيان نعم في معظم أو كل الأحيان</td>
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<td>10</td>
<td>لاأ نعم 0 لا 0</td>
<td>لنعم 0 لا</td>
<td>كنت قلقاً أن يحدث شيء ما لطفلي لا نادراً أو أبداً لا ليس في معظم الأحيان نعم بعض الأحيان نعم في معظم أو كل الأحيان</td>
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<td>11</td>
<td>لاأ نعم 0 لا 0</td>
<td>لنعم 0 لا</td>
<td>كنت منزعجة أو متكررة من طفلي لا نادراً أو أبداً لا ليس في معظم الأحيان نعم بعض الأحيان نعم في معظم أو كل الأحيان</td>
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<td>هل الفكرة / المبدأ مفهوم؟</td>
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|         | 0 نعم 0 لا           | 0 نعم 0 لا            | 12 يقلتني شعوري أنني لست أم جيدة كسائر الأمهات لا نادراً أو أبداً لا ليس في معظم الأحيان نعم بعض الأحيان نعم في معظم أو كل الأحيان أم كونك لا شعرت بالذنب لا نادراً أو أبداً لا ليس في معظم الأحيان نعم بعض الأحيان نعم في معظم أو كل الأحيان 13 ما هي الأسباب التي جعلتك تشعرين بالإجهاد أو التعب أو عدم الاستمتاع كونك أم؟
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الرجاء اختيار الوجه الذي يعبر عن مشاعرك خلال الاسبوعين أو الثلاثة الماضية.

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<tr>
<th>1 سعيد جدا</th>
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<td>2 سعيدة</td>
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<td>3 طبيعي</td>
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مقاييس تعبير السعادة على الوجه
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<td>مقياس تعابير السعادة على الوجه</td>
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4 غير سعيدة

5 غير سعيدة جداً
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<th>هل الصيغة / اللغة سهلة وبسيطة؟</th>
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<td>نعم 0 لا 0</td>
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<td>الرجاء اختيار الوجه الذي يعبر عن مشاعرك خلال الاسبوعين أو الثلاثة الماضية.</td>
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<td>1 هادئة جدا</td>
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<td>2 هادئة</td>
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مقاييس تعابير القلق على الوجه

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<th>هل الصيغة / اللغة سهلة وبسيطة؟</th>
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مقاييس تعبير القلق على الوجه

- 4 قلق بعض الشيء
- 5 قلق جداً
Appendix 5: The Quantitative Measures

5.1 The English versions

Dear Mother,

This study is conducted by Dr Nahla Hariri, a post graduate student at the University of New South Wales, Sydney, Australia in collaboration with Umm Al-Qura University in Makkah, Saudi Arabia.

The aim of the study is to find out the ease of life for mothers with new babies and to assess the ease of access to mental health services at the primary health care level. This study will help us to improve the service for you and other Saudi women who attend the centre in the Kingdom of Saudi Arabia. Participation in this study is completely voluntary. Non-participation will not affect you or the services you receive from this centre in any way.

Please drop your completed questionnaire in the study box at reception of the primary health care centre. Please do not write your name on the form as your responses will be anonymous.

Please complete the following questionnaire, which will take about 5-10 minutes.

If you do not wish to participate in the study, you may leave now without any effect on the services you receive.

Thank you very much for your participation.
Your age: ______________
Your baby’s age: ______________
Is your Nationality Saudi? Yes¹ / No²
What is your ethnic origin (e.g., Saudi; Indian; African, etc): ______________
How many other children do you have? ______________
Mode of Delivery : (for example: Vaginal, Emergency Caesarean, Planned Caesarean, other): ______________
What is the highest level of school education you attained? (e.g., primary, intermediate, high or iliterate) ______________
Have you completed any further education? Yes¹ / No²
If Yes, what level? Diploma / College / University / other: __________
Where do you live? (e.g., parent’s house, your house, other) ______________
Do you have family or friends that give you enough practical support? Yes¹ possibly² No³
Do you have family or friends that give you enough emotional support (such as listening to you if you have worries or concerns)? Yes¹ possibly² No³
If Yes, who? ______________
Are you working? Yes¹ No²
If Yes, have you received paid maternity leave? Yes¹ No²
How long was your maternity leave? ______________

Please turn to the next page and read on.
Edinburgh Postnatal Depression Scale (EPDS)

As you have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt IN THE PAST 7 DAYS, not just how you feel today.

Here is a completed example.

** I have felt happy:
- All the time
- Most of the time
- Not very often
- Not at all

This would mean: “I have felt happy most of the time” during the past week.

Please complete the following questions in a similar way.

In the past 7 days:

1. I have been able to laugh and see the funny side of things
   - As much as I always could
   - Not quite so much now
   - Definitely not so much now
   - Not at all

2. I have looked forward with enjoyment to things
   - As much as I ever did
   - Rather less than I used to
   - Definitely less than I used to
   - Hardly at all

3. I have blamed myself unnecessarily when things went wrong
   - Most of the time
   - Some of the time
   - Not very often
   - Not at all

4. I have been anxious or worried for no good reason
   - Not at all
   - Hardly ever
   - Sometimes
   - Very often
5. I have felt scared or panicky for no very good reason
   o Quite a lot
   o Sometimes
   o Hardly ever
   o Not at all

6. Things have been getting on top of me
   o Most of the time I haven’t cope well
   o Sometimes I haven’t coped as well as usual
   o Most of the time I have coped quite well
   o I have coped as well as ever

7. I have been so unhappy that I have had difficulty sleeping
   o Most of the time
   o Sometimes
   o Not very often
   o Not at all

8. I have felt sad or miserable
   o Most of the time
   o Quite often
   o Not very often
   o Not at all

9. I have been so unhappy that I have cried
   o Most of the time
   o Quite often
   o Only occasionally
   o Not at all

10. The thought of harming myself has occurred to me
    o Quite often
    o Sometimes
    o Hardly ever
    o Not at all

Please turn to the next page and read on.
Being a Mother (BaM-13)

The items below will help us understand what you are experiencing as a mother. There are no right or wrong answers. Just answers that tell us how you have been feeling.

For each question think about how you have been feeling over the past 2–3 weeks. Please underline one statement for each item that is closest to how you have been feeling.

