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Unveiling Maternal Mental Health: Exploring the Perceptions and Practices of Mental Health Care for Pregnant and Postnatal Women in Kingdom of Saudi Arabia: A Mixed Methods Study

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Abstract

Background: Mental health during pregnancy and the postpartum period is critical yet often overlooked. In Saudi Arabia, cultural and societal norms significantly influence perceptions and practices related to mental health and these are compounded in the context of maternal mental health.

Objective: This thesis aimed to explore the knowledge, perceptions, and challenges faced by women and healthcare providers (HCPs) regarding mental health during pregnancy and postpartum in Hail, Saudi Arabia.

Methods: An embedded mixed-method design was used. Semi-structured interviews with ten pregnant and postpartum women and ten HCPs. An online cross-sectional survey was conducted with 349 HCPs to evaluate their knowledge of depression symptoms, risk factors, and treatment options.

Results: Qualitative interviews revealed four major themes: Awareness and Education on Maternal Mental Health, Stigma and Shame, Barriers to Accessibility, and Enhancing Maternal Mental Health Care. Women's misconceptions and fears of stigma led to reluctance to seek help. HCPs highlighted gaps in training and guidelines, with barriers including limited time and inadequate mental health education. Quantitative results showed insufficient knowledge among HCPs, with an average score of 8.62 out of 20 (44.86% correct). Knowledge was higher in treatment (53%) compared to assessment (45.88%) and education (35.71%) domains.

Discussion: The integrated findings reveal gaps in knowledge and perceptions of maternal mental health among both women and HCP. This study offers novel insights by combining perspectives from both groups, uncovering underexplored cultural barriers and care gaps. It highlights how cultural stigma, HCP training, and systemic issues impact Saudi women’s perinatal and postnatal experiences.

Conclusion: This thesis provides new insights into maternal mental health issues in Saudi Arabia, highlighting the need for targeted education, reduce stigma, and improved support systems. Future research should explore socio-cultural interventions to address these gaps and enhance care delivery.

Access Condition and Agreement

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List of Abbreviations

KSA / SA	Kingdom of Saudi Arabia
UK	United Kingdom
PPD	Postpartum depression
HCP	Healthcare providers
WHO	World Health Organisation
DSM-5	Diagnostic and Statistical Manual of Mental Disorders
UEA	University of East Anglia
MOH	Ministry of Health
SAMHA	Saudi Arabian Mental and Social Health Atlas
CPD	Continuous Professional Development
MCH	Maternity and Children's Hospital
EPDS	Edinburgh Postnatal Depression Scale
PHQ-9	Patient health Questionnaire
PMH	Perinatal Mental Health
NCMH	National Committee for Mental Health Promotion
MoC	Model of Care
NICE	National Institute for Health and Care Excellence
NIHR	National Institute for Health Research
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses

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Chapter 1: Introduction

1.1 INTRODUCTION

The first chapter of this thesis introduces the concept of mental health, defining both mental health and mental disorder as key terms that must be carefully delineated. This is then followed by a detailed exploration of the current situation of maternal mental healthcare in Saudi Arabia, the core concepts of major depressive disorder, and the prevalence of postpartum and antenatal depression in this country to provide the appropriate background to the study. Following this, the study's aims and objectives are provided, concluding with a summary of the content and structure of each chapter.

1.2 BACKGROUND

1.2.1 Global context of Mental Health

Mental health is known to be a priority health issue: one in every eight people in the world live with a mental disorder (WHO, 2022b). The World Health Organization (WHO) asserts that true health encompasses physical, mental, and social well-being, emphasising that there can be no overall health without good mental health because mental health influences our thinking, functioning, behaviour, and interactions, impacting all areas of life, including work and overall life satisfaction (WHO, 2022a). According to the (WHO, 2022a), mental health is defined as a "state of well-being in which an individual realises his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community". In terms of disorders related to mental health, the World Health Organization (WHO, 2022b), defines these as conditions characterised by a combination of "abnormal thoughts, perceptions, emotions, behaviours, and relationships with others".

Globally, mental health issues during pregnancy and postpartum period impact an estimated 10% of pregnant women and 13% of postpartum women in high-income settings, with 20% or more in countries with low or middle incomes. (WHO,2023). Perinatal depression, anxiety, and postpartum psychosis are among the leading causes of disability for women of reproductive age, contributing significantly to the overall burden of disease. These conditions have a significant influence on infant development, increasing the risk of preterm delivery, low birth weight, , and adverse cognitive, emotional, and behavioural outcomes (Byatt *et al.,* 2015).

Despite some progress in addressing maternal and child health, mental health remains abandoned area of focus. The Global Burden of Disease (2019) showed that mental disorders remained among the top ten leading causes of burden worldwide, with no evidence of global reduction in the burden since 1990. This persistent lack of progress suggests the importance of addressing the need for targeted interventions and integrated strategies that address mental health during this critical period of a woman's life.

Unaddressed mental illnesses constitute a significant health threat, and this is more so when looked at from an economic value since they are estimated to cost trillion dollars per year in the global economy, whereby they compromise productivity and quality of life (Patel *et al.,* 2018). Globally, these costs are compounded by disparities in access to quality mental health care, where structural barriers prevent early detection and treatment, particularly in resource-constrained settings. These barriers underscore the importance of maternal mental health in achieving the Sustainable Development Goals (SDGs), particularly those related to health and well-being. Goals like reducing under-five mortality, expanding maternal healthcare access, and integrating mental health care into primary health systems are vital steps forward. While progress has been observed 133 countries had met the SDG target for under-five mortality by 2021 significant work remains to accelerate gains in maternal and mental healthcare, especially in regions like sub-Saharan Africa (SDG,2023).

The Lancet Commission on Global Mental Health and Sustainable Development has called for greater efforts to bring scientific evidence alongside the moral case for appropriate prioritisation and investment to close three key gaps in mental health: access to care, quality of care, and prevention of mental health conditions (Patel *et al.,* 2018) . also, they called for greater efforts to integrate mental health into primary healthcare systems, particularly for vulnerable populations such as pregnant and postpartum women (The Lancet Regional Health, 2024). Such integration plays a key role in addressing maternal mental health needs effectively and equitably. Moreover, these efforts are essential in areas where social and structural risks are amplified, such as regions grappling with domestic violence, forced marriages, and polygamy, even though polygamy has become less dominant in Saudi society (Al Qurtuby, 2022; Altwaijri *et al.,* 2024; Wessells & Kostelny, 2022). For instance, a meta-analysis conducted by Rahmanian *et al.,* (2021) indicates that women in polygamous marriage had worsened mental health as compared with women in monogamous marriages. Similarly, a systematic review by Shaiful Bahari *et al.,* (2021) found that women in polygamous face a higher chance of experiencing depression than in monogamous marriages. Culturally related

factors raise the incidence of diseases, such as depression and anxiety, meaning that culturally sensitive policies and programs are needed. Addressing these cross-cutting risks will help support global health equity and address the aims of the broader set of SDGs, especially in promoting maternal mental health.

1.2.2 Overview of Saudi Arabian Mental Health Policy Priorities

The Kingdom of Saudi Arabia's (KSA) 2020 financial report illustrates that the state holds the health sector in high regard, accounting for 16.4% of the nation's budget expenditure (Al-Subaie *et al*., 2020). In addition, as with most nations globally, the current COVID-19 global pandemic has led the KSA government to hasten its health care transformation. Vision 2030 reflects the government's ambition to modernise health services provided in KSA and form an integrated healthcare sector that is patient-centred and offers high-quality care. The initiative also aims to enhance the access of free healthcare services and insurance coverage for citizens. The Health Sector Transformation Program that comprises the healthcare aspect of Vision 2030 will cooperate with all health sector organisations, Vision Realization Programs, and relevant government bodies to assist in setting newly aligned strategic national goals as set by the Kingdom's vision for 2030. It seeks to transform the existing healthcare model from one which prioritises treatment over prevention – investing significant efforts in addressing and managing diseases rather than prioritising their prevention through proactive measures – to one that is preventative in nature. In addition, it seeks to resolve the issues that arise from the current focus on resolving issues related to resources and personnel rather than addressing the needs of beneficiaries (Kingdom of Saudi Arabia Vision, 2019).

These efforts have been ongoing for some time. In 2012, the Saudi government passed the Mental and Social Health Atlas to enhance mental health services, focusing on coordinating mental care services among families, caregivers, and patients (Al-Habeeb & Qureshi, 2010). Over the past decade, there has been significant progress in policy and legislation, with notable service changes proposed (Al-Habeeb *et al*., 2016) . For instance, the Saudi government passed the Mental Health Act (MHA) in 2010, which was enacted to improve access to care and ensure optimal service provision for the population, aligning Saudi Arabia with global guidelines on mental health service development as per WHO standards (WHO, 2009). This act focused on nine core areas, including the improvement of access to general mental health care, preservation of patient rights, and the establishment of mechanisms to implement its provisions (Al-Habeeb & Qureshi, 2010). It effectively placed the 2008 mental health policy guidelines under governmental authority to streamline mental health care service delivery to families, health

consumers, and caregivers. Prior to this, the Saudi Arabian Mental and Social Health Atlas (SAMHA) was established in 2007, aiming to increase the country's ratio of psychiatric beds per population. Currently, the world average is 16 psychiatric beds for a population of 100,000, with the KSA having 12 psychiatric beds per 100,000 in 2014 (Koenig *et al*., 2014). In addition, the Ministry of Health decided to rename the Primary Psychological Clinic in primary health care centres (PHCs) to Comprehensive Guidance Clinic to attract more visitors and avoid making them feel uncomfortable with the stigma attached to terms related to mental health.

In terms of the overall history of Saudi Arabia's mental healthcare system, in 1952 it was centralised under the Ministry of Health. This time marked the establishment of the first mental health hospital, Taif Mental Hospital in Shahar, located in southwest Saudi Arabia. The government-built facility led to the decentralisation of the healthcare system. The government's priority was to increase facilities and experts across the nation. Beginning in 2006, the government instituted a mental health care policy that incorporated special programs for drug addicts, children, teenagers, and the elderly (Carlisle, 2018), 2018). The policy promoted the state's 4% devotion of the healthcare budget towards the mental illness sector, and though above the 2% world median, it was below the 6% median for developed nations (Al-Subaie *et al*., 2020).

In 2014, the government adopted certain WHO healthcare system policies to protect mental healthcare patients, such as patients and family members, by providing comprehensive information and the right of access to treatment facilities that met WHO guidelines and standards (Carlisle, 2018). The government further instituted measures in 2018 to promote the development of better training programs to increase mental healthcare practitioners' skills. They also developed a policy to integrate mental illness data with the current digital information systems in the country to enhance service delivery and patient well-being. Additionally, the government focused on upgrading healthcare facilities for mental illness patients and medical practitioners to decrease mental illness prevalence and enhance patients' access to care.

The Ministry of Health (MOH) is mandated to regulate mental health services in collaboration with other governmental and non-governmental agencies, and mental health services in KSA are primarily provided by hospitals as community-based programs remain underdeveloped. Primary care is linked to early detection of mental health issues and appropriate referral to secondary care based on the severity and complexity of the problem (Al-Habeeb *et al*., 2016). The healthcare system includes public and private sectors, with public-sector hospitals overseen by the (MOH) and, in some cases, other public-sector organisations.

Government healthcare facilities ensure medical services are provided at no cost to the entire population. Mother and child healthcare services are provided through 2,361 primary healthcare centres spread across the country, 21 specialist care hospitals, and 192 general hospitals. However, mental health services are only available in limited locations at these primary healthcare facilities. It has also been noted that mental health professionals require ongoing training to provide better-quality services (Al-Habeeb & Qureshi, 2010). To ensure an adequate number of health providers trained in mental health issues, universities in KSA currently offer undergraduate and post-graduate programs in psychology and counselling among them King Khaled University, University of Tabuk, University of Dammam, King Saud University and Princess Noura Bint-Abdulrahman university. In addition, at least 13 of the countries' medical schools offer graduate training for related health disciplines such as psychologists, nurses, counsellors and social workers (Koenig *et al.*, 2014).

The Saudi Arabian government has closely collaborated with the WHO to collect mental health data and to develop policies to reduce the prevalence of mental issues. The National Mental Health Policy was adopted in the year 2006 and included various elements such as qualifications that were required from personnel who provide mental health assistance and intervention guidelines for primary care physicians (Al-Subaie *et al*., 2020). The policy also defines mental illnesses and standards that should be maintained by mental health facilities. However, the policy fails to cover major issues regarding the provision of mental health services, including involuntary treatment, and it has been criticised for not meeting international standards.

The National Committee for Mental Health Promotion (NCMH), which aims to promote mental health in the community, is chaired by the Minister of Health. It accomplishes this by disseminating information and raising awareness about mental illnesses, their causes, and treatment options. It also promotes access to a better life by assisting individuals with mental illness and their families in obtaining curative and rehabilitation services (NCMH, 2019) . The Saudi National Survey of Mental Health has also received support from the MOH. In addition, the MOH has launched several mental health initiatives. The Comprehensive Health Counselling Initiative (Primary Mental Care Program) is one of these initiatives, which focuses on early detection of depression and anxiety among primary health centre clients to alleviate patients' suffering by providing comprehensive primary psychological services.

Although the government is now prioritising mental healthcare, it has failed to implement robust enough policies related to mental health issues because of a lack of enough

knowledge and literature (Al Nasr *et al*., 2020). In, Alzahrani's (2020) study, which examined research on depressive disorders within Gulf Cooperation Council (GCC) countries, revealed a scant and lacking national scientific depth in the literature. Although limited data exist regarding mental health issues prevalence, Al Nasr *et al*. (2020) suggest that postpartum depression is more common among women in KSA compared to other mental health conditions, with 17.8% prevalence in the Dammam region and 33.2% in Riyadh. Due to this prevalence and the Vision 2030 strategic objective of health promotion against health risks, the government requires all pregnant mothers to be screened in order to identify any potential diseases that could pose a risk to their health (Gosadi, 2019). In terms of the effectiveness of this policy, Ayoub *et al*. (2020) note that pregnant mothers' mandatory government screening helps detect the condition such as depression during pregnancy. They conclude that this allows for proper care to be accorded to them early on, helping to reduce the occurrence of maternal complications.

As noted previously, the MOH has begun developing a new healthcare system as part of the Kingdom of Saudi Arabia's Vision 2030, which aims to help people socially, mentally, and physically through a new patient-centred Model of Care (MoC) (Kingdom of Saudi Arabia Vision, 2020). The design of the MoC is intended to ensure that the care provided meets the special needs of each patient. Keep Me Well, Chronic Care, Urgent Care, Planned Care, Safe Birth, and Last Phase are the six patient-centred systems of care that make up the MoC. Mental health is included in the Chronic Care system. The Ministry of Health is also currently working on a national mental health strategy for Vision 2030, with cross-sectoral stakeholder collaboration and involvement, to ensure that it is in line with the MoC and health transformation principles of patient centricity and service integration beginning at the community level. The national strategy will attempt to close gaps in existing care systems and design services that achieve quality, accessibility, and care integration. In addition, the Saudi Ministry of Health recently formed a "National Committee for Mental Health Promotion" to assist the community. A few non-governmental organisations are also working to raise mental health awareness in the country.

1.2.3 Key Concepts of Major Depressive Disorder

The American Psychiatric Association (2013) describes depressive disorder as a mental disorder characterised by people having low moods towards those activities in which they used to have interest. Major depressive disorder is categorised as a mental illness that falls within the sub-category of a mood disorder due to its effect on one's mood. Major depressive disorders can range from mild to major depending on the severity of the symptoms and the stage in life

during which they occur. Doraiswamy *et al*. (2020) explain that occurrences of depressive disorders before and after delivery of a child, also known as perinatal mental illness, are categorised into two specific mental illnesses: antepartum and postpartum. Doraiswamy *et al*. (2020) define perinatal mental illness as those disorders that occur before and up to one year after childbirth, and antepartum mental illness as those that patients develop during pregnancy or as a pre-existing condition that went undiagnosed before the pregnancy. Among these depressive disorders, antepartum are considered the most common in mothers. Low self-esteem, increased anxiety, changes in sleeping patterns, low libido, fatigue and poor foetal attachment are among the common symptoms (Martin, 2012).

Diagnostics criteria for depression

The DSM-5 is the most widely used framework for the diagnosis of mental health disorders. To diagnose depression, the framework requires that the individual be exhibiting/experiencing five or more symptoms within the same two-week period in addition to at least one symptom being loss of interest or a depressed mood (American Psychiatric Association (2013).

The diagnostic criteria for depression are as follows:

- Depressed mood most of the day, felt nearly each day.
- A significantly reduced interest in all or almost all activities for most of the day, occurring close to every day.
- Marked weight loss/weight gain despite not dieting and an increase/decrease in individual appetite on an almost daily basis.
- Slow-down of thoughts and reduced physical movement that is identifiable by others.
- Loss of energy/fatigue occurring nearly every day.
- Feelings of inappropriate guilt/worthlessness nearly every day.
- Reduced ability to concentrate/think and increased indecisiveness nearly every day.
- Recurrent thoughts of death, suicidal ideation/suicide attempts.

For an individual to be diagnosed with depression, these symptoms should not result from another medical condition or substance abuse. They should also cause clinically significant impairment in the individual's normal functioning, should not be better explained by other schizoaffective disorders, and the individual should have no history of manic/hypomanic episodes (American Psychiatric Association, 2013).

1.2.4 Mental Health Depression Prevalence in Perinatal and Postnatal Periods in KSA

The availability of mental health data is critical for understanding the prevalence of mental health disorders and guiding public health policies. In Saudi Arabia, mental health data has been insufficient, which has limited efforts to develop effective, evidence-based strategies. The Saudi National Mental Health Survey (SNMHS), launched as part of the World Mental Health Surveys initiative, represents a landmark effort to address this gap. SNMHS is the first population-based epidemiological survey of mental disorders ever undertaken in the KSA. In addition to determining the prevalence and unmet demand for mental health treatment, the survey will produce information on mental health risk and protective variables as well as modifiable treatment-related obstacles that can inform intervention design (Al-Habeeb *et al.,* 2020; Shahab *et al.,* 2017).

The Saudi National Mental Health Survey (SNMHS) is the first comprehensive scientific survey examining the prevalence and correlates of common mental disorders within the (KSA). Conducted between 2011 and 2016, the SNMHS is a cross-sectional, community-based psychiatric epidemiological survey that targeted a nationally representative sample of Saudi citizens aged 15 to 65. The SNMHS used the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI) version 3.0 (Kessler & Üstün, 2004), a fully structured lay administered interview that generates diagnoses according to the criteria of both the International Classification of Disease 10th Revision (ICD-10) and Diagnostic and Statistical Manual of Mental Disorders 4th Edition (DSM-IV) diagnostic system.

According to the survey depression was the third most common mental health condition in KSA across one's lifetime, affecting about 6% of the population, but there was variation by geographic area (SNMHS, 2016). For instance, the rate of depression was higher among people living in urban areas such as Riyadh than those in rural areas because of differences in healthcare amenities and cultural practices. Through the conductions being armed epidemiologically, the SNMHS has given policymakers essential knowledge of where mental health matters deserve much attention, what kind of interventions are needed in different regions, and how those strategies are aligned with global mental health goals (BinDhim *et al.,* 2021). In a related study, Hanach *et al.* (2023) also found nearly the same prevalence rate of women in the postpartum period in the United Arab Emirates and were able to identify risk factor such as poor social support and financial difficulties in the United Arab Emirates as well.

Within this, perinatal and postnatal mental health depression are common and serious conditions that adversely affect the health and well-being of women, infants, and children.

Unfortunately, there are a small number of studies that discuss the prevalence and risk factors for these specific populations. Existing research on perinatal and postnatal mental health issues in Saudi Arabia has primarily concentrated on specific populations and involved limited sample sizes. In addition, there are no comprehensive national statistics available for perinatal and postnatal depression in Saudi Arabia. Of those that have been conducted on this population, previous studies have indicated varying prevalence rates of perinatal and PPD within the Kingdom, Table 1.1 shows the prevalence of depression:

Table 1.1 *Prevalence of Perinatal and Postpartum Depression in KSA*

PPD %	Author	Perinatal Depression %	Author
17.8%	Alasoom and Koura (2014)	57.5%	Bawahab, Alahmadi and Ibrahim (2017)
33.2%	Alharbi and Abdulghani (2014)	26.8%	Alqahtani *et al.* (2018)
14%	Al-Modayfer *et al.* (2015)	31.9%	Al-Hejji *et al.* (2019)
25.7%	Almutair *et al.* (2017)	37.5%	Khouj *et al.* (2022)
23%	Amara, Alshereif and Kharabah (2021)	2.5%	Alturaymi *et al.* (2024)
59.68%	Almuqbil *et al.* (2022)		
74%	Zedan *et al.* (2023)		
75.7%	Abdelmola *et al.* (2023)		
75%	Baattaiah *et al.* (2023)		

The high prevalence rates of PPD reported in more recent studies, such as Zedan *et al*. (2023) at 74%, Abdelmola *et al*. (2023) at 75.7%, and Baattaiah *et al*. (2023) at 75%, could be partially due to the extraordinary circumstances of the COVID-19 pandemic, as these studies were conducted during the height of the pandemic between 2021 and 2022. These findings align with the critical findings of Papworth *et al*. (2021), who found that 90% of mothers who had recently given birth felt isolated due to COVID-19 restrictions. This isolation and the associated stress may have exacerbated mental health issues, contributing to the higher reported prevalence of PPD in recent studies. However, these prevalence rates for PPD are higher than the global average. Furthermore, the actual prevalence of PPD in KSA may exceed reported rates because many women in the KSA feel uncomfortable with psychiatric healthcare settings and sharing psychological symptoms with non-family members (Alamoudi *et al*., 2017).

Using depression as an index of reflected maternal mental health in this study is informed by the high incidence, depth of effects on maternal and child health and differential sociocultural context. The most common mental health disorders diagnosed among Saudi women are depression and anxiety, especially in the perinatal and postnatal period. Studies have shown that these rates increased among pregnant and postnatal women during the COVID-19

pandemic (Zedan *et al.,* 2023; Baattaiah *et al.,* 2023). This prevalence makes depression a global and current sensitive public health problem. Therefore, The health of both the mother and the child is directly and quantifiably impacted by maternal depression, especially when it comes to the quality of mother-infant interactions. Given that maternal depression can impair the mother's capacity to give responsive and caring care, these interactions are essential for the child's developmental outcomes. Research suggests that maternal depression is linked to developmental delays in children's social, emotional, and cognitive domains (Rohanachandra, 2021; Urizar & Muñoz, 2022). Women may experience anxiety or trauma that leads to depression or as a secondary effect of these conditions. However, depression has been associated with poor functionality and disability among females of childbearing age (Zhou *et al*., 2023). This has placed its contribution to maternal morbidity and mortality as a significant reason for its focus in this study. The sociocultural environment in the Kingdom of Saudi Arabia, the societal perceptions of mental health issues, traditional roles narratives, and medical motherhood related systemic barriers perpetuate or worsen the problem of maternal depression. Although anxiety and trauma are also relevant and shared features, depression's omnipresence and its related sociocultural factors are the most appropriate targets for this study. Focusing on depression in this study means the research offers a broad framework for assessing maternal mental health issues and insights needed to rectify healthcare inequalities and improve results. The focus is synchronous with the Saudi Arabia Vision 2030 and Sustainable Development Goal 3, which highlights parental mental health to enhance maternal and child health outcomes, including reducing maternal morbidity, improving child developmental milestones, and promoting overall family well-being.

Prevalence of Birth in Saudi Arabia

Understanding the context of maternal health in Saudi Arabia is critical for emphasising the need of addressing mother mental health concerns. Saudi Arabia has a birth rate of about 16.92 per 1,000 inhabitants, with substantial fluctuation between areas (World Bank, 2022). The number of births in Hail City in 2023 was 9,110, out of a total of 232,603 births across Saudi Arabia, with a total fertility rate of 1.9% (Saudi Statistics,2023). Moreover, the natural birth rate in the Kingdom was 71.4%, compared to 28.1% for caesarean births, somewhat higher than the World Health Organization's recommended threshold of 15% (Ahmed & Mohammad, 2018; General Authority for Statistics, 2024). Maternal age at first birth on average presently approximately 21 years. On average, Saudi women have 2.8 fertility rates, with greater fertility

rates found in rural regions than in metropolitan settings (General Authority for Statistics, 2022).

1.2.5 Provision of Maternal Healthcare in Perinatal and Postnatal Periods for Women in Saudi Arabia

Developed nations have well-established infrastructure and conditions that support their healthcare systems in the effective prevention and provision of quality care among women with postpartum conditions. Apart from infrastructure, developed nations also tend to have enacted policies that meet WHO standards in terms of hospital facilities and robust training for professional staff (Carlisle, 2018). For this reason, Saleh *et al*. (2020) indicate that KSA does in fact have the ability to provide quality pre and postnatal care for mothers to reduce the prevalence of the disorders among women. To this end, the government has instituted policy regulations that promote the better provision of quality healthcare for all mothers before and after childbirth, promoting postpartum complications' reduction through mandatory check-ups during pre and postnatal care (Carlisle, 2018). For example, the National Mental Health Policy provides a framework for mental health interventions which include specialty programs for patients suffering from drug and alcohol addiction, as well as programs for children, adolescents, and the elderly, and consultation and liaison services in general medical settings.

That said, data from a study by Saleh *et al*. (2020) illustrate that a significant proportion of KSA nurses and midwives were not aware of the medical skills required to provide skilled care for the mothers (Saleh *et al*., 2020). In relation to the mothers, the application of quality improvement is a key gap among KSA caregivers, making it difficult to impart knowledge to the mothers on crucial care aspects such as recognising neonatal danger signs that comprise fever, difficulty breathing and hypothermia in new-borns and young infants. As with the caregivers, a majority of mothers in the aforementioned study were not aware of the measures they should take to prevent the negative effects of mental health problems. The researchers noted that disparities exist between midwives and nurses, with nurses representing a higher ratio of those who possess the right skills to care for mental health issues. Besides this, the data show that the caregivers and mothers do not possess the necessary knowledge to detect mental health issues (Saleh *et al*., 2020).

1.2.6 Structure of Antenatal Care in Saudi Arabia

At the global level, agencies such as the United Nations Population Fund (UNFP) and the WHO emphasise the improvement of maternal health through the provision of care during pregnancy, in childbirth and during the postpartum period to save the lives of women. More

specifically, the WHO recommends that each woman attend at least four antenatal care visits for a low-risk pregnancy, with the number expected to be higher for women with higher risk pregnancies.

The antenatal care (ANC) model by the World Health Organization has been adopted by most developed countries and is increasingly adopted by developing countries with slight modifications (Al-Habeeb & Qureshi, 2010). The WHO outlines key elements of ANC visits-assessment (examination of history and laboratory tests), health promotion, and the provision of care. In a study on the quality of antenatal care in Saudi Arabia, Habib *et al*. (2011) established that ANC services provided at primary health care centres within Medina city were poorly implemented, with characteristics such as long waiting times, irregular visits, and poor feedback to the visiting women. This was attributed to the limited number of antenatal physicians at the centres, a lack of commitment by the pregnant women in attending all appointments, and a lack of time for comprehensive feedback owing to the limited number of trained physicians.

Adding to these findings, in 2016, KSA's MOH reported that only 23 percent of women attended the recommended four antenatal appointments within the primary health care centres within Jeddah Department of Public Health (MOH, 2016). This is over two times lower than the 65 percent international rate reported by the United Nations Children's Fund (UNICEF, 2018), pointing to an underuse of antenatal clinics within Saudi Arabia. In a recent population-based multicentre study by Alqifari (2024) in Saudi Arabia, it was revealed that 4.55% of participants initiated antenatal care (ANC) within the first eight weeks of pregnancy, with 85.44% starting later. Overall, a significant majority of 88.78% received prenatal care during pregnancy, regardless of the timing of the ANC initiation.

In another study on the uptake of antenatal care within Saudi Arabia, Alanazy and Brown (2020) reported a prevalence in missed antenatal appointments by women within Saudi Arabia. In the study, a number of factors were identified, including poor clinic facilities and attending care not being associated with maternal education or literacy. They also found that mothers with a lower level of literacy were more likely to delay care. In a study by Alanazy *et al*. (2019), who conducted a qualitative study on Saudi women attending antenatal care appointments, results showed that women believed antenatal care was important for maternal and infant health, but there were several barriers to them attending. These barriers included physical obstacles (e.g., lack of transport), low maternal education, and inadequate healthcare facilities (including negative staff attitudes and poor communication).

1.2.7 Prenatal Mental Health Issues

The diagnosis of antenatal depression is challenging since the physiological signs of pregnancy tend to overlap with the exhibited symptoms of prenatal depression (Doraiswamy *et al*., 2020). However, in study of Moawed *et al*. (2015) in KSA, the prevalence rates of antenatal depression in mild, severe and extreme cases were 18.6%, 11.7% and 6.6% respectively. In addition, Bawahab *et al*. (2017) reported a 57.5%, more than half of the participants had depression in the Western of Saudi Arabia. They also noted that the greatest risk factor for major depression during pregnancy was a history of depression before pregnancy.

In terms of the issues that are common for pregnant women that contribute to PPD, pregnancy-specific stress, anxiety and depression may occur as a result of the woman worrying about the pregnancy, delivery and physical changes, in addition to other stressful factors within their life. The lack of psychosocial support is also identified as a causative factor in increasing pregnant women's stress. The changes that occur to a woman in pregnancy result in an increase in the woman's vulnerability to anxiety, stress and depression which in turn can affect the wellbeing of both the mother and the unborn baby. Unrelieved stress and mental issues within pregnant women can also increase the woman's vulnerability to emotional and physical problems such as fatigue, insomnia, heart problems and the development of ulcers (Martin, 2012).

There is limited diagnostic data in the Middle East to effectively assess the country's prevalence of antenatal mental health issues. However, studies have identified that the Middle Eastern region reports a globally lower-than-average proportion of suicide-attributable pregnancy-related deaths and a globally higher than average proportion of pregnancy-related deaths that are attributed to general injuries such as falls, poisoning, burns and drowning (Doraiswamy *et al*., 2020). The discrepancy raises insights regarding the region's underreporting of suicides, with Doraiswamy *et al*. (2020) concluding that this was likely caused by the prevailing stigma towards mental illness and suicide. A recent study on antenatal depression among pregnant women in Saudi Arabia found a 26.8% prevalence of depression during pregnancy (Alqahtani *et al*., 2018). The authors attributed the high prevalence to the myriad of psychological changes that occur during pre (Ghubash & Abou-Saleh, 1997) gnancy and somatic manifestations, such as anxiety, that are a normal physiological change arising from pregnancy. Bawahab *et al*. (2017) found a surprising 57.5% prevalence of antepartum depression among pregnant women within Jeddah, Saudi Arabia, with the main contributor reported as the thoughts of harming oneself. This is further supported by the findings in

Alqahtani *et al*. (2018), with 26.8% antenatal depression, the most significant factors being the number of daughters, a previous diagnosis of depression, and financial problems. Findings related to the preference for male children over female children are widely observed in some cultures, such as in Saudi Arabia. In another related study by Bawahab *et al*. (2017), it was found that the number of daughters was a significant predictor of antenatal depression. Similarly, a study by Shidhaye *et al*. (2017) in rural Maharashtra, India, assessed the association between a preference for male children and antenatal depression, concluding that the desire for a male child was strongly associated with antenatal depression.

1.2.8 Postnatal Mental Health Issues

It has been recognised that women are most likely to develop mental health problems in the period during and after pregnancy as a result of the demanding physical, biological, emotional and social changes that occur during pregnancy (Jordan *et al*., 2018). At the basic level, postnatal mental issues are commonly termed "puerperal psychosis", "maternity blues" and "postnatal depression". However, the spectrum of mental health issues during the postnatal period is wide, characterised by emotions such as irritability, transient mood lability, delusions, weepiness, delirium, marked agitation and confusion (Rai *et al*., 2015). Postnatal mental issues, when left untreated, can have wide-ranging negative effects on the family with a particular emphasis on the mother-infant attachment and interaction. To compound the issues, postpartum depression's impact on mother-infant bonding can affect the infant's development, further adding on to the mother's feelings of guilt and shame (Al-Modayfer *et al*., 2015).

The prevalence of pregnancy related mental issues is considered higher within low and middle income countries, with an average of 15.6 percent prenatal and 19.8 percent during the postnatal stage (Ayoub *et al*., 2020). This is largely associated with risk factors such as unplanned/unwanted pregnancy, low socioeconomic status, poor partner/family relationships, experiences of partner violence, lack of partner support/practical help, and being unmarried (Fisher *et al*., 2012). In a recent study on postnatal depression in Saudi Arabia, Al Nasr *et al*. (2020) reported a 38.5% prevalence, with the main determinants identified as an unsupportive spouse and recent stressful life events. Alasoom and Koura (2014) support the finding that an unsupportive spouse is a prevalent cause of postnatal depression, with pregnant women developing negative feelings as a result of the lack of support in their study. In addition, they identified a pregnant woman's history of depression or other mental disorders, a family history of depression, and an unwanted pregnancy as further causes of postnatal mental issues. Abou-Saleh and Ghubash (1997); Ghubash and Abou-Saleh (1997) studies was supportive of the high

point of early postpartum psychiatric morbidity that was characteristic of Arab women, more so due to cultural issues affecting Arab mothers' mental health. Significant sources of stress that the authors pointed out were social norms and expectations, family and cultural roles as well as gender roles as some of the determinants of maternal mental issues. Similarly, a study conducted in the United Arab Emirates found that the prevalence of depressive disorders was higher than the global average, with 35% of women experiencing depressive symptoms within the first six months postpartum (Hanach *et al.,* 2023). Anothr study by Hanach *et al.* (2024) emphasised the critical need to account for the unique cultural and societal factors influencing maternal mental health in Arab countries. The findings underscore how these contextual elements shape maternal mental health experiences in the region.

1.2.9 Social View of Motherhood in Saudi Arabia

Professional views on motherhood

Female labour force participation is especially low within Saudi Arabia, with only about 15% of the female population aged fifteen years and above employed in 2017 (Bank, 2021). Significant evidence points to social norms as a key contributor to this low labour force participation, including the emphasis for women to practice domestic roles such as being mothers to their children and their family. In the case of working mothers, there is a reported late initiation of care within pregnancy and minimal antenatal care visits. This population was also reported to experience a greater prevalence of preterm deliveries, more caesarean sections, and lower birth weight infants as a result of the unfavourable working conditions that do not allow enough time for personal care (El-Gilany *et al*., 2008). In addition, Chatterji and Markowitz (2012) found that for mothers who worked prior to childbirth and returned to work within the first year, having less than 12 weeks of maternal leave and less than eight weeks of paid maternal leave were both associated with increased depressive symptoms. Additionally, having less than eight weeks of paid leave was associated with a reduction in overall health status: in Saudi Arabia, paid maternal leave is set at 10 weeks.

In addition to institutional barriers to motherhood for working women, Aarntzen *et al*. (2023) reported that working women identified feelings of guilt, family adjustment problems and discrimination within the workplace as factors that influence their roles. Moreover, in a study by Alahmadi *et al*. (2023), it was found that balancing personal and professional obligations was a challenging task for all physicians. However, for Saudi female physicians, this challenge is exacerbated by their additional domestic responsibilities, which make achieving a work-life balance even more difficult.

Women's views on motherhood

Harper (2007), in a literary geography of the country of Saudi Arabia, reported a collision between modernisation efforts and traditional customs within Saudi society, spurring discussions on gender inequalities and women's rights, which in turn resulted in an increased ability for females to gain employment opportunities. However, Shiva (2013) study notes that mothers face significant problems in finding a balance between their work and family. The researcher administered questionnaires to working women, who reported that the ability to access employment opportunities enhanced conflicts in terms of whether they would be able to effectively take care of their family and manage their jobs. In addition, Brown and Watson (2010), in a review on the impact of recent Saudi social changes on the perceptions of women regarding their societal roles, reported that women still consider themselves responsible what they perceived as a mother's duties such as taking care of the household chores and the children. These findings are echoed in other studies (Al-bakr et al., 2017; Berkove, 1979). However, there was a recognition among the participants in the former study that it is possible to be a mother while balancing the role with other functions such as being in employment.

Societal (cultural) view on motherhood

The family is considered the most significant social institution within KSA as it is the primary basis of status and identity for the individual. The Saudi Arabian culture is collectivist, with the society prioritising the needs, attitudes and values of the family over that of their own (Harper, 2007). In Saudi traditions, the main source of income for the family is identified as the man or father. Moreover, the number of children is largely influenced by the husband and the husband's family, with a significant correlation between the husband's financial status and the number of children. Generally speaking, there is a social preference for a male child because men want sons that can carry forth their family names and lineage (Hamadeh *et al*., 2008). It is also strongly preferred that a woman becomes pregnant shortly after marriage, with contraception only socially acceptable after having the first child for the purpose of spacing the children. These traditions and trends are changing across the generations but still exist (Green & Smith, 2007).