Over the past 2–3 weeks

1. I have felt confident about looking after my baby/toddler
   Yes, most or all of the time
   Yes, some of the time
   No, not very often
   No, rarely or never

2. I have missed the life I had before I became pregnant with this baby/toddler
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

3. I have found it hard to cope when my baby/toddler cries
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

4. I have felt close to my baby/toddler
   Yes, most or all of the time
   Yes, some of the time
   No, not very often
   No, rarely or never

5. I have felt lonely or isolated
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

Please answer items 6-13 on the other side of the page
Over the past 2 - 3 weeks

6. I have felt bored
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

7. I have felt unsupported
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

8. I have felt alright about asking people for help or advice when I needed to
   Yes, most or all of the time
   Yes, some of the time
   No, not very often
   No, rarely or never

9. I have felt nervous or uneasy around my baby/toddler
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

10. I have been worried that something would happen to my baby/toddler
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

11. I have been annoyed or irritated with my baby/toddler
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

12. I worry I am not as good as other mothers
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time

13. I have felt guilty
   No, rarely or never
   No, not very often
   Yes, some of the time
   Yes, most or all of the time
If you have found being a mother very stressful, very difficult, or unenjoyable, why do you think this is?

____________________________________________________________________
____________________________________________________________________
____________________________________
____________________________________
_______________

Please turn to the next page and read on.
How I feel Questions:

1a. In the last 2 weeks have you felt very stressed, anxious or unhappy, or found it difficult to cope for some of the time?

☐ ☐ ☐  If 'No', please stop here and turn to the next page.
Yes¹  Possibly²  No³

If 'Yes' or 'Possibly':

1b. For how much of the last 2 weeks have you felt this way?

☐ ☐ ☐ ☐ ☐
1 or 2 days¹; 3 – 5 days⁵; about half the time²; more than half the time³; other⁴

1c. How bothered are you by these feelings?

I am bothered: ☐ ☐ ☐ ☐ ☐
Not at all¹  A little bit²  Moderately³  A lot⁴

1d. What has caused you to feel this way?

___________________________________________________________

___________________________________________________________

2a. How much do you think these feelings have interfered with your ability to do things on a day-to-day basis?

They have interfered: ☐ ☐ ☐ ☐ ☐
Not at all¹  A little bit²  Moderately³  A lot⁴

Any comments or further information?

___________________________________________________________
Faces Scale (Happiness and anxiety)

1. very happy and calm
2. Happy and calm
3. So So
4. Unhappy or worried
5. Very Unhappy or worried
6. sometimes feeling happy and calm + other time feeling unhappy and worried
Thank you for completing the questionnaire. There is a second stage of this survey where we would like to interview you individually to find out more about your ease of life as a mother with a new baby and the ease of access to care at a primary health centre. We are interested in learning about your experiences in seeking help from the Primary Health Care Centre. Your responses would definitely help improve the services offered in the future by this centre.

There is a $25 Mothercare gift voucher for you if you would like to be a part of this second stage and don’t mind being interviewed.

Please note your contact number. We will call you and make a time, place and date that is convenient to you.

Please tick (√) the boxes if you wish the researcher to contact you

☐ Retest the questionnaire
☐ In-depth interview

Your contact number: ________________

On what days suit can I call you? ________________
What time do you prefer? _____________________
____________________________________________________________________

_____
الهدف من هذه الدراسة هو معرفة مدى سهولة الحياة للأمهات اللاتي لديهن أطفال رضع لتقييم سهولة الوصول إلى خدمات الرعاية الصحية الأولية. هذه الدراسة سوف تساعدنا على تحسين الخدمات للكبار ونحن نعمل على توفير أفضل من النساء السعوديات الذين يحضرون المراكز في المملكة العربية السعودية. المشاركة في الدراسة هي تطوعية تماماً. عدم المشاركة لن يؤثر بأي أثر سلبي عليك وتؤكد أن جودة الخدمات المقدمة لكي لن تتأثر مطلقاً سواء شاركتي في هذه الدراسة أو لم تشارك. الأهمية أيضاً في نوع الإجابة التي أجبتي عليها.

عند الانتهاء من تعبئة الاستبيان، الرجاء وضعها في الصندوق المغلق والخاص بالباحثة في مدخل الاستقبال للمركز الصحي. الرجاء عدم كتابة اسمك على الاستبيان لأن المعلومات سوف تكون سرية. وضمان أن الدراسة سوف تكون سرية ومن دون أسماء، سوف يكون هناك رمز لكل استبيان. كل الاستبيانات المرجعة سوف تحفظ في صندوق مغلق خلال الدراسة.

الرجاء تعبئة الاستبيان وسوف يستغرق حوالي خمس إلى عشر دقائق. الرجاء تزويد الباحثة برقم الاتصال أو أي وقت فضلاً تفضل التواصلbang. سوف يقوم بإعادة التقييم وسوف نقوم بإعطائك نسخة منه.

إذا فضلاً عدم المشاركة في الدراسة، الرجاء ترك الاستبيان من دون أي خوف.

شكراً لمشاركتك في الدراسة.
عمر: ________________________________
عمر الرضيع: ____________________________
هل جنسيتك سعودية ؟ نعم ² لا ¹
ما هو الأصل العرقي ؟ قبيلي, أسيوي, هندي, أفريقي أو غير ذلك ____________________________
عدد أطفالك: ____________________________
طريقة الولادة: (على سبيل المثال: طبيعي, ولادة قيصرية طارئة, ولادة قيصرية حسب الطلب), غير ذلك: ____________________________
ما هو أعلى مستوى تعليمي حصلتي عليه ؟ (على سبيل المثال: ابتدائي, متوسط, ثانوي): ____________________________
هل أكمنتي أي تعليم آخر ؟ نعم ² لا ¹
إذا كان الجواب بنعم, ما هو المستوى؟ دبلوم / جامعة / أخرى: ____________________________
أين تقيمين حالياً؟ (على سبيل المثال: في منزل الوالدين, في بيتك) , غير ذلك: ____________________________
هل لديك عائلة أو صديقات يقدمون لكي الدعم العملي الكافي ؟ نعم ³ محتمل ² لا ¹
هل لديك عائلة أو صديقات يقدمون لكي الدعم العاطفي الكافي, على سبيل المثال: يستمعون إليك إذا كان عندك هموم أو مخاوف ؟ نعم ³ محتمل ² لا ¹
إذا كان الجواب بنعم, من هم: ____________________________
هل لديك وظيفة ؟ نعم ² لا ¹
إذا كان الجواب بنعم, هل حصلتي على إجازة أمومة مدفوعة الأجر؟ نعم ² لا ¹
ما هي مدة إجازة الأمومة؟ ____________________________
مرجع: مقياس أدنبرة

سيدتي
الرجاء أن تضعي خطًا تحت الجواب الذي يعبر بطريقة أدق عن كيفية شعورك في الأيام السبعة الماضية، وليس عن شعورك اليوم فحسب.
إليك مثل وقد أكمل:

- لقد شعرت بانتمي سعيدة
- كلا ليس في أحوال كثيرة

وهذا يعني: لقد شعرت بانتمي سعيدة معظم الوقت خلال الأسبوع الماضي. الرجاء أن تكمل الأسئلة الأخرى بالطريقة ذاتها.