Traditional beliefs and practices persist within the Saudi society regarding pregnancy and motherhood. To begin with, it is considered social unacceptable for unmarried women to seek medical advice on information regarding pregnancy. Even the newly married are not expected to seek medical assistance until they are pregnant, with most waiting until the end of the first

trimester to announce their pregnancy or seek medical help as a result of the perception of early news evoking an evil eye (Kridli *et al*., 2013).

The community also has a negative attitude towards mental health issues as members of Saudi society associate mental health issues with negative personality traits, weakness and defects. In Saudi Arabia, the deep social stigma surrounding mental health issues significantly impacts individuals' help-seeking behaviour (Amri & Bemak, 2013; Jelaidan *et al*., 2018). Most citizens in the Kingdom of Saudi Arabia have also not been fully educated on the risk factors and other issues related to mental health, and this has resulted in excessive stigma against people suffering from mental health issues (Abolfotouh *et al*., 2019). In addition, it has been suggested that women are the biggest victims of this stigma due to their fear of being perceived as weak (Alattar *et al*., 2021). Therefore, women who experience mental health complications before or immediately after childbirth are often reluctant to seek assistance from professionals due to shame and feelings of guilty. Compounding this issue is that fact that there are limited community-based organisations that educate pregnant women on mental health or educate family members on the need to support women suffering from mental illnesses. Indeed, the stigmatisation against women suffering from mental health illnesses has been a major impediment in providing medical and emotional assistance to the women (Ahad *et al*., 2023).

Social capital, which is the sum of actual or potential resources available to an individual through his network of relationships and interactions within a given society, is a very important feature of maternal mental health. Building on this, Qutteina *et al.* (2018) go further to further explain how one of the sub-domains in social capital, namely social support, helped to lower the level of perinatal mental health difficulties among Arab women. They emphasise that adequate family relationships and contacts, opportunities to obtain emotional and practical support play a critical role in prevention of stress and improvement of maternal health.

Very few pregnant women consider the option of undergoing screening for other diseases and conditions. To highlight this issue, Kridli (2002) reveals that most Arab Muslim women perceive the lack of visible signs and symptoms of any conditions as an indicator of good health, hindering the early detection of other underlying conditions. Interestingly, family members were found to play a significant role on women's practices, beliefs and perceptions regarding motherhood. Traditional concepts on what to do and think about pregnancy and motherhood are passed on and reinforced by the mother-in-law, the mother, friends and other relatives. Furthermore, Lamadah (2013) reported a significant difference between the perceptions of younger and older Saudi women regarding motherhood. Specifically, older

women have deeply rooted traditional beliefs regarding pregnancy and their responsibility as mothers while younger women have lesser information and are influenced by education and modern evidence-based practices. This has, in turn, contributed towards the rejection of harmful traditional practices associated with motherhood such as the belief that colostrum in breast milk is dirty and that breastfeeding increases the sizes of breasts and weight gain (Joshi *et al*., 2012; Oommen *et al*., 2009). Research indicates a link between stigma, stereotyping, cultural barriers to healthcare, and sub-optimal patient outcomes, resulting in fewer individuals seeking medical assistance. However, this relationship has not been thoroughly examined within the Saudi context (Abdullah & Brown, 2011; Alattar *et al*., 2021; Ciftci *et al*., 2013; Fekih-Romdhane, Daher-Nashif, *et al*., 2023; Jelaidan *et al*., 2018).

1.3 RESEARCHER ENGAGEMENT WITH THE TOPIC

I work as a lecturer in the Mother and Child Health Care department at the University of Hail and as an instructor in the antenatal department at the Hail District Maternity Hospital. Through my professional experiences, I have developed a strong interest and commitment to maternal and child health care. My role involves teaching, mentoring students, and working directly with mothers and children, allowing me to witness the challenges and gaps in maternal mental health services in Saudi Arabia.

My personal experiences have also powered my passion for this field. When I was three weeks' postpartum after the birth of my first son, I travelled to Australia to pursue an MSc in Nursing. The differences between the services I received as a postpartum woman in Australia and those available in Saudi Arabia were startling. In Australia, I received comprehensive education, assistance from healthcare providers for various difficulties related to pregnancy and postpartum care, and extensive child health services. This experience highlighted the significant differences in healthcare delivery and the critical need for improved maternal mental health services in Saudi Arabia. For my other two children, whom I had delivered in Saudi Arabia after returning from Australia, the maternal health care services still lacked consistent guidelines, and care for maternal mental health was almost absent.

These observations underscore the importance of increasing community awareness regarding maternal mental health care among perinatal and postnatal women. My exposure to the advanced maternal healthcare practices in Australia has reinforced my dedication to enhancing maternal mental health knowledge and services in my home country. I am passionate about the impact of maternal mental health on the well-being of mothers, babies, and the broader

community. This research is a step towards bridging the gap in maternal mental health care in Saudi Arabia, aiming to provide better support and resources for mothers and their families.

In conclusion, both my professional and personal experiences have equipped me with a unique perspective on the importance of maternal mental health. For this reason, I am committed to using this research to advocate for improved mental health services, education, and support for mothers in Saudi Arabia, ultimately contributing to the well-being of families and the progress of our nation.

1.4 SIGNIFICANCE OF THE STUDY

Understanding and exploring maternal mental health knowledge and perceptions from various perspectives within the Saudi context is crucial for developing effective interventions to reduce maternal mental health issues and increase access to effective care. Understanding the views and knowledge that the society holds will enhance the development of interventions that best fit the unique culture of Saudi Arabia. Most studies of a similar nature have focused on the prevalence and risk factors of maternal mental health problems, resulting in a lack of community knowledge and information to address these issues. However, there is still limited understanding of how pregnant and postnatal women, as well as HCPs, perceive these issues. It is thus essential to identify and address these perceptions to effectively recognise and solve maternal mental health problems in KSA.

Despite research having been conducted regarding maternal mental health in a Saudi context, no study has explored the perception of maternal mental health issues from various perspectives in Hail city, located in the northwest of Saudi Arabia, where this study is based. Understanding these perceptions is crucial to understanding gaps that exist for addressing maternal mental health effectively. Existing research suggests that engaging the local community and healthcare providers conducted research can build more suitable social interventions tailored to the specific needs of the community and develop psychiatric services for identified special populations (Al-Habeeb *et al*., 2016). Given the worldwide emphasis on the negative impacts of poor maternal mental health on mother and child, this study is timely (WHO, 2020). Moreover, the “Vision of the Kingdom of Saudi Arabia 2030” is aimed at making significant improvements to the country, including in terms of healthcare. This overarching policy piece divides KSA into regions, each responsible for their own healthcare services, and so findings related to the Hail region will have definite impacts in terms of actionable recommendations (Kingdom of Saudi Arabia Vision, 2021). Of particular interest for this study is the exploration and identification of maternal mental health gaps to develop

suitable interventions. To the best of this researcher's knowledge, this study is one of the first to explore perceptions, practice and factors influencing maternal mental health in KSA from women's and health professionals' perspectives. Addressing these issues in a timely manner can aid in the effective provision of the necessary support and resources to improve maternal and child health outcomes in the region.

1.5 RESEARCH AIM AND OBJECTIVES

The aims of this research are to understand the perceptions and awareness/knowledge of pregnant and postnatal women, as well as HCPs in Saudi Arabia, regarding maternal mental health issues. This exploration will help build towards the subsequent aim of determining the best-fit interventions that suit the specific cultural context of Saudi Arabia. More broadly, the findings will be relevant for services, policymakers, and organisations within culturally and developmentally similar environments.

To achieve the primary aim, the following objectives have been identified to answer the overarching question of this study: How is mental health care perceived, understood, and experienced during pregnancy and the postnatal period in KSA?

- Carry out two literature reviews as a first step. These literature reviews aimed to:
    - Explore global awareness, knowledge, and perceptions of maternal mental health among pregnant and postpartum women, with a focus on studies conducted in Saudi Arabia. This review also identified potential barriers to understanding maternal mental health from the perspectives of these women, as well as any relevant policies or facilities.
    - Explore the knowledge and perceptions of HCPs regarding perinatal mental health (PMH) worldwide, and identify any studies conducted in in Saudi Arabia. This review focused on identifying barriers that hinder the effective provision of PMH services.
- Following the literature reviews, semi-structured interviews were conducted to:
    - Assess the current state of knowledge regarding maternal mental health among pregnant and postnatal women and HCPs in Saudi Arabia.
    - Explore the attitudes, beliefs, and behaviours of Saudi women and HCPs towards maternal mental health issues.
    - Evaluate Saudi women's and HCPs' perceptions of maternal mental health services and providers in Saudi Arabia.

- Identify barriers and facilitators in maternal mental health care during pregnancy and the postnatal period from the perspectives of Saudi women and HCPs.
- Investigate factors influencing the accessibility and utilisation of mental health care services in Saudi Arabia.

- The findings from qualitative and the quantitative studies were analysed, and these were integrated into a comprehensive understanding of maternal mental healthcare in Saudi Arabia, with particular emphasis on the barriers and culturally specific issues that hinder knowledge of maternal mental health.
- Based on this analysis, tailored recommendations for effective maternal mental health interventions in the Saudi context were developed.

1.6 STUDY OVERVIEW

A mixed methods approach with an embedded design was utilised to address the aims of this research project. This research consisted of two main Phases, each addressing different aims of the study. Phase 1 involved the undertaking of semi-structured interviews with peri/postnatal women and HCPs. Phase 2 comprised an online questionnaire that measured the level of HCP knowledge regarding maternal depression. Figure 1.1 illustrates the flow of the project.

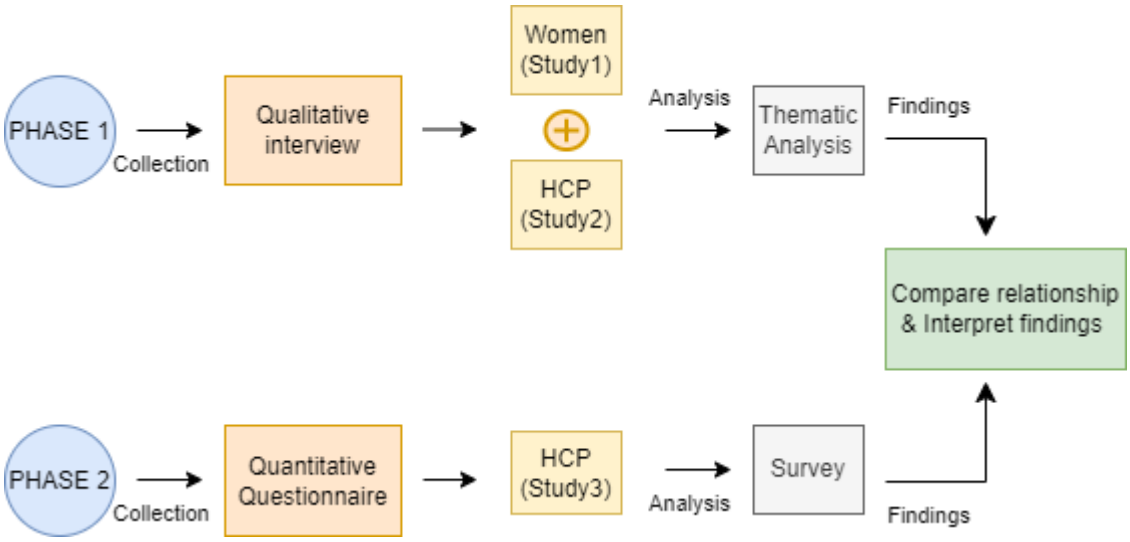

Figure 1.1 Flow diagram of the entire research process

1.7 STRUCTURE OF THE THESIS

The remainder of this thesis is structured as follows. Chapter Two comprises an integrative review of the literature exploring the knowledge and awareness of pregnant and postpartum women regarding maternal mental health issues.

The third chapter presents an integrative review of the literature in relation to HCPs' knowledge of maternal meant health issues, before the rationale for the current study is provided. The research questions are stated to conclude the chapter.

Chapter Four provides comprehensive details of the research design, methodology, participant recruitment criteria, data collection methods, research procedure and analysis process used in this study, as well as ethical considerations.

Chapter Five presents the results obtained from Phase 1 (qualitative) of the research study, whereby semi-structured interviews and reflexive thematic analysis were utilised to explore study aims.

Chapter Six contains the findings of Phase 2 (quantitative), which used an online questionnaire to measure HCPs' knowledge of maternal mental health issues.

Chapter Seven comprises an in-depth discussion that combines the findings of both Phases of this study, linking these to the findings of existing literature. The limitations of the current study are also explored. The chapter ends with a discussion of the implications of the research findings, recommendations for practice, recommendations for future research, and overall conclusions.

Chapter 2: Women's Awareness of Mental Health: An Integrative Review

2.1 INTRODUCTION

Mental disorders are among the most prevalent morbidities during pregnancy and the postnatal period, with research indicating that various types of mental health issues can emerge during this critical time (Howard *et al*., 2014; Jones *et al*., 2014). Pregnancy and the first-year postpartum are periods of intense emotion for all women, but for those experiencing mental health problems, these times can be especially challenging and distressing, particularly if they lack access to adequate and timely assessment and treatment. This situation is more serious given that psychological disorders during pregnancy have been associated with insufficient antenatal care, low birth weight, and premature delivery. In the postpartum period, they have also been linked to poor emotional engagement, neglect, and even hostility towards the newborn (Satyanarayana *et al*., 2011).

During the antenatal period, the physical health of women often takes precedence over their psychological and emotional well-being. Conditions such as pregnancy-induced hypertension are treated as high-risk, whereas mental health issues are often overlooked unless they are severe. NICE indicates that women may first develop mental health problems during pregnancy, and existing conditions can get worse during the prenatal period. Up to 20% of women are affected by prenatal mental health issues (NICE, 2022). A review by Reddy *et al*. (2013) on the prevalence of various mental disorders and associated factors at the community level in India revealed that the general public's understanding of mental illness was inadequate, which contributed to negative attitudes towards these conditions. This lack of awareness may prevent women from recognising common symptoms of mental illnesses during pregnancy and early postpartum, leading to poorer maternal outcomes.

Given these concerns, there is an urgent need to enhance our understanding of mental health awareness among pregnant and postpartum women. Given this, the current chapter focuses on reviewing studies that assess pregnant and post-partum women's level of awareness of mental health issues during pregnancy and the postnatal period. It includes both quantitative and qualitative research, providing statistical evidence and offering diverse, meaningful insights into the awareness levels of these women regarding mental health problems, leveraging a variety of methodologies to capture the breadth and depth of this important topic. The review

aimed to explore the awareness of antenatal and postnatal women regarding mental health issues during pregnancy and the postpartum period.

The question that guided the literature review is the following: How aware are antenatal and postnatal women of mental health issues during pregnancy and after giving birth?

2.2 METHODS

The literature review was structured and conducted using an integrative review approach based on Whittemore and Knafl (2005) updated methodology. This methodology was chosen because it uniquely allows for the simultaneous inclusion of multiple research methodologies, enabling a comprehensive understanding of the phenomenon of mental health awareness among antenatal and postnatal women. The integrative review framework developed by Whittemore and Knafl (2005) is designed to enhance rigor and accuracy while minimising bias associated with combining various research methods. It provides the flexibility to address broader, multidimensional questions, making it particularly well-suited for exploring complex topics like maternal mental health.This approach is essential for exploring complex topics like maternal mental health, where the interplay of social, cultural, and structural factors demands a holistic synthesis of evidence. This framework is widely recognised in the nursing literature and is particularly valued for its detailed description of the integrative review process and its relevance to complex topics like mental health awareness during and after pregnancy (Milliken, 2018). Additionally, the review process adhered to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Moher *et al*., 2009) to ensure a transparent and systematic approach to the selection, analysis, and reporting of the included studies.

Whittemore and Knafl (2005) outline five key stages in their review process:

1. **Identification of Purpose and Variables of Interest**

The review's objective was first established, focusing on the awareness, knowledge, and understanding of mental health issues among pregnant and postpartum women. This step was crucial for setting clear parameters for data extraction from various studies, ensuring a focused and relevant review.

2. **Literature Search Strategy**

The second stage involved developing a comprehensive literature search strategy to gather the maximum number of eligible primary sources. This entailed systematically searching electronic databases using well-defined criteria to ensure the inclusion of all relevant studies.

3. **Evaluation of Primary Source Quality**

Once the literature was gathered, the next step was to assess the quality of the primary sources. This evaluation is critical as it varies based on the sample frame and the methodological rigor of each study. Ensuring the quality of sources helps maintain the integrity of the review findings.

4. **Data Analysis:**

In this stage, data from the primary sources were extracted and subjected to a thorough analysis. The data was organised, coded, categorised, compared, and summarised according to the review's objectives and research questions. This structured analysis facilitated the synthesis of findings across diverse studies.

5. **Discussion of Implications and Limitations**

The final stage involved an analysis of the implications of the review findings for practice, policy, and future research, as well as acknowledging the limitations of the studies included. This critical reflection helped contextualise the findings and identify areas for further investigation.

The sections that follow elaborate the specific strategies and steps undertaken to ensure adherence to Whittemore and Knafl's methodology.

2.2.1 Problem Identification

The aim of this integrative review was to explore, appraise, and critically synthesise the evidence investigating antenatal and postnatal women's awareness, understanding, and knowledge of mental health issues during pregnancy and the postpartum period. More specifically, it allowed a complete understanding of the current state of knowledge regarding the main research question of this current study:

- What is the awareness/knowledge/understanding for antenatal and postnatal women regarding mental health issues during pregnancy and postpartum period?

2.2.2 Search Strategy

A computerised search of the literature was conducted using the following health and social care databases: CINAHL, EMBASE, MEDLINE and PsycINFO. A manual review of the reference lists of the retrieved publications was also carried out. The date range included articles published between 2011 to 2021. It was conducted in April 2021, and an updated search of the literature was undertaken in June 2024 to identify any relevant studies published since 2021 or

any previously not identified during the original search. The decision to include studies published within the past 13 years reflects the need to prioritise the most recent and updated evidence, capturing the maternal mental health research. The search terms and Boolean operators used for the literature searches are shown in Figure 2.1.