نرجو أن تضعي خطًا تحت أحد الأجوبة التالية:

1. لقد استطعت الشعور بالفرح والسعادة
   - بالمقدار نفسه الذي استطعته قبلًا
   - ليس تماما بالمقدار نفسه الآن
   - قطعا ليس بالمقدار نفسه الآن
   - كلا مطلقا

2. لقد تطلعت إلى الأمور بتفوق
   - بالمقدار نفسه مثل أي وقت مضى
   - أقل نوعا ما مما اعتدته
   - قطعا أقل مما اعتدته
   - نادرا أبدا
لقد كنت نفسي بدون لزوم عندما سارت الأمور على غير ما يرام

- نعم في معظم الأحيان
- نعم في بعض الأحيان
- ليس في أحوال كثيرة
- كلا أبدا

لقد كنت قلقة ومشغولة بالبلد دون سبب وجيه

- كلا أبدا
- نادرا
- نعم في بعض الأحيان
- نعم في أحوال كثيرة

لقد شعرت بالخوف والذعر بدون سبب وجيه

- نعم أكثر الأحيان
- نعم في بعض الأحيان
- كلا ليس كثيرا
- كلا مطلقا

تراكمت الأعمال على قلبي أمستطيع القيام بها كلها

- نعم في معظم الأحيان لم أستطيع أبدا القيام بها
- نعم في بعض الأحيان لم أستطيع القيام بها كالمعتاد
- كلا أقد استطعت القيام بها في بعض الأحيان
- كلا أقد استطعت القيام بها كالمعتاد

لقد كنت غير سعيدة لدرجة أنني كنت لدي صعوبة في النوم

- نعم في معظم الأحيان
- نعم في بعض الأحيان
- ليس كثيرا
- كلا أبدا

لقد شعرت بأنني ليست سعيدة وليست

- نعم في معظم الأحيان
- نعم أكثر الأحيان
- ليس أكثر الأحيان

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6. لقد كنت غير سعيدة وأشعر بالألم مرير لدرجة كنت أبكي
   ـ نعم في أغلب الأحيان
   ـ نعم أكثر الأحيان
   ـ فقط من وقت إلى آخر
   ـ كلا أبدا

7. لقد خطرت لي فكرة إلحاق الأذى بي
   ـ نعم في أحوال كثيرة
   ـ نعم في بعض الأحيان
   ـ نادراً
   ـ كلا مطلقا

الرجاء متابعة القراءة
البنود التالية ستساعدك على فهم ما تشعرين به كأم.
لا يوجد إجابات صحيحة أو خاطئة. فقط الأجوبة التي تختاريها و التي توضح شعورك.
قبل الإجابة على كل سؤال تذكر كيف كنت تشعرين خلال الأسبوعين أو الثلاثة أسابيع الماضية.
الرجاء وضع خط تحت العبارة التي تصف شعورك بالتحديد الذي مررت به.

### خلال الأسبوعين أو الثلاثة أسابيع الماضية:

1. شعرت بثقة وأنا أرعى طفلي
   - نعم، في معظم أو كل الأحيان
   - نعم، بعض الأحيان
   - لا ليس في معظم الأحيان
   - لا نادراً أو أبداً

2. أفتقدت حياتي التي كنت أعيشها قبل الحمل بطفلي
   - لا نادراً أو أبداً
   - لا ليس في معظم الأحيان
   - نعم بعض الأحيان
   - نعم في معظم أو كل الأحيان

3. وجدت صعوبة في التصرف عندما يبكي طفلي
   - لا نادراً أو أبداً
   - لا ليس في معظم الأحيان
   - نعم بعض الأحيان
   - نعم في معظم أو كل الأحيان

4. أشعر بالقرب من طفلي
   - لا نادراً أو أبداً
   - لا ليس في معظم الأحيان
   - نعم بعض الأحيان
   - نعم في معظم أو كل الأحيان

5. شعرت بالوحدة أو العزلة
   - لا نادراً أو أبداً
   - لا ليس في معظم الأحيان
   - نعم بعض الأحيان
   - نعم في معظم الأحيان

6. شعرت بالملل
   - لا نادراً أو أبداً
   - لا ليس في معظم الأحيان
   - نعم بعض الأحيان
   - نعم في معظم أو كل الأحيان
7 شعرت بأنني وحيدة ولا يوجد من يدعمني
لا نادرًا أو أبدا
لا ليس في معظم الأحيان
نعم بعض الأحيان
نعم في معظم أو كل الأحيان
أشعر بارتياح عندما أطلب المساعدة أو النصح من الآخرين كلما احتاج لذلك
لا نادرًا أو أبدا
لا ليس في معظم الأحيان
نعم بعض الأحيان
نعم في معظم الأحيان
لا نادرًا أو أبدا
8 أشعر بالإجهاد أو التعب أو عدم الاستمتاع كونك أم؟
لا نادرًا أو أبدا
لا ليس في معظم الأحيان
نعم بعض الأحيان
نعم في معظم الأحيان
لا نادرًا أو أبدا
9 أشعر بالاضطراب و عدم الراحة عندما يكون طفلي معي
لا نادرًا أو أبدا
لا ليس في معظم الأحيان
نعم بعض الأحيان
نعم في معظم الأحيان
لا نادرًا أو أبدا
10 كنت منزعجة أو متشنجة من طفلي
لا نادرًا أو أبدا
لا ليس في معظم الأحيان
نعم بعض الأحيان
نعم في معظم الأحيان
لا نادرًا أو أبدا
11 كنت منزعجة أو متشنجة من طفلي
لا نادرًا أو أبدا
لا ليس في معظم الأحيان
نعم بعض الأحيان
نعم في معظم الأحيان
لا نادرًا أو أبدا
12 يقلقني شعوري أنهني ليست أم جيدة كساسر الأمهات
لا نادرًا أو أبدا
لا ليس في معظم الأحيان
نعم بعض الأحيان
نعم في معظم أو كل الأحيان
13 شعرت بالنزيف
لا نادرًا أو أبدا
لا ليس في معظم الأحيان
نعم بعض الأحيان
نعم في معظم أو كل الأحيان
ما هي الأسباب التي تجعلك تشعرين بالإجهاد أو التعب أو عدم الاستمتاع كونك أم؟

الرجاء متابعة القراءة

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أسئلة كيف أشعر

1: خلال الأسبوعين الماضيين هل قد شعرتي بالتوتر، القلق، أو كنتي غير سعيدة، أو وجدت صعوبة في التكيف لبعض الوقت؟

نعم محتمل لا

لو إجابتك "لا" الرجاء التوقف هنا والذهاب إلى الصفحة التالية

إذا "نعم" أو "محتمل"

2: كيف استمرت معك هذا الشعور خلال الأسبوعين الماضيين؟

1 - 2 يوم
3 - 5 أيام
تقريبا نصف الوقت (حوالي أسبوع)
أكثر من نصف الوقت (أكثر من أسبوع)
أخرى

3: هل أزعجك هذا الشعور؟

كنت منزعجة
لا على الإطلاق
قليل
متوسط
كثير

4: ما الذي جعلك تشعرين بهذا الشعور؟

____________________________________________
____________________________________________

أ: إلى أي مدى أثرت هذه المشاعر على قدرتك للقيام بمهامك اليومية الأساسية؟

كانت لها تأثير
لا على الإطلاق
قليل
متوسط
كثير

هل لديك تعليقات أو معلومات إضافية على ما تشعرين به خلال الأسبوعين الماضيين؟

____________________________________________________________________
____________________________________________________________________
مقاييس تعابير السعادة و القلق على الوجه

الرجاء اختيار الوجه الذي يعبر عن مشاعرك خلال الأسبوعين أو الثلاثة الماضيين.

1- سعيدة و هادئة جدا

2- سعيدة و هادئة

3- طبيعي

4- غير سعيدة أو قلقا بعض الشيء

5- غير سعيدة أو قلقا جدا

6- سعيدة و هادئة بعض الوقت و غير سعيدة وقلقة أحيانا
شكرا جزيلا لتعبئة الاستبيان. يوجد هنا المرحلة الثانية من البحث حيث أننا نود مقابلتك شخصيا للتعرف عن سهولة الحياة الخاصة بك كأم مع طفلك الجديد وسهولة الوصول لمركز الرعاية الصحية الأولية. نحن مهتمون في معرفة تجاربك في طلب المساعدة من هذا المركز. إجابتك سوف تحسن من الخدمات المقدمة من هذا المركز. هناك هدية وهي عبارة عن قسيمة شراء من محلات مذكير للأطفال بقيمة 100 ريال سعودي عند المشاركة في هذه المرحلة وإجراء المقابلة ووجه لوجه.

الرجاء وضع علامة (√) إذا كنت تودين من الباحثة الاتصال:

______ إعادة الأسئلة
______ إجراء المقابلة

رقم الهاتف للاتصال: ____________________________
في أي يوم تفضلين الإتصال: ______________________________
في أي وقت تفضلين الإتصال: ______________________________

امسح إجراء المقابلة عن طريق الهاتف ° وجه لوجه ° عن طريق الهاتف ° وجه لوجه

رقم الرمز __________________
Appendix 6: The Qualitative Measures

6.1 Participant information sheet and consent form

THE UNIVERSITY OF NEW SOUTH WALES AND UMM AL-QURA UNIVERSITY
HREC No (12559)

PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM

The prevalence of postpartum distress and accessibility of primary mental health services for women in Makkah, Saudi Arabia

Background and purpose of study

This study is conducted by the School of Public Health and Community Medicine at the University of New South Wales in collaboration with Umm Al-Qura University in Saudi Arabia and the Saudi Ministry of Health.

The purpose of the study is to assess the prevalence rate of postpartum distress in Makkah, Saudi Arabia, explore social and cultural factors that influence Saudi women’s mental wellbeing during the postnatal period, identify the barriers and facilitators for access to Primary Mental Health Services and to suggest improvements to ensure culturally competent and patient-centred models of mental health services.

Description of study and risks

The study has two phases: phase 1 is a questionnaire and phase 2 involves individual interviews. You are participating in the second phase of the study which involves an interview. The interview is expected to take not more than one and half hours and will be conducted in Arabic language on a day and time convenient for you. The information you share with us is important and so we want to ensure that we accurately record what you have said. Therefore, if you agree we would audio record our discussions. If you do not wish the interview to be recorded, we will only make hand-written notes and not record the session.
Confidentiality and disclosure of information

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission except as required by law. If you give us your permission by signing this document, we plan to disseminate the findings of our research by means of publications in peer-reviewed journals, research presentations, and as component of an academic thesis. In any publication, information will be provided in such a way that you cannot be identified. A combined system of codes, numbers and pseudonyms will be set up to ensure confidentiality of your information, while allowing only the researchers to access the information.

Benefits of participation

“You may not benefit directly from this study, but if you are experiencing emotional difficulties and would like help, this can be arranged.”

Reimbursement

If you agree to participate in the interview, you will be given a gift card from Mothercare shop valued SR 100 ($25) as a token of appreciation for your participation.

Your consent

Your decision whether or not to participate will not harm your future relations with the Primary health care. If you decide to participate, you are free to withdraw your consent and participation at any time without repercussions.

Questions and complaints

If you have questions, concerns or complaints regarding your participation in this research study or if you have any questions about your rights as a research subject, you should speak with Dr Mohammed Garout at Family and community Medicine Department, UQU, Makkah, Saudi Arabia, (phone:+96626228665, Email:dr.m.garout@gmail.com).

If Dr Mohammed Garout cannot be reached you may contact the the Ethics Secretariat, The University of New South Wales, Sydney, 2052, Australia (phone: +6129385 4234, Fax +6129385 6648,Email: ethics.sec@unsw.edu.au).

You will be given a copy of this form to keep.
SUBJECT INFORMATION STATEMENT AND CONSENT FORM FOR WOMEN

You are required to decide whether or not to participate in the interview. Your signature indicates that, having read the information provided above, you have decided to participate.

**Agree to the participate**

……………………………………………            …………………………………………
Signature of subject                                                               Signature of witness

……………………………………………            …………………………………………
Please PRINT subject name                                                               Please PRINT witness name

……………………………………………            …………………………………………
Date                                                                                           Nature of witness

**Agree to the voice recording**

……………………………………………            …………………………………………
Signature of subject                                                               Signature of witness

……………………………………………            …………………………………………
Please PRINT subject name                                                               Please PRINT witness name

……………………………………………            …………………………………………
Date                                                                                           Nature of witness
الغرض من الدراسة / خلفية الدراسة:

تجري هذه الدراسة في كلية الصحة العامة وطب المجتمع في جامعة نيو ساوث ويلز الاسترالية في سدني بالتعاون مع جامعة أم القرى ووزارة الصحة السعودية.

الغرض من هذه الدراسة هو استكشاف العوامل الاجتماعية والثقافية التي تؤثر على صحة المرأة السعودية النفسية خلال فترة ما بعد الولادة. وتحديد التسهيلات والعقبات من أجل الوصول إلى الخدمات النفسية الصحية الأولية. واقتراح التحسينات لضمان خدمات صحية متناسبة ثقافيا ومحورها الرئيسي هو المريض.

اختيار المشاركين

دعوتكم للمشاركة في هذه الدراسة في التحدث عن التجارب والتصورات والتوقعات بشأن المركز الصحي عن مدى إمكانية الحصول على الخدمات النفسية الصحية الأولي.