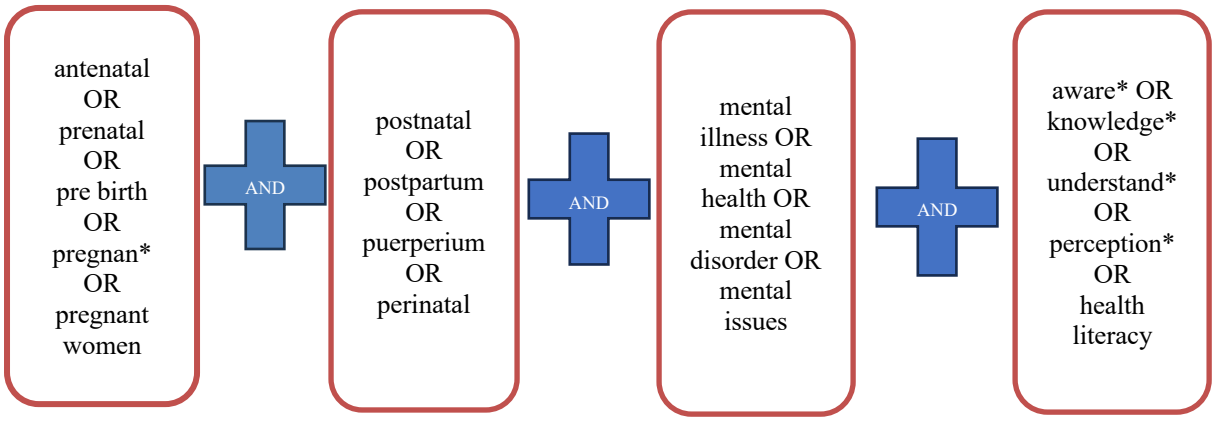

Figure 2.1 Search terms used for literature related to women

Inclusion criteria included articles that adhered to the following:

1. Focused on women's awareness/knowledge/understanding of mental health issues during pregnancy and after birth.
2. Participants were pregnant or postpartum women.
3. Written in the English language.

The one exclusion criterion was as follows:

4. Studies that were not primary research (e.g., systematic reviews, conference abstracts, textbooks and commentaries).

Systematic reviews were excluded to maintain the primary focus on original research, enabling a direct evaluation of methodologies, and findings. Also, in this integrative review question which aim to explore context-specific factors, such as cultural or regional influences, which might be diluted or overlooked in broader systematic reviews. Grey literature was also exlcluded to maintain the methodological rigour of the review. Moreover, The review excluded non-English studies due to resource constraints, including the availability of translation expertise and the time required for the rigorous evaluation of non-English studies. Additionally, it is important to note that most Arabic research papers are published in English, as English is the predominant language used for scientific dissemination in the region.

2.2.3 Search Outcomes

The search of the electronic database provided 6855 articles. After removing duplicate articles, 3576 studies remained. Following the review of the titles and abstracts, 3441 papers were removed as not relevant, and 135 papers underwent full-text review. Few of these studies assessed pregnant and postnatal women's awareness of mental health issues during pregnancy and after birth; therefore, most of the articles were rejected, with only 17 papers eligible and included in the final review according to the inclusion and exclusion criteria. Figure 2.2 shows the PRISMA flow diagram illustrating the process.

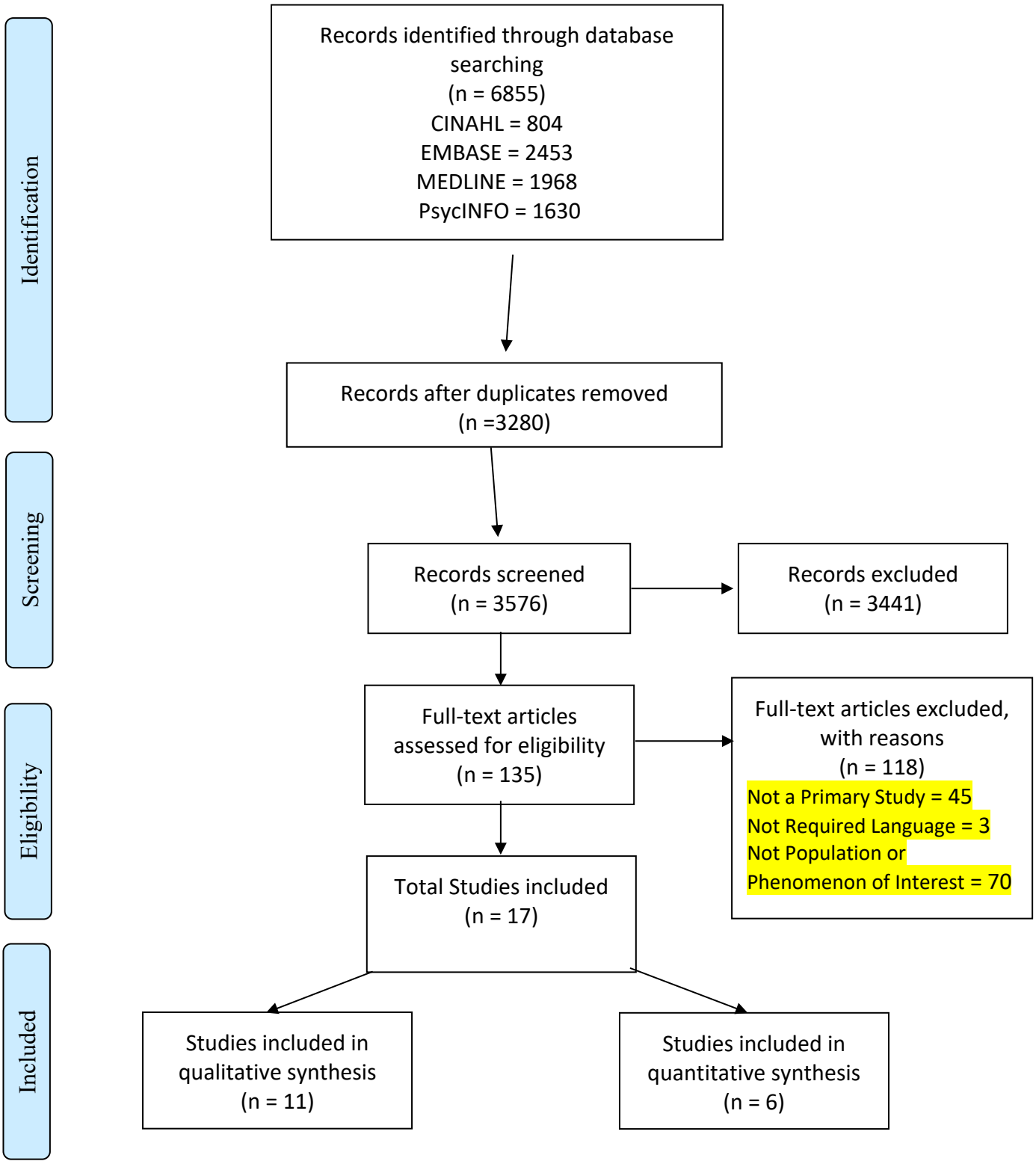

Figure 2.2 PRISMA flow diagram (women's awareness)

2.2.4 Quality Appraisal

The quality of the included papers was evaluated using the Critical Appraisal Skills Programme (CASP) checklists (CASP, 2018). The CASP checklist for qualitative studies was applied to evaluate qualitative research, and the CASP checklist for cohort studies was used to assess quantitative research. The CASP tool has both strengths and weaknesses in assessing papers. Among its strengths, the CASP provides a structured evaluation framework, offering a systematic approach to the assessment process. Its sequence-based format is adaptable to all research methods, making it flexible. One of its significant advantages is its ability to deliver clear and coherent criteria for evaluating the methodological quality and applicability of studies. Additionally, it enhances transparency and facilitates the identification of both strengths and weaknesses in the studies being reviewed. Regarding the weaknesses of the CASP tool, it does not quantify the quality of studies, making it less suitable for weighting findings during synthesis. Another limitation is that some CASP criteria rely on subjective judgment, which can result in variability in interpretation. Each study, whether qualitative or quantitative, was assessed against individual criteria, as provided in Appendix A.

Qualitative studies

The qualitative studies were found to be of good methodological quality generally. All the studies defined the study objectives, the appropriateness of the design, clear statements of findings, and the significance of their findings. However, there were limitation to the qualitative studies in terms of data saturation (n=2), acknowledgment of the researcher/participant relationship (n=3), credibility of findings (i.e., not explicitly discussed) (n=3), and the absence of ethical approval (n=2).

Quantitative studies

The quantitative studies were found to be of good methodological quality generally. Across all studies, the objectives, design, and sample were clear. The response rate for one survey was 97.8%, but in all other cases this was not reported (n=5). Most quantitative studies were conducted using convenience sampling (n=5), and a variety of measures were utilised to examine antenatal and postnatal women's awareness of mental health issues during pregnancy and after giving birth. The validity and reliability of measures was not clear in five studies, and three studies did provide a clear indication that ethical approval had been obtained.

2.3 DATA EXTRACTION AND SYNTHESIS

A data extraction table was formulated to structure the collection of relevant data from each included study. Several domains were included in the table: authors, year of publication, country, study design, sample size, outcomes and key findings. Tables 2.1 and 2.2 provide the complete summary of characteristics of the 17 studies included in this review.

Table 2.1

Qualitative Studies

Author	Country, setting, sample	Aims	Research design, method	Key findings
Al-Abri *et al*. (2023)	Oman (Muscat), 15 HCPs, 13 pregnant, two postpartum women	Explore views, experiences on anti, peri, and postnatal depression from the Middle East perspective.	Qualitative descriptive, semi-structured interviews, thematic analysis. Purposive sampling.	1. HCPs indicated that Omani women have limited/poor awareness of anti, peri and postnatal depression. 2. HCPs had limited awareness about the nature of anti, peri and postnatal depression due to their lack of experience and training in providing care. 3. Mothers often believed that the depressive symptoms they experienced were part of their pregnancy symptoms, so they did not tell their GPs. 4. Women stated that they were hesitant to seek help for mental health disorders for fear of being stigmatised and/or stereotyped.
Abrams *et al*. (2016)	Vietnam, 12 primary health workers (PHWs), 14 mothers in rural communities.	Investigate knowledge and perceptions of PMDs in rural Vietnam.	Qualitative, semi-structured interviews with grounded theory analysis.	1. PHWs reported having almost never having treated a woman with a PMD. 2. Anecdotal evidence from the women interviewed suggests that there are incidents of mental disorders during the perinatal period that go largely unaddressed. 3. Over half of mothers also reported having no firsthand knowledge of women experiencing PMDs.
Agyekum (2023)	Ghana (Accra), 21 pregnant women.	Explore perceptions and experiences of prenatal mental health problems.	Qualitative, semi-structured interviews, Interpretative Phenomenological Analysis (IPA). Purposive sampling.	1. Lack of knowledge of mental health disorders in this study. 2. Women's conceptualisation of mental health problems embodied in the terms "thinking too much" and "worrying too much". These were closely linked with somatic symptoms such as headaches, disturbances in sleep, and body aches and pains. 3. Coping mechanisms tempered by cultural and religious norms and value systems.
Ng'oma *et al*. (2019)	Malawi, 22 women (antenatal/postnatal).	Explore the insights of perinatal women and fundamental maternal health care workers regarding perinatal depression.	Qualitative, in-depth interviews. Purposive sampling.	1. All participants acknowledged the need for support and an intervention that will address the identified challenges. 2. They viewed strengthening the health delivery system as crucial to effectively address the health care needs of perinatal women and gaps identified in the system. 3.The study acknowledges perinatal depression as a mutual mental health challenge that impacts normal functioning of women and self-care activities.

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Nakku *et al*. (2016)	Uganda, (12 pregnant, 12 postpartum)	Explore barriers and facilitators to PMH care in rural Uganda.	Qualitative, focus group discussions. Purposive sampling.	1. Participants perceived that there was an important unmet need for PMH care in the district. 2. There were significant gaps in knowledge about mental health problems, negative attitudes amongst mothers and health care providers towards sufferers. 3. Poverty and inability to afford transport to services, poor partner support and stigma were thought to add to the difficulties of perinatal women accessing care. 4. There was an awareness of the need for interventions to respond to this neglected public health problem.
Bledsoe *et al*. (2017)	USA, 20 pregnant adolescents in southeastern clinics.	Explore perceptions of depression and barriers to accessing services.	Qualitative, in-depth interviews, semi-structured guide. Convenience sampling.	1. Participants lacked experience with psychiatric services and did not recognise their symptoms as depression. 2.Participants perceived a need for mood improvement. 3. Adolescent women are highly likely to engage in psychiatric services if the services reduce practical and psychological barriers.
Byrnes (2019)	USA, 24 pregnant and postpartum women in Bronx, NYC.	Understand knowledge and barriers to PMAD care among at-risk women during the perinatal period.	Qualitative, focus group discussions with semi-structured guide.	1. Participants had expansive knowledge regarding the perinatal moods and anxieties but stated that they were not in a position to secure good health care as treatment options were limited. 2. Many had experienced PMAD but reported avoiding disclosure due to fear of losing custody of their child and involvement of child protective services.
Spedding *et al*. (2018)	South Africa, 262 pregnant women in Western Cape Town.	Understand perceptions of perinatal mental disorders and effective treatments.	Qualitative, vignettes and questionnaires thematic analysis. Convenience sampling.	1. 77.4% of participants were unfamiliar with the signs and symptoms described in the vignettes, as they didn't consistently align with the mental disorder. 2. 57.5% viewed the conditions as indicative of a "weak individual." 3. Stress was the main trigger for perinatal symptoms. 4. Postnatal depression was considered more normal than antenatal depression. 5. Seeking help from a spiritual or religious advisor was as common as from a psychologist or social worker.
Franks *et al*. (2017)	UK, England, 17 women.	Explore factors influencing pregnant women's mental health.	Qualitative, individual and group discussions, thematic analysis.	1. Participants recognised that a prior history of mental health issues increases the risk of relapse during pregnancy. 2. Mothers felt stigmatised and unable to seek support 3. Women's mental health is primarily influenced by relational, experiential, and material factors. 4. Local socio-economic deprivation significantly impacts women's mental health and their need for services.
Fellmeth *et al*. (2023)	India, 36 participants (pregnant, postpartum, non-perinatal).	Explore awareness and acceptability of mental health assessment tools.	Qualitative, semi-structured interviews, 7 Focus Group Discussions, thematic analysis.	1. Participants aware of various behavioural, affective, and cognitive symptoms of mental health conditions during the perinatal period. 2. Women reported a lack of support from their partners.

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				3.Societal pressure to have a son rather than a daughter was a further stressor. 4. Stigmatising and derogatory labels, such as “lunatic”, were commonly reported by individuals with mental health conditions.
Li *et al*. (2021)	USA (New York), 13 Chinese immigrant women and five spouses.	Explore perinatal experiences, barriers, and facilitators to healthcare utilisation.	Qualitative, semi-structured interviews, focus groups, thematic analysis. Convenience sampling.	1.Women had limited knowledge of perinatal depression and often did not fully utilise mental health services due to language and cultural barriers. 2. Screening was more acceptable when combined with routine prenatal tests such as general bloodwork, glucose monitoring, or ultrasound. 3. Cultural stigma led women to first discuss mental health concerns within their family. 4. Participants expressed doubts about the role and value of mental health professionals, citing significant cultural and educational barriers.

Table 2.2

Quantitative Studies

Author	**Country, setting, sample**	**Aims**	**Research design, method**	**Key findings**
Lara *et al*. (2014)	Mexico, 71 women (41 in third trimester, 30 postpartum).	Explore recognition of perinatal depression, and acceptance of treatment modalities, and barriers to treatment	Quantitative (descriptive, exploratory). Convenience sampling. Interviews on demographics, depressive symptoms, recognition, treatment acceptability, and barriers.	1. 99% familiar with postpartum depression. 2. 25% unaware of its real cause. 3. Difficulties in discussing emotional state. 3. Barriers: lack of time, procedures, cost, support. 4. Awareness may not suffice for seeking help due to instrumental barriers and attitudes to treatment.
Abazie and Usoro (2021)	Nigeria, 240 mothers.	Assess knowledge of postpartum depression among mothers.	Quantitative (descriptive). Self-structured questionnaires and Edinburgh Postnatal Depression Scale. Simple random sampling.	1. 60.8% had poor knowledge of postpartum depression. 2. Significant relationship between age and knowledge. 3. No significant relationship with education. 4. Need for enhanced health education.
Manjrekar and Patil (2018)	India, 300 pregnant women.	Assess awareness and attitudes towards mental illness in antenatal mothers.	Quantitative (descriptive, cross-sectional). Semi-structured questionnaires. Convenience sampling.	1. 90% unaware mental illness can occur during pregnancy. 2. 7% thought mental illness could occur. 3. Reasons: lack of awareness, education, socio-economic status, cultural beliefs, stigma. 4. No routine mental health screening.
Ransing *et al*. (2020)	India, 270 perinatal women, 42 nursing providers, 20 medical practitioners.	Examine knowledge gap regarding perinatal depression among service providers and users.	Quantitative (cross-sectional). Semi-structured questionnaires for women, online survey for providers. Convenience sampling.	1. 91.49% had no knowledge of depression. 2. Knowledge varied among NPs, MPs, and PWAs regarding: • Viewing PD as a normal pregnancy part: NPs (71.52%), MPs (10%), PWAs (17.39%).

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				• Biological causes of PD: NPs (45.23%), MPs (70%), PWAs (26.03%). • Usefulness of antidepressants for PD: NPs (23.80%), MPs (70%), PWAs (21.73%). 3. Misconception about aetiology and management among providers.
Lodha *et al*. (2022)	India, 106 participants (46 pregnant mothers, 60 relatives).	Examine perceptions of perinatal depression among pregnant mothers.	Quantitative. Structured interviews including 16 questions. Convenience sampling.	1. 93% unfamiliar with perinatal depression. 2. 45% mothers, 50% relatives didn't believe in mental health problems. 3. 77% believed depression indicated lack of love for baby.
Nwoke *et al*. (2023	Canada (Alberta), 120 African immigrant mothers with infants ≤2 years.	Determine views on PMH and predictors of these views. Identify views on screening.	Quantitative (cross-sectional). Online survey. Convenience sampling.	1. 51.8% had high prenatal mental health knowledge. 2. 94% had high postnatal mental health knowledge. 3. 25.4% identified impact of prenatal anxiety on child development. 4. First choice of help: partner, healthcare professional, friend.

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2.4 CHARACTERISTICS OF STUDIES

The primary findings of this integrative review are derived from the synthesis of existing data on womens' understanding of mental health issues during pregnancy and the postnatal period. The characteristics of all 17 studies, including 11 qualitative and six quantitative, are summarised in Tables 2.1 and 2.2. These studies were conducted across 12 different countries. The most frequently represented country was India (n=4), followed by the USA (n=3). Additionally, there were five studies conducted in five different African countries, and one study each from Vietnam, the UK, Mexico, and Oman.

2.4.1 Qualitative Studies

The qualitative studies included in this review generally demonstrated robust methodological quality. Most studies effectively defined their objectives, applied appropriate research designs, clearly articulated their findings, and highlighted the significance of their results. Despite these strengths, some methodological concerns were noted. For instance, only three studies acknowledged the relationship between the researcher and participants. Additionally, the credibility of findings was not explicitly discussed in five studies, and three studies did not secure ethical approval.

In assessing the articles against a predefined set of criteria, it became apparent that while the overall quality was high, certain studies exhibited limitations in methodological rigour. Notably, all qualitative articles provided detailed descriptions of the themes and patterns identified by the researchers. Among these, studies by Agyekum (2023); Bledsoe et al. (2017); Fellmeth et al. (2023); Franks et al. (2017), stood out for their strong evidence of methodological quality.

Different sampling techniques were employed across the studies. Agyekum (2023), Al-Abri *et al*. (2023), Nakku *et al*. (2016), and Ng'oma *et al*. (2019) used purposive sampling to recruit participants, whereas Bledsoe *et al*. (2017), Byrnes (2019), and Li *et al*. (2021) opted for convenience sampling. Some studies also provided brief descriptions of the methods used to ensure quality. For instance, Franks *et al*. (2017) detailed a process of constant comparison during data analysis, which involved comparing sections of data, categories, dimensions, and the original data. This study also employed researcher reflexivity, peer debriefing, and comprehensive data analysis to enhance quality.

In terms of data analysis methods, seven studies utilised thematic analysis. Byrnes (2019) employed content analysis, and Agyekum (2023) employed Interpretative Phenomenological

Analysis (IPA). In addition, all research involved more than one researcher, consultant, or auditor in the analysis, review, or discussion Phases. The rationale for incorporating different viewpoints varied among the articles, likely reflecting the authors' explicit or implicit epistemological positions. This approach was intended to minimise potential bias in thematic coding. Triangulation was a notable strategy used across studies to foster reflexivity and deepen analysts' understanding of the data, as noted in Bledsoe et al. (2017); Franks et al. (2017); Ng'oma et al. (2019).

The studies varied significantly in their settings and methodological approaches, providing a rich diversity of perspectives. In Uganda, Nakku *et al*. (2016) employed six focus groups to explore the barriers and facilitators of delivering prenatal mental health care in primary settings, interviewing 76 participants, including Village Health Team members and pregnant/postpartum women. In Malawi, Ng'oma *et al*. (2019) conducted descriptive research through in-depth interviews with 32 participants comprising antenatal and postnatal women as well as primary health care workers to investigate perceptions of prenatal depression and the necessary health service interventions. In Abrams *et al*. (2016), vignettes were used to investigate knowledge and perceptions of prenatal mental disorders and their treatments at the community level in a rural, predominantly ethnic minority region of northern Vietnam. Scenario 1 referred to a woman with possible post-partum depression, and scenario 2 referred to a woman with possible antenatal generalised anxiety. In South Africa, Spedding *et al*. (2018) also used vignettes (supplemented with questionnaires) to examine women's beliefs regarding the causes and treatments of prenatal mental disorders. These were administered to 262 pregnant women. In the United States, Byrnes (2019) used Community-Based Participatory Research (CBPR) to explore knowledge and awareness of prenatal mood and anxiety disorders (PMAD), conducting focus group discussions with 24 women. Another U.S. study by Bledsoe *et al*. (2017) explored perceptions of depression and psychiatric services among 20 pregnant adolescents using questionnaires. In England, Franks *et al*. (2017) conducted a qualitative study involving individual and group interviews with 17 mothers and 15 professionals. This study aimed to explore the factors influencing pregnant women's mental health from both maternal and professional perspectives.

The qualitative studies included in this review largely exhibited strong methodological quality, with most defining clear objectives, applying appropriate designs, and articulating significant findings. However, some studies showed limitations, such as the lack of explicit discussion on the researcher-participant relationship and ethical approval. Sampling techniques

varied, with purposive sampling being common. Thematic analysis was the primary data analysis method, supplemented by strategies like triangulation to ensure reflexivity and reduce bias. Despite methodological differences, the studies collectively provided a diverse and comprehensive exploration of prenatal mental health across various cultural and healthcare settings.

2.4.2 Quantitative Studies

The six quantitative papers reviewed in this study explored diverse settings and employed varied methodological approaches to examine women's awareness and understanding of prenatal mental health issues. Firstly, Abazie and Usoro (2021) conducted a descriptive correlational study involving 240 mothers in Nigeria. They utilised a questionnaire alongside the Edinburgh Postnatal Depression Scale (EPDS) to evaluate knowledge of postpartum depression among mothers attending immunisation clinics. The EPDS questionnaire demonstrated a Cronbach's coefficient of 0.81, indicating high reliability. The study categorised respondents based on their scores: those scoring between 1% and 49% were deemed to have poor knowledge of postpartum depression, whereas those scoring 50% or higher were considered to have good knowledge.

In Mexico, Lara *et al*. (2014) carried out a descriptive, exploratory study with a smaller sample of 71 pregnant and postpartum women. This study aimed to understand their recognition of perinatal depression, the acceptability of different treatment modalities, and the perceived barriers to treatment. Despite the limited sample size, the study offered significant insights into the women's awareness and challenges regarding perinatal depression.

Ransing *et al*. (2020) conducted a cross-sectional study in India to explore the knowledge gap in perinatal depression among service providers. They used a semi-structured proforma for the Perinatal Depression Monitor and conducted online surveys with 270 perinatal women. The study's objective was to highlight the disparity in understanding perinatal depression among healthcare providers and the general population. Similarly, Manjrekar and Patil (2018) performed a cross-sectional study in rural India, involving 300 antenatal mothers. Their research focused on exploring the awareness, attitudes, and perceptions towards mental illness during pregnancy. Data were collected using closed questionnaires, which provided valuable insights into the mental health literacy of pregnant women in rural settings. In Lodha *et al*. (2022) study, which was conducted also in India, there were 106 participants, 46 pregnant mothers and 60 of their relatives. The research examined the perceptions of perinatal depression among pregnant mothers, and they administered the EPDS.

In Canada, Nwoke *et al*. (2023) conducted a cross-sectional study to determine African immigrant mothers' views on PMH, identifing predictors of these views regarding PMH screening, and ascertain factors associated with these views.

The evaluation of these quantitative studies focused on various aspects, including sample selection, recruitment methods, analytical techniques, and the tools used to measure awareness and understanding of mental health issues. In terms of sample selection and recruitment, five of the studies had comparable sample sizes: 240, 300, 270, 120, and 106 participants from Nigeria, India, India, India, and Canada in the parenthesised studies respectively (Abazie and Usoro (2021); Lodha et al. (2022); Manjrekar and Patil (2018); Nwoke et al. (2023); Ransing et al. (2020). In contrast, Lara *et al*. (2014) used a smaller sample of 71 women in Mexico, which posed limitations in generalisability due to its size despite providing depth. Nevertheless, all studies adequately detailed their sample sizes and the inclusion and exclusion criteria, which strengthened their methodological robustness.

The studies predominantly utilised non-probability sampling methods, specifically convenience sampling (i.e., Lara et al. (2014); Lodha et al. (2022); Manjrekar and Patil (2018); Nwoke et al. (2023); Ransing et al. (2020). This approach, while cost-effective and easy to implement, has a higher risk of sampling bias and weakens the ability to generalise findings. Conversely, Abazie and Usoro (2021) employed a simple random sampling method, enhancing the validity of their findings through a probability sampling technique. However, they did not specify the tools used for randomisation, such as random number generators, which is a critical detail for ensuring methodological transparency.

Participants were recruited from diverse locations, including primary health centres and hospitals, and via online surveys. This variety in recruitment sites provided a comprehensive view of women's awareness and attitudes towards mental health across different healthcare settings, offering insights into the impact of these environments on their understanding.

Each study used statistical analysis techniques appropriate to their data and research instruments. They employed software, such as IBM SPSS and Epi-Info 7, to analyse numerical data, ensuring rigorous and systematic data processing. This standardisation in data analysis methods across the studies helped in maintaining consistency and accuracy in their findings.

The tools used to measure awareness and understanding varied across the studies but were generally reliable and valid. Abazie and Usoro (2021); Lodha et al. (2022) used the EPDS, a well-validated tool for assessing postpartum depression with a high reliability score. Manjrekar

and Patil (2018) utilised customised questionnaires developed by community medicine and psychiatry experts, with an initial pilot study conducted to ensure validity. Ransing *et al*. (2020) used a semi-structured questionnaire from Highet *et al*. (2011), which included the Perinatal Depression Monitor – a comprehensive survey designed to measure awareness, attitudes, and knowledge regarding prenatal mental health. Lara *et al*. (2014) employed the Patient Health Questionnaire (PHQ-2), known for its validity and reliability, and also included open-ended questions adapted from Oates *et al*. (2004) to facilitate cross-cultural comparisons. In Nwoke *et al*. (2023) a 63-item online questionnaire was used, which were drawn from the EPDS and the Generalised Anxiety Disorder-7 scale. Additional questions were developed using the Alberta Maternal Mental Health survey (2012) as a guide.

The quantitative studies reviewed provide a diverse and insightful perspective on the awareness, knowledge, and attitudes towards prenatal mental health issues across different cultural contexts. Despite differences in methodologies and sample sizes, they collectively underscore the critical need for enhanced education and awareness of mental health issues during and after pregnancy, particularly in developing countries where barriers to quality education and healthcare are prevalent. The findings highlight the importance of using robust sampling methods, reliable and valid measurement tools, and comprehensive data analysis techniques to advance understanding in this vital area of maternal health.

No papers were excluded from the review. Each method used to measure the level of awareness has its own merits and demerits. A strong point across all studies is that the authors provided a clear explanation for their questionnaires and effectively addressed their research questions. Therefore, it is not appropriate to conclude that one tool is superior to another. However, all the studies adhered to key scientific principles, and significantly contribute to assessing the level of awareness regarding mental health issues. These vital tools can be effectively utilised in future research.

2.5 DATA ANALYSIS

The data analysis stage involved categorising, coding, and summarising the 17 reviewed papers to facilitate the organisation and synthesis of the literature. After this process, papers were analysed using data comparison and thematic analysis. In this review, the findings are categorised into four primary themes, with two of these themes further divided into three sub-themes each. The main themes identified are “Awareness of Mental Health”, “Stigmatisation

of Mental Health", "Barriers to Treating Mental Health Conditions", and "Strategies to Address Mental Health Issues". Table 2.3 lists the themes and subthemes identified in the review according to study.

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Table 2.3

Themes and Subthemes Identified from the Studies Included in the Review

Author/s	**Awareness of mental health**	**Stigmatisation of mental health**	**Barriers to treating mental health conditions**			**Strategies to address mental health issues**		
			Lack of awareness	Lack of confidence in care providers and systems	Limited access to mental health care	Education and training	Culturally appropriate screening interventions	Enhancing access to mental health services
Ng'oma *et al*. (2019)	✓							
Nakku *et al*. (2016)	✓							
Bledsoe *et al*. (2017)	✓	✓						
Byrnes (2019)	✓			✓			✓	
Spedding *et al*. (2018)	✓							
Franks *et al*. (2017)	✓	✓			✓			
Lara *et al*. (2014)	✓	✓						✓
Abazie and Usoro (2021)	✓					✓		
Ransing *et al*. (2020)	✓		✓			✓	✓	✓
Manjrekar and Patil (2018)	✓	✓	✓	✓				
Abrams *et al*. (2016)	✓	✓	✓					
Agyekum (2023)	✓				✓		✓	
Al-Abri *et al*. (2023)	✓	✓	✓			✓		
Fellmeth *et al*. (2023)	✓	✓						
Li *et al*. (2021)	✓	✓	✓	✓		✓	✓	✓
Lodha *et al*. (2022)	✓	✓					✓	
Nwoke *et al*. (2023)	✓	✓				✓		
Representation	17/17	10/17	5 /17	3/17	2/17	5/17	5/17	3/17

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2.6 RESULTS

In this review, the findings were organised into four main themes: Theme 1: Awareness of Mental Health; Theme 2: Stigmatisation of Mental Health; Theme 3: Barriers to Treating Mental Health Conditions, which includes the subthemes of Lack of Awareness, Lack of Confidence in Care Providers and Systems, and Limited Access to Mental Health Care; and Theme 4: Strategies to Address Mental Health Issues, which includes the subthemes of Education and Training, Culturally Appropriate Screening Interventions, and Enhancing Access to Mental Health Services.

2.6.1 Theme 1: Awareness of Mental Health

This theme explores the extent of knowledge and understanding that women have about mental health issues during pregnancy and after childbirth. The theme of awareness was strongly described in all 17 studies. Studies in India highlight a significant lack of awareness about mental health issues during pregnancy and after childbirth among participants. For instance, Manjrekar and Patil (2018) conducted a descriptive cross-sectional study with 300 pregnant women in India. Their findings revealed that 90% of the women were unaware of mental health disorders occurring during pregnancy and the postpartum period, and only about 7% acknowledged that such conditions could arise during pregnancy. This indicates a substantial gap in awareness of mental health problems among pregnant women residing in rural southern India.

Similarly, in the study by Ransing *et al*. (2020), which involved 270 prenatal women in India, it was found that 247 participants (91.49%) had no knowledge about perinatal depression, and only 23 participants (8.51%) indicated some awareness of depression. Lodha *et al*. (2022) further reported that 93% of participants were unfamiliar with the concept of perinatal depression. Additionally, half of the participants did not believe that women could experience mental health problems during and after childbirth. In contrast, the study by Fellmeth *et al*. (2023) showed a different trend, where women were aware of mental health conditions during the perinatal period. These women described experiencing a range of behavioural, affective, and cognitive symptoms, indicating some level of understanding and recognition of PMH issues.

In a Nigerian study that sought to determine knowledge of postpartum depression among mothers at immunisation clinics in selected primary healthcare centres, the author revealed that there was widespread poor knowledge of postpartum depression (Abazie and Usoro (2021).This descriptive quantitative study revealed that the majority of mothers (60.8%) had poor

knowledge of postpartum depression based on their answers to the knowledge section of the questionnaire. In Li *et al*. (2021) Chinese immigrant women in the USA also had limited knowledge of perinatal depression.

The only study based in Middle East (specifically in Oman) by Al-Abri *et al*. (2023) found that Omani women had limited/poor awareness of perinatal and postnatal depression. In Abrams *et al*. (2016), based in Vietnam, this was also the case, with the authors reporting that over half of mothers had no knowledge of perinatal depression.

Spedding *et al*. (2018), in their study who focused on pregnant women's mental health literacy and perceptions of perinatal mental disorders in South Africa, recruited 262 pregnant women through a midwifery and obstetrics unit. The aim of the study was to identify their views of the symptoms described in the vignettes, and participants were asked if the symptoms were "normal for pregnancy or motherhood". The five vignettes were adapted to portray the experiences of a fictitious woman during the perinatal period (six months pregnant in four of the vignettes, and three weeks postnatal in the fifth) showing signs and symptoms of one of five psychiatric disorders as defined by DSM 5 criteria: ante and postnatal depression, panic disorder, substance dependence, and schizophrenia. The results revealed that 77.4% respondents did not identify any of the signs and symptoms described in the vignettes.

Agyekum (2023) found similar results in an African study, where participants displayed limited understanding of mental health disorders. In Uganda, Nakku *et al*. (2016) explored the barriers and facilitators to providing PMH care in a low-income rural district. Their study involved 76 participants, including Village Health Team members, key informants, and women in various stages of pregnancy and postpartum. The findings indicate that while there was some awareness of mental health issues during pregnancy and after childbirth, significant gaps in knowledge persisted. Participants also expressed a need for PMH care and identified a negative attitude toward those suffering from mental health problems among both mothers and healthcare provider.

In a study by Bledsoe *et al*. (2017), 20 pregnant, low-income, adolescent women participated to examine pregnant adolescent women's perceptions of depression and psychiatric services in two public prenatal clinics in the USA. Generally, participants lacked experience with psychiatric services and did not recognise their symptoms as depression. However, participants perceived a need for mood improvement and were interested in engaging in services that incorporated their perspective and openly addressed stigma.

On the other hand, there was studies in which the women were aware about depression symptoms. Ng'oma *et al*. (2019) conducted in-depth interviews with 22 women who screened positive for depression using a locally validated Chichewa language version of the EPDS at antenatal and postnatal clinics in one rural and one urban health care setting in Malawi. The authors stated that all perinatal women recognised and were able to describe the symptoms of depression they were experiencing. Moreover, all participants acknowledged the need for support and intervention that could address the identified challenges. Additionally, they viewed strengthening the health delivery system as crucial effectively address their needs and gaps identified in the system.

In a US study by Byrnes (2019), focus groups were used to explore knowledge of Perinatal Mood and Anxiety Disorders (PMAD), awareness of treatment for PMAD, and barriers to care in two community centres with 24 pregnant and postnatal (given birth within 12 months). The women in this study were very knowledgeable and aware of the signs, symptoms and impact of PMAD. Many had experienced PMAD but reported avoiding disclosure due to fear of losing custody of their child and involvement of child protective services. Similar findings were reported in Franks *et al*. (2017), who conducted a qualitative study to explore mothers' and professionals' perspectives on the factors that influence pregnant women's mental health using individual and group interviews with 17 women who self-identified as experiencing mental health problems during pregnancy. 15 professionals were also interviewed to gain their perspectives. There were significant areas of agreement between mothers' and professionals' perspectives on factors that undermine women's mental health during pregnancy and what is required to support women's mental health. These were as follows: individual factors, personal experiences prior to pregnancy, pregnancy-related factors, relationship factors, social conditions, and material condition.

According to Lara *et al*. (2014) who conducted a descriptive, exploratory study with 71 women (41 in their third semester of pregnancy and 30 during the fourth to sixth postpartum weeks) in Mexico City, almost all the women had heard of the term postpartum depression, and only one quarter did not know the causes of this disorder. Moreover, the authors found that the main barriers to treatment were lack of time, institutional procedures, being unable to afford care, and lack of support. Finally, in Canda, Nwoke *et al*. (2023) used an online survey to assess African immigrant mothers' views on PMH. The study revealed a discrepancy in the participants' knowledge levels, with 51.8% of participants showing awareness of prenatal

mental health issues, while a significantly higher percentage (94%) were knowledgeable about postnatal mental health.