وصف الدراسة والمخاطر: 

إذا قررت المشاركة، سيتم إجراء مقابلة شخصية للتحدث حول التصورات والتجارب الخاصة. المقابلة سوف تستغرق حوالي 30 دقيقة إلى حوالي ساعة. وسيتم تسجيل المقابلة صوتيا إذا وافقتي على ذلك.

السرية والخصوصية:

أسمك لن يتم التعرف عليه على الورق أو حتى في أداة التسجيل لضمان حماية هويتك الشخصية. إن أي معلومات يتم جمعها في هذه الدراسة ستظل سرية ولن يتم الكشف عنها لأحدها إلا للباحثين في هذه الدراسة. ومن المتوقع أن تكون نتائج الدراسة مشروحة. في حالة النشر، سيتم تقديم البيانات بدون تحديد هوية المشاركين.

إذا تم استخدام الأدوات السمعية المسجلة، سيتم إزالة أي علامات تحدد هوية الشخص ومكانه في كل من النص والصوت.

فوائد المشاركة:

لن تكون هناك فائدة مباشرة، ولكن يمكن للخدمات الصحية النفسية الأولية أن تتحسن في المستقبل.

وافقتك على المشاركة في الدراسة إذا رغبت في المشاركة في الدراسة أو عدم المشاركة فلن يضر بعلاقتك بالمركز الصحي أو الإدارة في المستقبل. إذا قررت المشاركة في الدراسة، فأنني حر في سحب مشاركتك في أي وقت دون أي عواقب.
الأسئلة والشكوى

إذا كان لديك أسئلة، مخاوف أو شكاوى بخصوص موضوع مشاركتك في هذه الدراسة البحثية أو إذا كان لديك أي أسئلة حول حقوقك كموضوع للأبحاث، يجب عليك التحدث مع الدكتور محمد قاروت في قسم الأسرة والمجتمع الطب، جامعة أم القرى، مكة المكرمة، المملكة العربية السعودية، (هاتف: +96626228665). البريد الإلكتروني: dr.m.garoout@gmail.com.


سوف تحصل على نسخة من هذه الاستمارة للاحتفاظ بها.
بيان معلومات المشاركة واستمارة الموافقة على المشاركة في الدراسة

أنت بحاجة إلى أن تقرر ما إذا ترغبي أو لا ترغبي في المشاركة في المقابلة. توقيعك يشير إلى أنك قررت المشاركة.

الموافقة على المقابلة

توقيع المشاركة  توقيع الشاهد
كتابة اسم المشاركة  كتابة اسم الشاهد
وظيفة الشاهد
التاريخ

أنت بحاجة إلى أن تقرر ما إذا ترغبي أو لا ترغبي في تسجيل المقابلة صوتياً. توقيعك يشير إلى أنه بعد قراءة المعلومات الواردة أعلاه، أنك وافقتي على التسجيل.

توقيع المشاركة  توقيع الشاهد
كتابة اسم المشاركة  كتابة اسم الشاهد
وظيفة الشاهد
التاريخ
6.2 The vignette

6.2.1 The English Version

Sister Noura a 25-year-old woman presents to her general practitioner 6 weeks after the birth of her first baby. She is finding it difficult to cope with the new baby and feels empty of all emotion. When asked, she says she has been feeling low in mood for the last 3 weeks and that it is getting worse. She has no appetite and even when the baby is sleeping, she wakes early in the morning and is unable to get back to sleep. She feels anxious and is often agitated. She lacks concentration, has reduced self-esteem, and is avoiding contact with her family and friends. On closer questioning she admits to difficulty bonding with the baby and is very concerned that she feels no strong emotion for him.

Questions:
What is the problem?
What is Noura suffering from?
What does this illness do to someone? How does it work?
What do you think caused her problem?
How serious are her problems?
Is there anything that can be done about it?
How might her problem impact on her: social, family, work, people?
Where can she get help for her problem?
Who will be able to help her? How can her family help? How can HCPs help?
What services are available in Makkah that can help her?
Do you know if PHCs offer service for women like Noura?

- What services do the PHC offer? Would women like Noura go for help to PHC? why or why not?
- How can the service be improved so that women like Noura will seek help from them?
الأخت نورا وهي امرأة تبلغ من العمر 25 سنة، قدمت إلى الطبيبة بعد 6 أسابيع من ولادة طفلها الأول. وقالت أنها تشعر صعوبة في التصرف مع المولود الجديد وتشعر أنها فارغة من العاطفة. وعندما سألتها الطبيبة، تقول أنها تشعر بهبوط نفسي منذ الثلاث الأسابيع الماضية، وأنه يزداد سوءًا. وقالت إنها ليس لديها شهية، وحتى عندما ينام الطفل، قالت إنها تستيقظ في الصباح الباكر وغير قادرة على العودة إلى النوم. وقالت إنها تشعر بالقلق وغالبًا ما تشعر أن حركتها أكثر من المعتاد. وأنها تفتقر إلى التكامل، وتشعر ببطء القلوب، وتجنب التواصل والحديث مع عائلتها وأصدقائها. وعندما سألتها الطبيبة عن قرب علاقتها بطفليها قالت أنها لا تشعر بقرب طفلها منها وتشعر بقلق بالغ بأنه ليس هناك أي عاطفة قوية بالنسبة له.

الأسئلة
ما هي المشكلة؟
من ماذا تعاني نورا؟
ماذا يعمل هذا المرض لشخص ما؟ كيف يعمل؟
ما رأيك بمشكلتها؟
ما مدى خطورة مشكلتها؟
هل هناك أي شيء يمكن القيام به حالي ذلك؟
ما هو تأثير المشكلة على حياتها: الاجتماعية، والأسرية، والعمل، وال الناس من حولها؟
كيف يمكنها الحصول على مساعدة مشكلتها؟
من هم الأشخاص القادرين على مساعدتها؟ كيف يمكن أن يساعدواها العاملين في المركز الصحي؟
ما هي الخدمات المتاحة في مكة المكرمة والتي يمكن أن تساعد نورا؟
هل تعرف إذا كانت مراكز الرعاية الصحية الأولية تقدم خدمة للنساء مثل حالة نورا؟
ما هي الخدمات التي تقدمها الرعاية الصحية الأولية؟ هل النساء مثل نورا قد ذهبوا للحصول على مساعدة من الرعاية الصحية الأولية؟ لماذا أو لماذا لا؟
كيف يمكن تحسين الخدمة حتى يتسنى للمرأة مثل نورا طلب المساعدة منها؟
6.3 PHCP Interview Guide

6.2.1 The English Version

Theme list/topic guide:

Interviews will be unstructured and in-depth. Hence in line with qualitative research using in-depth unstructured interviewing, the following theme list will be used to guide the interviews. The theme list also ensures all these topics are covered and that the same areas of information are collected from each interviewee. The topics will not be explored in the order in which they are listed. The interview will be conducted along the lines of a conversation and therefore participant responses will determine in which order the topics are explored.