2.6.2 Theme 2: Stigmatisation of Mental Health

This theme examines the societal stigma, cultural attitudes, and misconceptions surrounding mental health issues in pregnant and postpartum women and how these perceptions affect their awareness and willingness to seek help. Stigma was identified a major psychological barrier against seeking psychiatric services for depression and other mental health problems among perinatal women. For instance, in Bledsoe *et al*. (2017), stigma and fear were reported as important, common barriers. In this study, the vast majority of perinatal women found it challenging to share their mental health issues for fear of being judged, stigmatised, or being looked down upon. As a result, many perinatal women were living in denial as they did not want to perceive themselves as depressed or did not want to think that their symptoms required psychiatric services. Due to the fear of stigmatisation, perinatal women found it challenging to speak about their unhappiness or discomfort during their pre and postpartum periods. This is echoed in other literature on the topic. For instance, Lara *et al*. (2014, p. 239) noted that women often "fear acknowledging their emotional problems and often get scared of being depressed". Consequently, healthcare providers would find it extremely challenging to understand what prenatal women feel or undergo as regards to mental health issues, and hence have difficulty assisting them. Stigma was also identified by Manjrekar and Patil (2018) as associated with mental health problems among pregnant women living in rural areas in India. In fact, approximately 96% of pregnant women with mental health problems in their study reported experiences stigma-related problems.

In Franks *et al*. (2017), mothers and professionals also described negative effects of stigma on women's mental health and access to services. More specifically, mothers expressed feeling unable to seek support from their friends and families due to stigma about mental health. Similarly, in Abrams *et al*. (2016), the women interviewed highlighted that incidents of mental disorders during the perinatal period often went largely unaddressed due to stigma and misconceptions surrounding maternal mental health issues. This stigma is echoed in the findings of Lodha *et al*. (2022), where 77% of participants in India believed that a mother does not love her baby if she is depressed after delivery.

Again, in studies by Al-Abri *et al*. (2023) and Fellmeth *et al*. (2023) women were hesitant to seek help for mental health disorders for fear of being stigmatised and/or stereotyped. Even more seriously, they perceived a lack of support from partners. Moreover, in Li *et al*. (2021) it

was found that Chinese immigrant mothers preferred to address any mental health concerns within their family first because of cultural stigma. This trend is also reflected in the study by Nwoke *et al*. (2023), where participants' first choice for seeking support was their partner, followed by 33.3% preferring to seek assistance from healthcare professionals, 23.1% from friends or relatives, and 1.9% choosing not to seek help from anyone.

2.6.3 Theme 3: Barriers to Treating Mental Health Conditions

This theme identifies the three key obstacles revealed by the literature review that prevent effective treatment of mental health problems during pregnancy and after childbirth.

Lack of awareness

This sub-theme focuses on the basic level of knowledge among women regarding mental health issues during pregnancy and the postpartum period. It looks at how well-informed they are about the existence and nature of these conditions.

Many women do not recognise or understand the symptoms of mental health issues during pregnancy. For instance, Ransing *et al*. (2020) highlight that both practitioners and patients often lack sufficient knowledge about mental health issues, which hinders the prevention and treatment of prenatal depression. They emphasise the importance of increasing mental health awareness and reducing stigmatisation as effective strategies to mitigate these issues among antenatal and postnatal women. Supporting this, a survey conducted by Manjrekar and Patil (2018) revealed that 90% of the 300 pregnant women participants were unaware of mental health issues that can arise during pregnancy and after childbirth. In Abrams *et al*. (2016) anecdotal evidence from the women interviewed suggests that there are incidents of mental disorders during the perinatal period that go largely unaddressed. Finally, Al-Abri *et al*. (2023) found that mothers often believed that the depressive symptoms they experienced were part of their pregnancy symptoms, so they did not tell their GPs.

Lack of confidence in care providers and systems

There is often a lack of trust in the ability of caregivers and healthcare systems to effectively address PMH issues. Byrnes (2019) noted that some of respondents in her study felt that prenatal care was unreliable because it only focuses only on the health of the foetus and not on the mother. As a result, some of the women felt devalued, causing them to develop depression. Manjrekar and Patil (2018) found similar results, highlighting that health care practitioners in their study focused more on the physical health of antenatal women. As a result, they did not acknowledge the importance of emotion and the psychological well-being of the

mothers. Thus, women lost confidence in medical practitioners, challenging them to mitigate mental health issues during and after pregnancy. Similarly, Li *et al*. (2021) found that participants doubted the role and value of mental health professionals (e.g., psychologists, psychiatrists and others), describing fundamental cultural and language barriers. For example, a participant commented, *"The professionals cannot really improve my situation"* This sentiment highlights the fundamental barriers that prevent many women from seeking and receiving appropriate mental health care during the perinatal period.

Limited access to mental health care

This sub-theme focuses on the geographic, financial, and systemic barriers hinder many women from obtaining necessary mental health services. Two studies cite the inability to access mental health care as one of the biggest challenges in mitigating mental health issues. For instance, poverty and other economic adversities prevent pregnant women from seeking professional advice that is crucial for their well-being. According to Franks *et al*. (2017), previous personal experiences, poverty, and social conditions such as stigma impacts individuals' willingness and ability to seek health care. In addition, the study indicates that low confidence in healthcare providers and systems may also be a barrier in seeking care for women during antenatal and postnatal periods. Low confidence towards these organisations may also result from abandonment and loss of a pregnancy during the previous encounter. Interesting, Agyekum (2023) reported that participants felt that their coping mechanisms were significantly shaped by cultural and religious norms, as well as value systems. These factors played a crucial role in how they approached and perceived mental health care services, influencing their decisions and access to appropriate support.

2.6.4 Theme 4: Strategies to Address Mental Health Issues

This theme focuses on various approaches and implements possible solutions to improve mental health outcomes for expectant and new mothers divided into three main components.

Education and training

One of the best ways to prevent and mitigate mental health issues among antenatal and postnatal women is by educating them to understand the indications and symptoms of mental health issues to seek medical assistance (Abazie & Usoro, 2021). According to Abazie and Usoro (2021), education enables women to distinguish the symptoms of postpartum depression and mitigate stigmatisation. They also recommend that medical and nursing practitioners also be offered further training on the interventions to detect or screen women during antenatal and

postnatal periods to determine their mental health status. Ransing *et al*. (2020) call for improving mental health awareness and knowledge of pregnant women and nursing practitioners to allow early detection of mental health issues, improve the mental health outcomes, and enable exploitation of health services in the community. Li *et al*. (2021) also emphasised the critical importance of educating expecting mothers about prenatal depression, highlighting how such knowledge can empower women to seek timely help. Similarly, Al-Abri *et al*. (2023) argued that public education programmes aimed at increasing awareness about mental health, improving access to mental health resources, and offering a variety of mental healthcare alternatives could be highly effective in recognising and managing depression during the ante, peri, and postnatal periods. Finally, Nwoke *et al*. (2023) underscored the significance of mental health literacy initiatives, noting that enhancing the general understanding of mental health issues is a crucial component in achieving optimal PMH outcomes.

Culturally appropriate screening interventions

Developing culturally sensitive interventions is essential for effectively screening perinatal and postnatal women for mental health issues. Ransing *et al*. (2020) emphasised this point, with Byrnes (2019) also recommending that healthcare facilities implement screening procedures with diverse approved tools and pharmacological and non-pharmacological methods or guidelines for therapy. It appears that other crucial programs also need to be implemented on a grass roots level to train women and health practitioners on mental health issues. For instance, in India, Ransing *et al*. (2020) acknowledge the Mental Health First Aid (MHFA) program that offers training and offers other additional resources for early intervention and prevention of mental disorders among antennal and postnatal women. In a similar vein, Lodha *et al*. (2022) recommended that interventions for perinatal depression should consider the target population's awareness levels and sociocultural perceptions, a point echoed by Agyekum (2023) and Li *et al*. (2021), the latter of whom point out the need to navigate cultural sensitivities, such as strong family-focused values, in many societies. This requires clinicians to balance the woman's need for privacy with family-based expectations of openness and decision-making.

Enhancing access to mental health services

Implementing measures to ensure that mothers have easier and more equitable access to mental health care is a point emphasised in three of the studies reviewed. All authors agree that the inability to access quality mental health services in the community creates a barrier in the prevention and mitigation of mental health issues among women. According to Ransing *et al*.

(2020), the inability and inflexibility to address the specific needs of new mothers create significant barriers to mitigating these issues. They advocate for the implementation of community health programs as a key strategy to support the mental health of pregnant and new mothers. In a survey conducted by Lara *et al*. (2014) in Mexico, 40% of participants identified the lack of available childcare as a barrier to accessing mental health care services. Additionally, 54.8% of participants pointed to affordability as a major challenge in obtaining quality mental health services for both antenatal and postnatal care. Finally, Li *et al*. (2021) found that many mothers were open to receiving relevant health information through anonymous social media apps, preferring these over personal text messages. This suggests a need for flexible and innovative approaches to deliver mental health support and information.

Each of these themes and sub-themes provides a framework to understand the multifaceted aspects of mental health awareness, stigma, barriers to treatment, and strategies for improvement within the context of maternal mental health. In the context of the study, this thematic framework helps to systematically explore and address the gaps and challenges identified in the literature on maternal mental health among women.

2.7 DISCUSSION

The findings of this integrative review have demonstrated evidence of women's knowledge/awareness/understanding of mental health issues that occur during pregnancy and postnatal period. They reveal a significant lack of awareness and understanding of maternal mental health issues among many women, both prenatally and postnatally. This aligns with numerous studies highlighting the gap in knowledge about these critical health concerns.

Findings from Li *et al*. (2021) and Al-Abri *et al*. (2023) indicate that many women, particularly in diverse cultural contexts, have limited knowledge about PMH issues, especially depression. Li *et al*. (2021) found that despite the openness of many mothers to receiving health information through anonymous social media apps, there remains a fundamental lack of basic understanding about perinatal depression. This suggests that despite openness to information delivery methods, the content and depth of understanding are still insufficient. Similarly, Lodha *et al*. (2022) reported that a majority of participants were unfamiliar with the concept of perinatal depression, with 93% having never heard of it. This lack of awareness was further echoed in Al-Abri *et al*. (2023), who found that Omani women had limited awareness of perinatal and postnatal depression, often mistaking depressive symptoms for normal pregnancy discomforts. This misperception leads to underreporting to healthcare providers as many do not recognise these symptoms as indicative of a serious health issue. Abazie and Usoro (2021) also

show that many of the women in their study had poor knowledge of mental health conditions like postpartum depression. In addition, there was a statistically significant relationship between the age of respondents and their knowledge of postpartum depression. This lends weight to the argument that age plays a role in level of understanding of such disorders: 88.4% who were 20–24 years old had poor knowledge, while only 40% of the respondents who were more than 35 years old had a good knowledge of postpartum depression because of their years of experience.

Moreover, Nwoke *et al*. (2023) identified a discrepancy in knowledge levels among African immigrant mothers, with significantly fewer participants aware of prenatal mental health issues compared to postnatal ones. Agyekum (2023) also noted that, in African contexts, participants displayed a limited understanding of mental health disorders, significantly impacting their engagement with mental health services. This discrepancy could be attributed to several factors, such as lack of health education programmes, and the fact that antenatal care initiatives often prioritise postnatal health and infant care, thereby underemphasising prenatal mental health. Li *et al*. (2021) highlighted cultural sensitivities that affect discussions about prenatal mental health, balancing individual privacy with family expectations. This cultural emphasis on physical health and the unborn child's well-being may diminish attention to mental health issues during pregnancy. Furthermore, expectant mothers may perceive postnatal mental health issues as more immediate and relevant, directly impacting their ability to care for their newborns, while prenatal mental health problems may seem less critical if they do not visibly affect the pregnancy. Fellmeth *et al*. (2023) underscored that while awareness of mental health conditions exists, the urgency and impact are often felt more acutely in the postnatal period when the demands of caring for a newborn are high. Healthcare providers may also contribute to this discrepancy by focusing more on postnatal mental health during consultations. As solutions to the numerous issues highlighted here, Abazie and Usoro (2021); Manjrekar and Patil (2018) argue for routine screening and education throughout the perinatal period, suggesting that greater emphasis on prenatal mental health could enhance awareness and understanding among both healthcare providers and expectant mothers.

Contrastingly, certain studies reported higher levels of awareness about PMH, though these instances are less common and often context specific. In Ng'oma *et al*. (2019), the purpose of the study was to explore the perceptions of perinatal women and key maternal care health workers about perinatal depression and the required health service needs for informing the development of culturally sensitive and acceptable psychological interventions. Therefore, the interest of the study was not to assess knowledge gaps but rather to explore the perceptions of

those who were already aware of perinatal depression. Ng'oma *et al*. (2019) found that perinatal depression is a common problem that affects the functioning of women in perinatal period. Most importantly, the study indicated that most of the underlying factors associated of perinatal depression were significantly related to family relationships. In another study based in the Bronx, New York, Byrnes (2019) reported relatively high awareness of mental health problems among the participants. However, the unique characteristics of this population, including the study's convenience sample and self-selection bias, limit the generalisability of these findings to other populations.

Interestingly, the influence of cultural and stigma factors on the perception and management of PMH is well-documented. (Agyekum, 2023); Al-Abri et al. (2023); Fellmeth et al. (2023); Li et al. (2021) all discuss how cultural norms and values shape coping mechanisms and healthcare decisions, whereby cultural stigmas and strong family-centric values significantly impact how women approach mental health issues. Li *et al*. (2021) and Nwoke *et al*. (2023) found that women often prefer to first address mental health concerns within the family due to cultural stigma. This preference highlights the importance of developing culturally sensitive interventions that respect family dynamics while also promoting mental health awareness and support. In terms of social stigma, Lodha *et al*. (2022) found that in India, a substantial proportion of participants believed that a mother does not love her baby if she is depressed after delivery. Such deep-seated cultural misconceptions exacerbate the stigma surrounding PMH, deterring women from seeking necessary support. Abrams et al. (2016); Al-Abri et al. (2023); Fellmeth et al. (2023) similarly reported that fear of stigma and lack of support from partners prevented women from seeking help for mental health disorders during the perinatal period. The need for socio-culturally nuanced understandings in interventions was similarly noted in Lodha *et al*. (2022) and Spedding *et al*. (2018), and in fact, Lara *et al*. (2014) reported that a significant majority of women found it difficult to discuss their depressive symptoms or discomfort, complicating the identification of pre and postpartum depression cases. The reluctance to seek professional help due to fear of stigma and misconceptions about maternal mental health, as noted by Abrams et al. (2016); Li et al. (2021), reflects a broader cultural challenge that requires addressing in mental health interventions.

Several studies highlighted significant barriers to accessing mental health services. These barriers include lack of the knowledge of the issue, logistical issues such as transportation and housing instability, as well as psychological barriers like fear and stigma. Many women stated that they did not seek help for their depressive symptoms, often perceiving them as part of the

normal pregnancy experience or due to the stigma attached to mental health problems. As shown in Abrams et al. (2016); Al-Abri et al. (2023); Lodha et al. (2022), women frequently mistook depressive symptoms for typical pregnancy-related issues, leading to underreporting to their general practitioners. This highlights the need for mental health services that are not only accessible but also sensitive to the unique psychological and practical barriers faced by women during the peri and postnatal periods.

Bledsoe *et al*. (2017) and Ransing *et al*. (2020) identified numerous additional barriers which complicate service utilisation for many women, including transportation, housing instability, and competing demands, particularly those from low-income and minority backgrounds. These practical challenges are often compounded by psychological barriers such as fear and stigma associated with seeking mental health care. Nakku *et al*. (2016) and Spedding *et al*. (2018) also highlighted significant knowledge gaps and barriers to accessing mental health services, stressing the need for interventions that address these gaps and facilitate access to care, particularly in resource-constrained settings. In Manjrekar and Patil (2018), lack of awareness, lower socioeconomic status, lack of services, cultural beliefs as well as stigma were the most commonly cited barriers to accessing mental health services, with Franks *et al*. (2017) noting relational factors as one of the main underlying causes of mental problems among pregnant women. This point is repeated in Bledsoe *et al*. (2017), who found that despite some participants seeing their parents as support, the majority viewed them as barriers to accessing psychiatric services. Evidently then, family-focused interventions will go a long way towards preventing and treating mental health problems among women during the pre and postnatal periods.

2.8 IMPLICATIONS FOR PRACTICE AND POLICY

The integration of these findings suggests several practical implications. First, there is a pressing need for public education programs tailored to enhance awareness and understanding of PMH, as suggested by Agyekum (2023); Al-Abri et al. (2023); Bledsoe et al. (2017); Li et al. (2021); Ng'oma et al. (2019). These programs should be culturally sensitive appropriate, respecting and integrating the sociocultural values and beliefs of the target populations.

Second, healthcare providers, especially midwives and primary care physicians, play a crucial role in bridging the knowledge gap. Abazie and Usoro (2021) argue that midwives should be trained to identify postpartum depression and educate women about it during antenatal and postnatal visits. This aligns with the call from Manjrekar and Patil (2018) for routine mental health screening during antenatal visits, particularly in rural areas with low awareness levels. Bledsoe et al. (2017); Lara et al. (2014), and Ng'oma *et al*. (2019) emphasise

the fact that health care systems at the primary levels should include treatment for mental disorders.

Third, family-focused interventions, as emphasised by Ng'oma *et al*. (2019) and Franks *et al*. (2017), should be prioritised to address the relational factors influencing maternal mental health. These interventions should aim to balance the need for individual privacy with family involvement in care and decision-making.

Fourth, addressing the practical and psychological barriers to service utilisation is critical. Interventions should not only be culturally appropriate but also address the logistical challenges faced by women, particularly those from low-income and minority backgrounds, as noted by (Bledsoe et al., 2017); Spedding et al. (2018), who suggest that interventions should be designed to overcome these barriers, providing accessible, affordable, and culturally sensitive mental health care. This might include transportation assistance, flexible appointment scheduling, and community-based support systems.

Finally, enhancing mental health literacy is crucial for empowering women to recognise symptoms and seek help. Nwoke et al. (2023); Ransing et al. (2020) highlight the need for increased literacy among both perinatal women and healthcare providers to improve early detection and intervention outcomes.

2.9 FUTURE RESEARCH DIRECTIONS

Given the gaps identified in this review, particularly the limited research on maternal mental health from women's perspectives in certain regions, there is a clear need for future research to focus on these areas. Developing a comprehensive understanding of maternal mental health care globally requires targeted studies, especially in regions like the Kingdom of Saudi Arabia (KSA) and other underrepresented areas, encompassing both prenatal and postnatal Phases. Such research is crucial to bridging these knowledge gaps and informing the development of effective interventions and policies. Undertaking this research is essential to address these critical gaps in knowledge and improve maternal mental health outcomes for women throughout the perinatal and postanal period.

2.10 STRENGTH AND LIMITATIONS

In this review, the application of PRISMA guidelines is a fundamental merit towards evaluating the reviewed publications of the study. It enabled a thorough assessment of the overall quality of the literature and permits readers to identify the strengths and limitations of a

particular study. In addition, PRISMA guarantees the ability of future researchers to replicate this review's approach. However, limitations include the absence of publications in languages other than English. It is vital to consider these in future studies, if possible, to broaden the insights gained on the current state of knowledge. Finally, several of the included studies were conducted using convenience sampling, some had only a single setting, and a number of them did not report response rates.