- Experience /stories of providing services to women seeking help from Primary Mental Health Care Services (PMHCS).
- Perceptions of the social and cultural needs of women who seek help from PMHCS.
- Reasons why women may not seek help from PMHCS.
- How well provider is able to address the patients’ reasons for coming to centre.
- Reasons why women may seek help from PMHCS
- Problems women may encounter in seeking help from PMHCS.
- Perception of women’s level of satisfaction with the services provided by provider.
- How provider addresses women’s cultural and social needs
- Suggestions to improve health services for women.

6.2.2 The Arabic version

- من خبرتك / أو قصص عن تقديم الخدمات للنساء اللواتي يطلبن المساعدة من خدمات الرعاية الصحية النفسية الأولية
- تصورات للاحتياجات الاجتماعية والثقافية للمرأة المطلوبة المساعدة من المركز.
- الأسباب التي تجعل النساء قد لا تطلب المساعدة من خدمات الرعاية الصحية النفسية الأولية
- ما مدى قدرة المركز على توفير احتياجات المريض.
- الأسباب التي تجعل النساء تطلب المساعدة من خدمات الرعاية الصحية النفسية الأولية
- ما هي المشاكل أو الكوارث التي قد تواجه النساء في طلب المساعدة من خدمات الرعاية الصحية النفسية الأولية.
- ما هو مدى مستوى الرضا عن الخدمات المقدمة من قبل العاملين في المركز.
- كيف يوفر العاملون في المركز الاحتياجات الثقافية والاجتماعية للمرأة.
- اقتراحات لتحسين الخدمات الصحية للمرأة.
Appendix 7: Statistical analysis

7.1 Test of Normality

7.1.1 EPDS (Time 1, n=354)

7.1.2 BaM-13 (Time 1, n=354)
7.2 Order-effect analysis for MGMQ and BaM-13

Table 7.2.1: Instrument orders by MGMQ

<table>
<thead>
<tr>
<th>Instrument orders</th>
<th>Yes or possibly N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: EPDS; Faces scale; MGMQ and BaM-13</td>
<td>28(47%)</td>
</tr>
<tr>
<td>2: EPDS; MGMQ; BaM-13 and Faces scale</td>
<td>32(53%)</td>
</tr>
<tr>
<td>3: BaM-13; EPDS; Faces scale; and MGMQ</td>
<td>27(54%)</td>
</tr>
<tr>
<td>4: BaM-13; MGMQ; EPDS and Faces scale</td>
<td>25(42%)</td>
</tr>
<tr>
<td>5: Faces scale; EPDS; MGMQ and BaM-13</td>
<td>31(53%)</td>
</tr>
<tr>
<td>6: MGMQ; EPDS; Faces scale and BaM-13</td>
<td>20(36%)</td>
</tr>
</tbody>
</table>

Note: percentages rounded up/down

BaM-1

Table 7.2.1: Instrument orders by BaM-13

<table>
<thead>
<tr>
<th>Instrument orders</th>
<th>8 or more N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: EPDS; Faces scale; MGMQ and BaM-13</td>
<td>31(52%)</td>
</tr>
<tr>
<td>2: EPDS; MGMQ; BaM-13 and Faces scale</td>
<td>25(42%)</td>
</tr>
<tr>
<td>3: BaM-13; EPDS; Faces scale; and MGMQ</td>
<td>40(67%)</td>
</tr>
<tr>
<td>4: BaM-13; MGMQ; EPDS and Faces scale</td>
<td>25(42%)</td>
</tr>
<tr>
<td>5: Faces scale; EPDS; MGMQ and BaM-13</td>
<td>29(49%)</td>
</tr>
<tr>
<td>6: MGMQ; EPDS; Faces scale and BaM-13</td>
<td>17(31%)</td>
</tr>
</tbody>
</table>

Note: percentages rounded up/down
7.3 ROC of EPDS

7.3.1 ROC of EPDS compared to MINI (gold standard) for the diagnosis of Major Depression (Usual DSM Criteria and Against Probed Criteria)

Table 7.1: The sensitivity, specificity, PPV and NPV for different EPDS cutoff points compared to MINI (gold standard) for the diagnosis of Major Depression (usual DSM criteria)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Major Depression against usual DSM criteria</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>PPV</th>
<th>NPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 or more</td>
<td></td>
<td>100%</td>
<td>74.3%</td>
<td>49.4%</td>
<td>100%</td>
</tr>
<tr>
<td>4 or more</td>
<td></td>
<td>100%</td>
<td>80.9%</td>
<td>56.7%</td>
<td>100%</td>
</tr>
<tr>
<td>5 or more</td>
<td></td>
<td>96.7%</td>
<td>83%</td>
<td>58.6%</td>
<td>99%</td>
</tr>
<tr>
<td>6 or more</td>
<td></td>
<td>93.3%</td>
<td>83.5%</td>
<td>58.7%</td>
<td>98%</td>
</tr>
<tr>
<td>7 or more</td>
<td></td>
<td>83.3%</td>
<td>85.5%</td>
<td>59.0%</td>
<td>95.4%</td>
</tr>
<tr>
<td>8 or more</td>
<td></td>
<td>66.7%</td>
<td>90.8%</td>
<td>64.4%</td>
<td>91.6%</td>
</tr>
<tr>
<td>9 or more</td>
<td></td>
<td>63.3%</td>
<td>93.4%</td>
<td>70.6%</td>
<td>91.1%</td>
</tr>
<tr>
<td>10 or more</td>
<td></td>
<td>56.7%</td>
<td>94.1%</td>
<td>70.5%</td>
<td>89.7%</td>
</tr>
<tr>
<td>11 or more</td>
<td></td>
<td>53.3%</td>
<td>94.1%</td>
<td>69.2%</td>
<td>89.0%</td>
</tr>
<tr>
<td>12 or more</td>
<td></td>
<td>43.3%</td>
<td>94.1%</td>
<td>64.7%</td>
<td>86.9%</td>
</tr>
<tr>
<td>13 or more</td>
<td></td>
<td>33.3%</td>
<td>95.4%</td>
<td>64.4%</td>
<td>85.1%</td>
</tr>
</tbody>
</table>

N=185, 30 women have major depression

Table 7.2: The sensitivity, specificity, PPV and NPV for different EPDS cutoff points compared to MINI (gold standard) for the diagnosis of Major Depression (probed criteria)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Major Depression against Probed Criteria</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>PPV</th>
<th>NPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 or more</td>
<td></td>
<td>100%</td>
<td>67.7%</td>
<td>43.6%</td>
<td>100%</td>
</tr>
<tr>
<td>4 or more</td>
<td></td>
<td>100%</td>
<td>73.7%</td>
<td>48.7%</td>
<td>100%</td>
</tr>
<tr>
<td>5 or more</td>
<td></td>
<td>100%</td>
<td>76.1%</td>
<td>51.1%</td>
<td>100%</td>
</tr>
<tr>
<td>6 or more</td>
<td></td>
<td>93.3%</td>
<td>76.7%</td>
<td>50.0%</td>
<td>97.9%</td>
</tr>
<tr>
<td>7 or more</td>
<td></td>
<td>93.3%</td>
<td>80.2%</td>
<td>54.1%</td>
<td>98%</td>
</tr>
<tr>
<td>8 or more</td>
<td></td>
<td>86.7%</td>
<td>87.4%</td>
<td>63.3%</td>
<td>96.3%</td>
</tr>
<tr>
<td>9 or more</td>
<td></td>
<td>86.7%</td>
<td>90.4%</td>
<td>69.3%</td>
<td>96.4%</td>
</tr>
<tr>
<td>10 or more</td>
<td></td>
<td>73.3%</td>
<td>91.0%</td>
<td>67.1%</td>
<td>93.2%</td>
</tr>
<tr>
<td>11 or more</td>
<td></td>
<td>66.7%</td>
<td>91.0%</td>
<td>65.0%</td>
<td>91.6%</td>
</tr>
<tr>
<td>12 or more</td>
<td></td>
<td>53.3%</td>
<td>91.6%</td>
<td>61.4%</td>
<td>88.7%</td>
</tr>
<tr>
<td>13 or more</td>
<td></td>
<td>46.7%</td>
<td>94.0%</td>
<td>66.1%</td>
<td>87.6%</td>
</tr>
</tbody>
</table>

N=185, 15 women have major depression
### 7.3.2 ROC of EPDS compared to MINI (gold standard) for the diagnosis of Major Depression or Anxiety (Usual DSM Criteria and Against Probed Criteria)

Table 7.3: The sensitivity, specificity, PPV and NPV for different EPDS cutoff points compared to MINI (gold standard) for the diagnosis of Major Depression or Anxiety (usual DSM criteria)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Major Depression or Anxiety against usual DSM criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensitivity</td>
</tr>
<tr>
<td>3 or more</td>
<td>87.8%</td>
</tr>
<tr>
<td>4 or more</td>
<td>87.8%</td>
</tr>
<tr>
<td>5 or more</td>
<td>85.4%</td>
</tr>
<tr>
<td>6 or more</td>
<td>82.9%</td>
</tr>
<tr>
<td>7 or more</td>
<td>75.6%</td>
</tr>
<tr>
<td>8 or more</td>
<td>56.1%</td>
</tr>
<tr>
<td>9 or more</td>
<td>48.8%</td>
</tr>
<tr>
<td>10 or more</td>
<td>43.9%</td>
</tr>
<tr>
<td>11 or more</td>
<td>41.5%</td>
</tr>
<tr>
<td>12 or more</td>
<td>34.2%</td>
</tr>
<tr>
<td>13 or more</td>
<td>26.8%</td>
</tr>
</tbody>
</table>

N=185, 44 women depressed (major) or anxious

Table 7.4: The sensitivity, specificity, PPV and NPV for different EPDS cutoff points compared to MINI (gold standard) for the diagnosis of Major Depression or Anxiety (probed criteria)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Major Depression or Anxiety against probed criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensitivity</td>
</tr>
<tr>
<td>3 or more</td>
<td>82.8%</td>
</tr>
<tr>
<td>4 or more</td>
<td>82.8%</td>
</tr>
<tr>
<td>5 or more</td>
<td>79.3%</td>
</tr>
<tr>
<td>6 or more</td>
<td>75.9%</td>
</tr>
<tr>
<td>7 or more</td>
<td>72.4%</td>
</tr>
<tr>
<td>8 or more</td>
<td>58.6%</td>
</tr>
<tr>
<td>9 or more</td>
<td>51.7%</td>
</tr>
<tr>
<td>10 or more</td>
<td>44.8%</td>
</tr>
<tr>
<td>11 or more</td>
<td>41.4%</td>
</tr>
<tr>
<td>12 or more</td>
<td>34.5%</td>
</tr>
<tr>
<td>13 or more</td>
<td>24.1%</td>
</tr>
</tbody>
</table>

N=185, 22 women have Major Depression or Anxiety
7.3.3 ROC of EPDS compared to MINI (gold standard) for the diagnosis of Major and/or Minor Depression (Usual DSM Criteria and Against Probed Criteria)

Table 7.5: The sensitivity, specificity, PPV and NPV for different EPDS cutoff points compared to MINI (gold standard) for the diagnosis of Major and/or Minor Depression (usual DSM criteria)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>PPV</th>
<th>NPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 or more</td>
<td>94.4%</td>
<td>76.0%</td>
<td>49.6%</td>
<td>98.2%</td>
</tr>
<tr>
<td>4 or more</td>
<td>94.4%</td>
<td>82.9%</td>
<td>58.0%</td>
<td>98.4%</td>
</tr>
<tr>
<td>5 or more</td>
<td>91.7%</td>
<td>84.9%</td>
<td>60.3%</td>
<td>97.6%</td>
</tr>
<tr>
<td>6 or more</td>
<td>88.9%</td>
<td>85.6%</td>
<td>60.7%</td>
<td>96.9%</td>
</tr>
<tr>
<td>7 or more</td>
<td>80.6%</td>
<td>87.7%</td>
<td>62.0%</td>
<td>94.7%</td>
</tr>
<tr>
<td>8 or more</td>
<td>63.9%</td>
<td>92.5%</td>
<td>67.9%</td>
<td>91.1%</td>
</tr>
<tr>
<td>9 or more</td>
<td>61.1%</td>
<td>95.2%</td>
<td>76.1%</td>
<td>90.7%</td>
</tr>
<tr>
<td>10 or more</td>
<td>52.8%</td>
<td>95.2%</td>
<td>73.3%</td>
<td>89.0%</td>
</tr>
<tr>
<td>11 or more</td>
<td>50.0%</td>
<td>95.2%</td>
<td>72.3%</td>
<td>88.4%</td>
</tr>
<tr>
<td>12 or more</td>
<td>41.7%</td>
<td>95.2%</td>
<td>68.5%</td>
<td>86.7%</td>
</tr>
<tr>
<td>13 or more</td>
<td>30.6%</td>
<td>95.9%</td>
<td>65.0%</td>
<td>84.7%</td>
</tr>
</tbody>
</table>