2.11 GAP IN THE LITERATURE

The comprehensive review of the literature presented in the current chapter highlights a significant gap in the context of Saudi Arabia. The literature review focused on the knowledge, attitudes, and experiences of pregnant and postpartum women regarding maternal mental health issues such as perinatal and postpartum depression (PPD). Despite the increasing global attention to maternal mental health, there is a scarcity of research specifically addressing the following within the Saudi context:

Awareness and Recognition: One of the critical gaps identified in the literature is how Saudi women perceive, recognise, and understand symptoms of prenatal and postpartum depression. This aspect is crucial for developing effective public health strategies and interventions tailored to the Saudi context. However, the literature review reveals no dedicated studies exploring the awareness and recognition of perinatal and postpartum issues among women in Saudi Arabia. Most existing research in this domain tends to aggregate data from Europe, and Africa countries. There was only one study from the Middle East (Oman), which may not accurately reflect the unique cultural, social, and healthcare environments of Saudi Arabia.

Cultural and Social Influences: There is insufficient exploration of how cultural, social, and religious factors influence Saudi women's understanding and experiences of maternal mental health issues. Cultural norms and stigmas surrounding mental health, family dynamics, and social expectations significantly impact women's willingness to seek help and their overall mental health experiences. Current studies often generalise findings without delving into these culturally specific influences.

Access to Support and Services: Research on Saudi women's access to mental health services, their experiences with seeking support, and the barriers they face is non-existent. The existing literature does not adequately capture the lived experiences of women navigating the healthcare system for maternal mental health issues in Saudi Arabia.

2.12 CONTRIBUTION OF THE CURRENT STUDY

This PhD study aims to fill these gaps by focusing on women's perspectives to gain an in-depth understanding of Saudi women's knowledge, attitudes, and experiences regarding maternal mental health, and how cultural and social factors influence their perceptions and behaviours. This involves exploring their awareness of perinatal and postpartum depression, barriers to seeking help, and the support systems available to them.

2.13 CONCLUSION

In summary, this chapter synthesises recent insights, highlighting significant gaps in knowledge and awareness about perinatal/postnatal mental health issues. The findings indicate that cultural stigma and practical barriers significantly influence women's experiences and access to mental health care. Addressing these issues requires a multifaceted approach that includes public education, culturally sensitive interventions, enhanced training for healthcare providers, and robust support systems. Future research should continue to explore and address these complexities to improve mental health outcomes for perinatal and postnatal women globally. The absence of studies addressing maternal mental health awareness within the Kingdom of Saudi Arabia (KSA) represents a significant gap, emphasising the need for targeted research initiatives aimed at exploring contextual nuances and crafting culturally tailored interventions. Further research is needed to deeply explore women's awareness of maternal mental health problems in KSA. These issues will be further explored when presenting this study's design detailed in the methodology chapter.

Chapter 3: Health Care Providers' Awareness of Mental Health in Pregnancy: An Integrative Review

3.1 INTRODUCTION

In Chapter Two, the foundation for this thesis was laid by exploring the various perspectives held by women in terms of their familiarity with mental health issues that may arise during pregnancy. This is supplemented in this current chapter with an integrative review of the literature on healthcare providers' (HCPs) views of the same to better understand the field of maternal mental health.

The chapter begins by describing the process by which the review was conducted. This is followed by a tabular presentation of the extracted data based on the search criteria, grouping this data by category. Having presented the data in this fashion, the remainder of the chapter is dedicated to a thorough summary and description of the literature by theme, highlighting its importance to this present study.

3.2 METHODS

This review was conducted using an integrative method, as described by Whittemore and Knafl (2005), who note that it is best suited to studies that seek to comprehend complex phenomena, as in the social sciences, via its integration of multiple methodologies. Additionally, the review process adhered to the PRISMA guidelines (Moher *et al*., 2009) to ensure a transparent and systematic approach to the selection, analysis, and reporting of the included studies, as noted in the previous chapter. They also highlight that allowing for various research designs enables the gathering of robust datasets that are then better placed to guide clinical practice and policy. This openness to diverse methodologies allows for a clear definition of concepts, assessment of existing evidence, and identification of knowledge gaps (Whittemore & Knafl, 2005). To enhance rigor, a systematic and explicit methodology was applied throughout the review process following the guidelines set by Whittemore and Knafl (2005), which were fully described in the review presented in the previous chapter.

3.2.1 Problem Identification

The overall aim of this integrative review is to explore, appraise and critically synthesise the available evidence on the current state of the HCPs' knowledge of the mental health status of expecting mothers during the antenatal period. Specifically, this review examines how the level of care provided by HCPs either supports or detracts from the mental well-being of these women.

The literature review question is as follows: How do healthcare providers knowledge, understand and perceive mental health issues in women during the antenatal period?

3.2.2 Search Strategy

The first step comprised a computerised search of the literature, conducted using the following health and social care databases: CINAHL, EMBASE, MEDLINE and PsycINFO. The literature search was undertaken from articles published between 2011 to 2021. Searches were conducted in April 2021 to ensure that the most up-to-date evidence was captured. Manual searches of references were also utilised to identify additional relevant studies and ensure completeness. Due to the duration over which the thesis was undertaken, an updated search of the literature was then conducted in June 2024 to identify any relevant studies published since 2021 or any previously not identified during the original search. The search terms and Boolean operators used for the literature searches are shown in Figure 3.1.

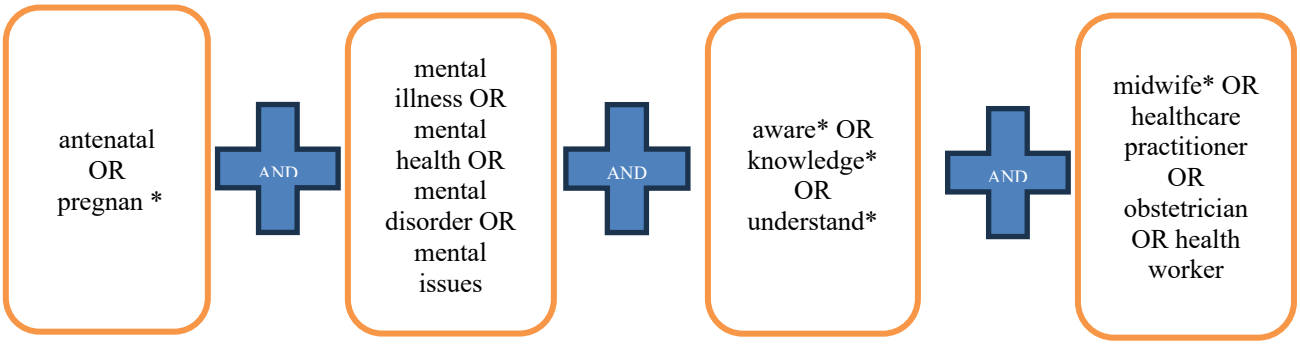

Figure 3.1 Search terms used for HCP literature search

Inclusion criteria for articles were those that:

1. Focused on healthcare providers' awareness and/or knowledge of mental health problems for pregnant women.
2. Included participants that were healthcare workers.
3. Were written in the English language.

4. Were primary published research.

Exclusion criteria included:

5. Studies that were not primary research such as conference abstracts, textbooks and commentaries.

3.2.3 Search Outcomes

The searches of the electronic database revealed a total of 1691 articles. After removing duplicate articles, 803 studies remained. Following the review of the titles and abstracts, 737 papers were removed as not relevant to this study, leaving 66 papers that underwent full-text review. Few of these studies assessed healthcare providers' knowledge of mental health issues during pregnancy, and therefore most of the articles were rejected. This left 24 papers that were eligible and so included in the final review according to the inclusion and exclusion criteria. Figure 3.2 shows the PRISMA flow diagram of the entire process from initial search to final collation of studies.

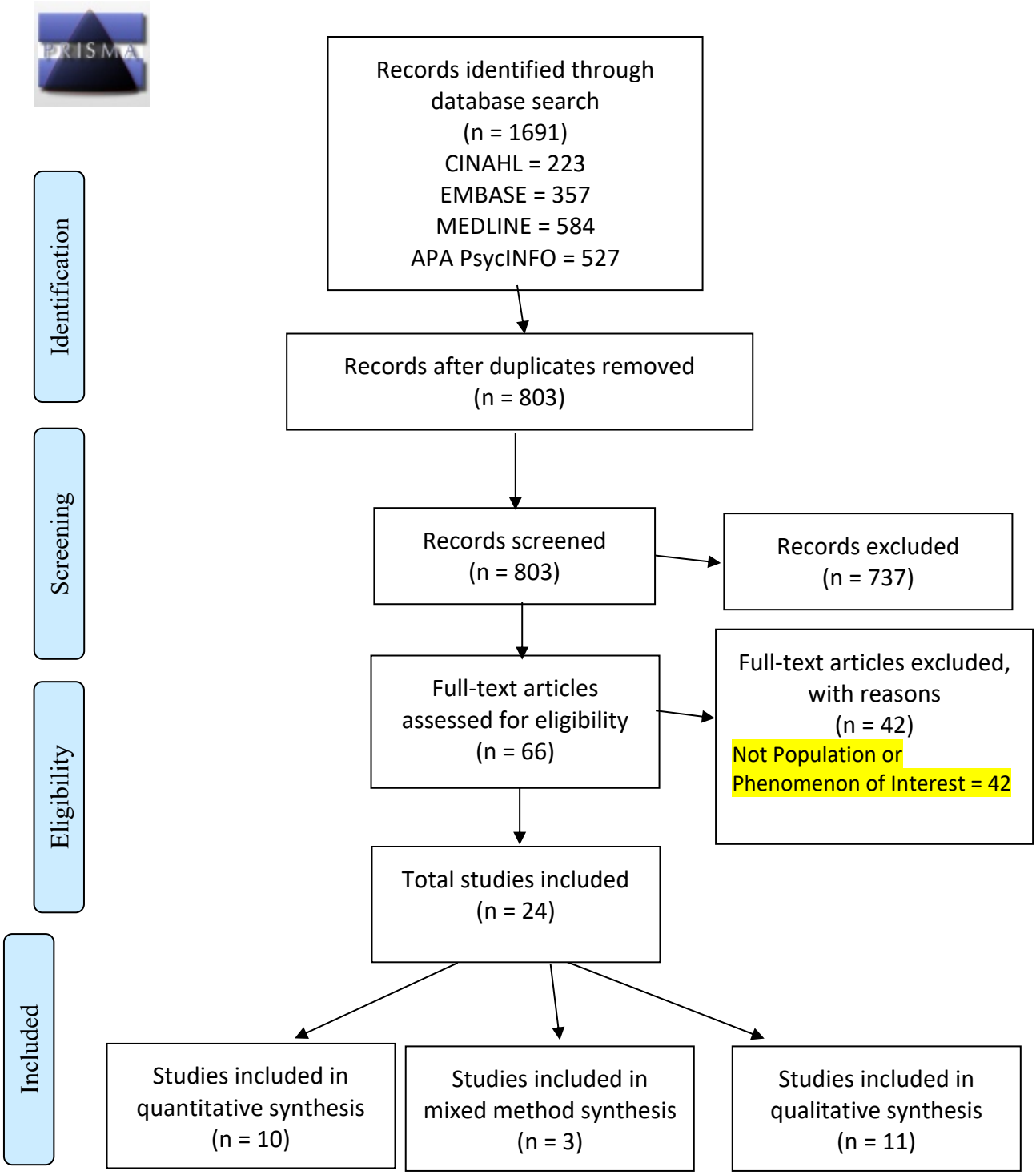

Figure 3.2 PRISMA flow diagram (HCP)

3.2.4 Quality Appraisal

The quality of the included papers was evaluated using the Critical Appraisal Skills Programme (CASP, 2018) checklists. The CASP checklist for qualitative studies was applied to evaluate qualitative research, and the CASP checklist for cohort studies was used to assess quantitative research. For mixed methods studies, the Mixed Methods Appraisal Tool (MMAT)

was employed (Hong *et al*., 2018). Each study, whether qualitative, quantitative, or mixed methods, was assessed against the individual criteria provided in Appendix B.

3.3 DATA EXTRACTION AND SYNTHESIS

A data extraction table was formulated to structure the collection of relevant data from each included study. The following domains were included in the table: authors, year of publication, country, study design, sample size, the profession of the participants, outcomes and key findings. Tables 3.1, 3.2 and 3.3, provide the summary of characteristics of the 24 studies included in this review. No studies were excluded based on the quality appraisal.

Table 3.1

Qualitative Studies

Author	Country, setting, sample	Aims	Research design, method	Key findings
Abrams *et al.* (2016)	Vietnam, 12 primary health workers (PHWs), 14 mothers in rural communities.	Investigate knowledge and perceptions of PMDs in rural Vietnam.	Qualitative, semi-structured interviews with grounded theory analysis.	1. PHWs reported having almost never having treated a woman with a PMD. 2. Anecdotal evidence from the women interviewed suggests that there are incidents of mental disorders during the perinatal period that go largely unaddressed. 3. Over half of mothers also reported having no firsthand knowledge of women experiencing PMDs. 4. PHW highlighting a need for training in screening and treatment.
McCauley *et al*. (2019)	Ghana (Accra), 24 healthcare providers (20 doctors, four nurse-midwives.	Investigate knowledge, attitudes, and perceptions of routine screening for maternal mental health.	Qualitative (descriptive) study with semi-structured interviews and focus group discussion. Purposive sampling.	1. Most healthcare providers recognised the importance of maternal mental health. 2. A positive suggestion was the introduction of a culturally appropriate mental health screening tool. 3. Compromised mental health was often viewed as a "spiritual issue" and not routinely screened for by healthcare providers or requested by women. 4. Barriers to providing quality maternal mental health care included a lack of trained staff and limited time.
Silverwood *et al*. (2019)	UK, 23 healthcare professionals (10 GPs, seven midwives, five health visitors, one obstetrician) in West Midlands.	Explore perspectives and experiences in identifying and managing perinatal anxiety (PNA).	Qualitative study with semi-structured interviews. Purposive sampling.	1. Awareness and understanding of PNA among HCPs varied, with differing opinions on what constitutes "normal" pregnancy anxiety. 2.HCPs noted the challenges in identifying PNA, with mixed views on the effectiveness of case-finding tools. 3. Opportunistic identification was seen as crucial for diagnosis. 4. Care for women with PNA was reported as fragmented, with poor interprofessional communication.
Machmud *et al.* (2020)	Indonesia, 15 respondents (One from Ministry of Health, five midwives, three pregnant women and their families).	Explore perceptions and barriers related to mental health during pregnancy.	Qualitative study with in-depth interviews, thematic analysis. Consecutive sampling.	1. Midwives struggled with defining mental health. 2. Social support, especially from midwives, is crucial. 3. Existing mental health programs are underutilized in primary facilities.

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Al-Abri *et al*. (2023)	Oman (Muscat), 15 HCPs, 13 pregnant, two postpartum women.	Explore views, experiences on anti, peri, and postnatal depression from the Middle East perspective.	Qualitative descriptive, semi-structured interviews, thematic analysis. Purposive sampling.	1. HCPs indicated that Omani women have limited/poor awareness of anti, peri and postnatal depression. 2. HCPs had limited awareness about the nature of anti, peri and postnatal depression due to their lack of experience and training in providing care. 3. Mothers often believed that the depressive symptoms they experienced were part of their pregnancy symptoms, so they did not tell their GPs. 4. Women stated that they were hesitant to seek help for mental health disorders for fear of being stigmatised and/or stereotyped.
Fletcher *et al*. (2021)	Ireland, ten midwives.	Explore midwives' experiences of caring for women's emotional and mental well-being during pregnancy.	Qualitative descriptive design using semi-structured interviews with thematic content analysis. Purposive sampling.	1. Midwives acknowledged that women's emotional health is as vital as their physical health. 2. Participants used informal structures and open language to discuss mental health. 3. All participants agreed that additional support and further education and training were necessary. 4. Service fragmentation and lack of continuity were major barriers to integrating PMH care into midwifery.
Jawed *et al*. (2021)	Pakistan (Karachi), eight HCPs (three nurses and five doctors).	Assess knowledge and practices of healthcare professionals dealing with depressive symptoms in mothers.	Qualitative exploratory study design using semi-structured interviews with content analysis. Purposive sampling.	1. The findings highlight gaps in the curriculum for doctors and nurses, limiting HCPs in mental health care. 2. Knowledge levels varied among nurses and physicians. 3. Participants could describe depression symptoms along with probable risk factors (basic knowledge). 4. There was a noticeable absence of protocols for screening, treating, and managing mental disorders.
Nakidde *et al*. (2023)	Uganda, 22 healthcare professionals.	Investigate knowledge, practices, and challenges faced by maternity care workers in screening and managing maternal mental health disorders.	Qualitative cross-sectional study using semi-structured interviews and content analysis. Purposive sampling.	1. Lack of specialised training and protocols. 2. Screening mainly based on history and examination. 3. Challenges include training deficits, poor referral systems, and stigma.
Navarrete *et al*. (2022)	Mexico (Mexico City), 20 HCPs.	Explore perceptions and knowledge of perinatal depression and analyse barriers to its care in primary centres.	Qualitative exploratory study using semi-structured interviews and thematic analysis. Purposive sampling.	1. Most primary care personnel were unaware of the official guidelines recommending maternal mental health care during the perinatal period. 2. A significant barrier to implementation was health professionals' biased, stereotyped perceptions of perinatal depression, motherhood, and women's roles. 3. Obstacles included the high workload, divided care responsibilities, and poor communication between providers.

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				4. Women were not referred to mental health services in a timely manner.
Shahid Ali *et al*. (2023)	Pakistan (Karachi), ten midwives.	Explore midwives' perceptions, understanding, and experiences regarding PMH.	Qualitative descriptive exploratory design using semi-structured interviews and content analysis. Purposive sampling.	1.Midwives lacked understanding and skills in PMH. 2. Most of the participants realised that PMH is an essential component of care. 3. Midwives themselves recounted their beliefs that PMHP occurs as a result of the "evil eye" or the superstition that a supernatural power controls individuals showing PMHP.
Xiao *et al*. (2023)	China (Shenzhen), 13 obstetric staff (two obstetricians, three midwives, eight nurses).	Explore perceptions and attitudes towards screening for perinatal mental disorders and identify needs and motivations.	Qualitative exploratory study using semi-structured interviews and content analysis. Purposive sampling.	1.Staff lacked knowledge and skills in PMH. 2. Participants were unprepared to screen pregnant women for mental health disorders. 3. Screening implementation was hindered by staff shortages and insufficient time. 4. Public stigma towards mental health disorders remains a barrier to accepting PMH screening.