N= 185, 30 with Major Depression, 6 with Minor Depression

Table 7.6: The sensitivity, specificity, PPV and NPV for different EPDS cutoff points compared to MINI (gold standard) for the diagnosis of Major and/or Minor Depression (probed criteria)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>PPV</th>
<th>NPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 or more</td>
<td>95.5%</td>
<td>70.0%</td>
<td>44.3%</td>
<td>98.4%</td>
</tr>
<tr>
<td>4 or more</td>
<td>95.5%</td>
<td>76.3%</td>
<td>50.1%</td>
<td>98.5%</td>
</tr>
<tr>
<td>5 or more</td>
<td>95.5%</td>
<td>78.8%</td>
<td>52.9%</td>
<td>98.6%</td>
</tr>
<tr>
<td>6 or more</td>
<td>90.9%</td>
<td>79.4%</td>
<td>52.4%</td>
<td>97.2%</td>
</tr>
<tr>
<td>7 or more</td>
<td>86.4%</td>
<td>82.5%</td>
<td>55.2%</td>
<td>96.0%</td>
</tr>
<tr>
<td>8 or more</td>
<td>77.3%</td>
<td>89.4%</td>
<td>64.5%</td>
<td>94.0%</td>
</tr>
<tr>
<td>9 or more</td>
<td>77.3%</td>
<td>92.5%</td>
<td>72.0%</td>
<td>94.2%</td>
</tr>
<tr>
<td>10 or more</td>
<td>63.6%</td>
<td>92.5%</td>
<td>68.0%</td>
<td>91.1%</td>
</tr>
<tr>
<td>11 or more</td>
<td>59.1%</td>
<td>92.5%</td>
<td>66.3%</td>
<td>90.0%</td>
</tr>
<tr>
<td>12 or more</td>
<td>50%</td>
<td>93.1%</td>
<td>64.5%</td>
<td>88.2%</td>
</tr>
<tr>
<td>13 or more</td>
<td>40.9%</td>
<td>95.0%</td>
<td>97.2%</td>
<td>86.5%</td>
</tr>
</tbody>
</table>

N= 185, 15 with major depression, 7 with minor depression
7.3.4 ROC of EPDS compared to MINI (gold standard) for the diagnosis of Major and/or Minor Depression or Anxiety (Usual DSM Criteria and Against Probed Criteria)

Table 7.7: The sensitivity, specificity, PPV and NPV for different EPDS cutoff points compared to MINI (gold standard) for the diagnosis of Major and/or Minor Depression or Anxiety (usual DSM criteria)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Major or Minor Depression or Anxiety against usual DSM criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensitivity</td>
</tr>
<tr>
<td>3 or more</td>
<td>92.6%</td>
</tr>
<tr>
<td>4 or more</td>
<td>92.8%</td>
</tr>
<tr>
<td>5 or more</td>
<td>90.5%</td>
</tr>
<tr>
<td>6 or more</td>
<td>88.1%</td>
</tr>
<tr>
<td>7 or more</td>
<td>80.9%</td>
</tr>
<tr>
<td>8 or more</td>
<td>61.9%</td>
</tr>
<tr>
<td>9 or more</td>
<td>54.8%</td>
</tr>
<tr>
<td>10 or more</td>
<td>47.6%</td>
</tr>
<tr>
<td>11 or more</td>
<td>45.2%</td>
</tr>
<tr>
<td>12 or more</td>
<td>38.1%</td>
</tr>
<tr>
<td>13 or more</td>
<td>28.6%</td>
</tr>
</tbody>
</table>

N=185, 42 women depressed or anxious

Table 7.8: The sensitivity, specificity, PPV and NPV for different EPDS cutoff points compared to MINI (gold standard) for the diagnosis of Major and/or Minor Depression or Anxiety (probed criteria)

<table>
<thead>
<tr>
<th>Cut-off score</th>
<th>Major or Minor Depression or Anxiety against Probed Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sensitivity</td>
</tr>
<tr>
<td>3 or more</td>
<td>82.9%</td>
</tr>
<tr>
<td>4 or more</td>
<td>82.9%</td>
</tr>
<tr>
<td>5 or more</td>
<td>80.0%</td>
</tr>
<tr>
<td>6 or more</td>
<td>88.1%</td>
</tr>
<tr>
<td>7 or more</td>
<td>77.1%</td>
</tr>
<tr>
<td>8 or more</td>
<td>57.1%</td>
</tr>
<tr>
<td>9 or more</td>
<td>51.4%</td>
</tr>
<tr>
<td>10 or more</td>
<td>42.9%</td>
</tr>
<tr>
<td>11 or more</td>
<td>40.0%</td>
</tr>
<tr>
<td>12 or more</td>
<td>34.3%</td>
</tr>
<tr>
<td>13 or more</td>
<td>25.7%</td>
</tr>
</tbody>
</table>

N=185, 35 women depressed or anxious
## Appendix 8: Qualitative analysis

Women characteristics

<table>
<thead>
<tr>
<th>Name</th>
<th>Participants characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asmaa</td>
<td>29 years old, married with one child and delivered normally, completed postgraduate study and working mum.</td>
</tr>
<tr>
<td>Sarah</td>
<td>23 years old, married with one child and delivered normally, completed high school and a housewife.</td>
</tr>
<tr>
<td>Nouf</td>
<td>35 years old, married with 6 children and delivered via Caesarean section, completed intermediated school and a housewife.</td>
</tr>
<tr>
<td>Reem</td>
<td>25 years old, married with 3 children and delivered via Caesarean section, completed primary school and a housewife.</td>
</tr>
<tr>
<td>Fatamah</td>
<td>25 years old, married with 2 children and delivered normally, completed intermediate school and a housewife.</td>
</tr>
<tr>
<td>Amal</td>
<td>39 years old, married with 4 children and delivered via Caesarean section, university study and working mum. Diagnosed with PND. Had previous history of PND</td>
</tr>
<tr>
<td>Ruba</td>
<td>23 years old, married with 2 children and delivered via Caesarean section, completed intermediate school and a housewife.</td>
</tr>
<tr>
<td>Zahrah</td>
<td>31 years old, married with 2 children and delivered normally, one marriage to husband with two wives, she is the second wife, completed High school and a housewife.</td>
</tr>
<tr>
<td>Susan</td>
<td>32 years old, married with 4 children and delivered normally, completed Bachelor degree and a housewife.</td>
</tr>
<tr>
<td>Najla</td>
<td>28 years old, married with 2 children and delivered normally, two marriages to two husbands, in her second marriage she is the third wife of husband has four wives, completed High school and a housewife. Diagnosed with PND. Had a previous history of depression.</td>
</tr>
<tr>
<td>Lena</td>
<td>24 years old, married with one child and delivered normally, completed Bachelor degree and a housewife.</td>
</tr>
</tbody>
</table>