Table 3.2

Quantitative Studies

Author	**Country, setting, sample**	**Aims**	**Research design, method**	**Key findings**
Hauck *et al*. (2015)	Australia, 238 midwives.	Explore midwives' knowledge and attitudes towards mental health disorders in childbearing women and their perceived learning needs.	Quantitative (cross-sectional) study; Survey, four vignettes. Convenience sampling.	1. Only 37.6% felt well-equipped to support women. 2. 50.2% reported insufficient access to information. 3.Variable knowledge scores; highest for depression, lowest for schizophrenia. 4. Strong need for further education.
Jones *et al*. (2011)	Australia, 815 midwives.	Assess midwives' knowledge and learning needs regarding antenatal and postpartum depression.	Quantitative study; Survey	1.Key knowledge deficits related to onset, assessment, and treatment. 2.Need for continuing professional education to improve competency in the assessment and care of women suffering depression.
Carroll *et al*. (2018)	Ireland, 438 midwives.	Identify midwives' competency, confidence, skills, and educational priorities in PMH problems.	Quantitative (exploratory descriptive) study; Self-completed survey.	1.Limited knowledge overall; better on perinatal depression and anxiety. 2. Lack of skill in discussing sensitive issues. 3.Midwives adopted a selective approach to screening for PMH problems.

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Noonan *et al*. (2018)	Ireland, 157 midwives.	Determine midwives' knowledge, confidence, attitudes, and perceived learning needs related to PMH.	Quantitative (cross-sectional) study; Questionnaire, Survey. Convenience sampling.	1.High knowledge (71.1%) and confidence (72%) in identifying depression and anxiety. 2. Lower confidence in managing women. 3. Desire for broader education on PMH.
Rothera and Oates (2011)	UK, 768 health professionals.	Examine health professionals' views on the identification, treatment, and management of mental health disorders in childbearing women.	Quantitative study; Four vignettes, Survey.	1.Significant knowledge gaps in identification and management. 2. 65% lacked specific training in PMH. 3. 85% requested additional support and training 4. Two-thirds of respondents agreed that primary health professionals should manage mild to moderate disorders.
Adjorlolo *et al*. (2019)	Ghana, 309 health professionals.	To investigate involvement, knowledge, attitudes, and learning needs of nurses and midwives in promoting maternal mental health.	Quantitative (cross-sectional) study; Questionnaires. Convenience and purposive sampling.	1. 94% of participants reported involvement in promoting maternal mental health. 2. Knowledge about maternal mental health was significantly correlated with involvement in its promotion ($p < .05$), unlike attitudes towards it. 3. Between 83% and 94% showed significant interest in professional development education in various maternal mental health areas. 4. Enhancing the mental health knowledge base of nurses and midwives could significantly boost maternal mental health promotion.
Higgins *et al*. (2018)	Ireland, 186 public health nurses.	To identify knowledge, skills, and practices of public health nurses in PMH and establish education needs.	Quantitative (descriptive) study; Online survey.	1.Limited knowledge and skills in addressing sensitive issues. 2. 40% had no prior education in PMH. 3. Higher education led to better knowledge and confidence. 4. 5.70% indicated that they used screening tools.
Magdalena and Tamara (2020)	Poland, 111 midwives.	To evaluate midwives' knowledge of perinatal and postnatal mental health disorders after implementing a new standard of care.	Quantitative study; Survey.	1.Only 20% of respondents felt educationally prepared to screen and care for women with antenatal depression and/or PPD. 2.Midwives rated their knowledge and skills in assessing patients' mental states as the lowest. 3.Additional training is necessary to enhance midwives' competency.
Ransing *et al*. (2020)	India, 270 perinatal women, 42 nursing providers, 20 medical practitioners.	Examine knowledge gap regarding perinatal depression among service providers and users.	Quantitative (cross-sectional). Semi-structured questionnaires for women, online survey for providers. Convenient sampling.	1. 91.49% had no knowledge of depression. 2. Knowledge varied among NPs, MPs, and PWAs regarding: • Viewing PD as a normal pregnancy part: NPs (71.52%), MPs (10%), PWAs (17.39%). • Biological causes of PD: NPs (45.23%), MPs (70%), PWAs (26.03%).

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				• Usefulness of antidepressants for PD: NPs (23.80%), MPs (70%), PWAs (21.73%). 3. Misconception about aetiology and management among providers.
Poo *et al*. (2023)	Singapore, 55 doctors.	To assess doctors' knowledge, attitudes, and perceptions of PMH.	Quantitative; online survey. Convenience sampling.	1. 60.0% unaware of adverse impacts of poor PMH. 2. 83.7% lacked confidence in providing PMH advice. 3. 65.5% did not routinely screen for PMH disorders. 4. Significant increase in PMH discussion from antenatal (10.9%) to postnatal (34.5%) ($p<0.001$). 5. 98.2% supported standardised PMH guidelines, education, and routine screening

Table 3.3

Mixed Methods Studies

Author	**Country, setting, sample**	**Aims**	**Research design, method**	**Key findings**
Patabendige *et al*. (2020)	Sri Lanka, 152 healthcare providers (31 medical officers, 86 nurses, 34 midwives).	To study awareness regarding mental health problems during pregnancy and postpartum among healthcare providers.	Mixed methods; Quantitative (cross-sectional) and qualitative study.	1. Higher knowledge scores associated with providers over 35 years ($p = 0.02$). 2. 42.8% had heard of EPDS. 3. Good overall awareness, but poor application of knowledge. 4. Identified gaps in health education for pregnant women, insufficient in-service training, infrastructure improvements.
McCauley *et al*. (2011)	Australia, 161 midwives.	To explore midwives' perceptions of their mental health skills, knowledge, and experiences with women with mental illness in the perinatal period.	Mixed methods; Quantitative (exploratory descriptive) and qualitative study. Convenience sampling.	1. Midwives lacked mental health skills and knowledge, felt unprepared and uncomfortable with mental health care. 2. Limited knowledge of resources. 3. Over 60% reported negative responses and avoidance. 4. 93% wanted more training.
Savory *et al*. (2022)	UK, 145 midwives.	To explore midwives' skills, knowledge, and experiences of supporting women's mental health.	Mixed methods: Quantitative and qualitative study, focus groups. Purposive sampling.	1. Majority cared for women with mental health issues, mainly anxiety (95%) and depression (87%). 2. Informal mental health assessments were common. 3. 31.7% had recent training; 21.4% found it helpful. 4. Barriers included time, continuity, and perceived support.

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3.4 CHARACTERISTICS OF STUDIES

The primary findings of this integrative review were derived from the synthesis of existing data on healthcare providers' understanding of mental health issues in perinatal women. The characteristics of all 24 studies, including 11 qualitative, ten quantitative, and three mixed-method studies, are summarised in the tables above. These studies were conducted across fifteen different countries: Ireland (n=4), the UK (n=3), Australia (n=3), Ghana (n=2), Pakistan (n=2), and one study only in the Middle East (specifically Oman).

3.4.1 The Qualitative Studies

The articles included in the literature review were examined in relation to the list of criteria to assess the methodological quality of a study and to determine the extent to which a study has addressed the possibility of bias in its design, conduct and analysis (Ma *et al*., 2020). This was done to identify the strengths and limitations of the included studies, with particular focus on the degree to which any weaknesses in the study designs may have affected the sensitivity of the results (Lockwood *et al*., 2015).

In terms of the tools used, the majority of the qualitative studies employed semi-structured interviews for data collection: two used focus groups, and one study utilised both interviews and focus groups. The sample sizes of healthcare providers (HCPs) in the qualitative studies ranged from 8 to 24 participants.

In terms of their robustness, all 11 qualitative papers provide descriptions of themes and report patterns identified by the researchers, but the research designs and epistemological approaches varied. There was one study undertaken using a traditional Grounded Theory approach (Abrams *et al*., 2016); five used a constant comparison analysis (Jawed et al. (2021); Nakidde et al. (2023); (Shahid Ali et al., 2023); Silverwood et al. (2019); Xiao et al. (2023); one used framework analysis (McCauley *et al*., 2019); one used source analysis and thematic analysis (Machmud *et al*., 2020); and the other studies were used thematic analysis.

However, some of the qualitative studies were found to have certain limitations in the methodological rigour and quality of reporting. For instance, epistemological approaches were not specified in each of the 24 studies included in the literature review. Thus, it was difficult to assess the appropriateness of strategies used to ensure trustworthiness when assumptions about how knowledge was produced in the research is unclear. And whilst some authors provided more detailed and complete reports, others included only a brief description. As examples, Abrams et al. (2016); McCauley et al. (2019); Silverwood et al. (2019), and Silverwood *et al*.

(2019) each provided extensive detail and a thorough description of the various strategies employed to demonstrate quality within their research. The exceptions in this regard were Machmud *et al*. (2020) and Shahid Ali *et al*. (2023), who did not adequately detail the research analysis process.

In terms of data analysis, eight of the articles stated that the data had been reviewed or discussed amongst more than one researcher, consultant or auditor (Abrams et al. (2016); Jawed et al. (2021); McCauley et al. (2019); Nakidde et al. (2023); Navarrete et al. (2022); Savory et al. (2022); Silverwood et al. (2019); Xiao et al. (2023). In addition, Tong *et al*. (2007) consolidated criteria for reporting qualitative research (COREQ), a 32-item checklist for interviews and focus groups was used for the following research (Fletcher *et al*., 2021). Another point worth mentioning is that triangulation was used as a strategy for facilitating reflexivity and strengthening analysts' understandings of the data (Al-Abri *et al*., 2023; Machmud *et al*., 2020; McCauley *et al*., 2019; Nakidde *et al*., 2023). Finally, in Abrams *et al*. (2016) and Nakidde *et al*. (2023) peer debriefing or the engagement of external experts was done to create consensus and consistency within the coding structures, and in Xiao *et al*. (2023), the bracketing strategy was adopted to increase the credibility of the data and reduce potential biases.

3.4.2 The Quantitative Studies

The 10 quantitative studies selected in this review are here critiqued in terms of their approaches to sample selection, recruitment of participants, response rate and data analysis. First, most of the quantitative studies were cross-sectional surveys, with sample sizes ranging from 55 to 815 participants. Two of the articles mentioned that sample size calculation was used to determine the desired sample size to ensure sufficient statistical power to detect significant associations/clusters in the data (Hauck *et al*., 2015; Jones *et al*., 2011). However, in Carroll *et al*. (2018) and Higgins *et al*. (2018), it was difficult to determine the sample size and response rate due to the absence of a national database being used.

In terms of participant selection, five articles mentioned that they used a convenience sampling technique (Adjorlolo *et al*., 2019; Hauck *et al*., 2015; McCauley *et al*., 2011; Poo *et al*., 2023; Ransing *et al*., 2020) which generally led to non-representative or biased samples. Results from these studies cannot therefore be used to make assumptions about the characteristics of the target population (Groves *et al.* 2004).

In terms of response rates, in Rothera and Oates (2011) this was 26.7%, and the authors did not mention the reason for such a low response. Low response rates were also present in McCauley *et al*. (2011) and Patabendige *et al*. (2020) – 30% and 50% respectively. In addition,

in four articles, the sampling technique was not mentioned (Carroll *et al*., 2018; Jones *et al*., 2011; Patabendige *et al*., 2020; Rothera & Oates, 2011).

Across the studies, the number of data collection sites varied. Four of them used multiple locations to recruit participants (Adjorlolo *et al*., 2019; Carroll *et al*., 2018; McCauley *et al*., 2011; Noonan *et al*., 2018), two used an online survey (Higgins *et al*., 2018; Ransing *et al*., 2020), and another two only collected data using one location for recruitment (Hauck *et al*., 2015; Jones *et al*., 2011).

Different analysis techniques were used according to the instruments used, comparison groups and measures of relationships among variables. In terms of data analysis, all articles used statistical analysis software programs to manage numerical data such as IBM SPSS and Epi - Info 7 WHO. Also, descriptive statistics, including frequency distributions, means and standard deviations were generated to describe the data, and significance values for cross-tabulations were calculated using Pearson's Chi-square test ($\chi 2$). Jones *et al*. (2011) and Noonan *et al*. (2018) used a process to test the accuracy of data coding and entry by undertaking a 10% random comparison between the computerised data and the original data. In Magdalena and Tamara (2020), multiple regression analysis was used to assess the associations between the participants' characteristics and their knowledge of antenatal and postpartum depression.

Moving to the different tools used to measure mental health awareness in health care workers, in the research conducted by Jones *et al*. (2011), 20 multiple-choice items were chosen to measure the knowledge of the onset, incidence, co-morbidity, symptoms, associated risk factors, assessment, and treatment strategies of antenatal depression and PPD. Items were drawn from Beyondblue's National Baseline Survey (a Health Professional Knowledge Questionnaire), and items were also developed from a review of the literature and the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision. The internal consistency for the new 20-item survey was also obtained ($r = 0.69$). It is important to note here that (Hinton et al., 2014; Straub et al., 2004)) have suggested four cut-off points for reliability using Cronbach's alpha: excellent reliability (0.90 and above), high reliability (0.70-0.90), moderate reliability (0.50-0.70) and low reliability (0.50 and below). Cronbach (1951); Hajjar (2018); Straub et al. (2004) suggest that a value of Cronbach's alpha between 0.6 and 0.8 is acceptable.

In their study, Magdalena and Tamara (2020) used the questionnaire of Antenatal and Postpartum Depression Knowledge adopted from Jones *et al*. (2011) to test the level of awareness of mental health by midwives. Cronbach's alpha was reported as 0.69, which is

consider fairly reliable. Questions related to a hypothetical case study of a depressed woman were also asked to assess the level of awareness of this disorder.

In Adjorlolo *et al*. (2019), two tools were used in the survey to measure the awareness of mental health issues: Mental Health Involvement Scale (MMHIS) with Cronbach's alpha of .80, and Maternal Mental Health Knowledge with Cronbach's alpha of .61. In Noonan *et al*. (2018), the survey used the PMH Awareness (PMHA) scale. Cronbach's alpha reported as 0.79. with this tool. They also used Professional Issues in Maternal Mental Health Scale with Cronbach's alpha reported as 0.81. These tools were particularly effective in measuring the level of awareness owing to their construct and structural validity, as well as their reliability.

Hauck *et al*. (2015) used a customised survey instrument to measure the level of awareness with two scores. A general knowledge score was drawn from current clinical guidelines of the study hospital (Women and Newburn Health Service, 2011), and credible websites such as BeyondBlue (http://www. beyondblue.org.au/) and PsychCentral (Psych Central, 2013, http:// psychcentral.com). Secondly, a vignette knowledge score showed a composite of symptoms from the International Classification of Diseases (WHO, 2008). However, the weakness in this study was that this was not tested for internal consistency and construct validity. Carroll *et al*. (2018), Higgins *et al*. (2018), and Patabendige *et al*. (2020) also used customised surveys in their studies, which were developed by the research team based on available research in the area and consultation with practitioners. However, despite clinical experts in PMH piloting the survey, they did not test its validity or reliability.

Ransing *et al*. (2020) used a Perinatal Depression Monitor for a 26-item survey designed to measure population-based awareness, attitudes, and knowledge regarding PMH scales. This was based on an Australian population-based survey on PMH which was modified to be more suitable for the Indian cultural context according to the guidelines of Highet et al. (2011); (Kingston et al., 2014).

In McCauley *et al*. (2011), they used a questionnaire modified from two instruments that had been previously developed by (Betrus & Hoffman, 1992) and (Brown & Burro, 1989). The content validity was obtained using a post evaluation by a group of experts.

Rothera and Oates (2011) used four vignettes to measure the level of mental health awareness among participants. The vignettes were informed by a wide evidence base, including national guidelines and targets, prior research, and the findings from interviews and focus groups conducted earlier in their research process. This method was particularly effective in its

ability to collect information simultaneously from large numbers of participants, to manipulate a number of variables at once in a way that may not be possible in observation studies, as well as having the added advantage of not falling prey to the observer effect. The use of vignettes, however, was limited by the relatively low response rate. Additionally, the vignettes neglected to include interaction and feedback, thereby compromising their content validity.

Generally, the quality of the research included in this literature review was varied. Though methodological and reporting concerns have been identified in relation to several of the articles, this summary provides a more comprehensive picture of the current state of knowledge represented in the literature than the reviewed research publications individually.

3.5 DATA ANALYSIS

The data analysis stage involved categorising, coding, and summarising the 24 reviewed papers to facilitate the organisation and synthesis of the literature The papers were primarily grouped according to their research design and their discussion on the perception of antenatal mental health, as well as the facilitators and barriers to maternal mental health care. The qualitative thematic analysis was an iterative process, involving the merging of codes and the creation of themes and sub-themes to achieve a higher level of interpretation and abstraction. In this review, two overarching categories of theme were deduced: “Personal level” and “Advanced level”, each with four subthemes. For “Personal level”, these were “Knowledge”, “Skills”, “Decision making” and Attitude”, and for “Advanced level”, these were “Continuous Professional Development”, “Organisation of Care”, “Referral” and “Support” (see Table 3.4).

Table 3.4

Themes and Subthemes Identified from the Studies Included in the Review

Author/s	**Personal level**				**Professional level**			
	Knowledge	Skills	Decision making	Attitude	Continuous Professional Development	Organisation of care	Referral	Support
Hauck *et al.* (2015)	✓	✓	✓	✓	✓		✓	
Jones *et al.* (2011)	✓	✓	✓		✓			
Carroll *et al.* (2018)	✓	✓	✓		✓		✓	
Noonan *et al.* (2018)	✓		✓	✓	✓		✓	✓
Rothera & Oates (2011)	✓	✓		✓	✓		✓	
Adjorlolo *et al.* (2019)	✓		✓	✓	✓		✓	
Higgins *et al.* (2018)	✓	✓	✓		✓		✓	✓
Magdalena & Tamara (2020)	✓	✓	✓		✓			✓
Ransing *et al.* (2020)	✓				✓			✓
Abrams *et al.* (2016)	✓				✓		✓	✓
McCauley *et al.* (2019)	✓	✓		✓	✓	✓		✓
Silverwood *et al.* (2019)	✓				✓		✓	
(Machmud *et al*., 2020))	✓				✓			✓
Patabendige *et al.* (2020)	✓		✓		✓	✓		
McCauley *et al.* (2011)	✓	✓		✓	✓	✓	✓	
Al-Abri *et al.* (2023)	✓	✓	✓		✓	✓	✓	✓
Fletcher *et al.* (2021)	✓	✓	✓	✓	✓	✓	✓	✓
Jawed *et al.* (2021)	✓	✓	✓		✓	✓		
Nakidde *et al.*, (2023)	✓		✓		✓		✓	✓
Navarrete *et al.* (2022)	✓		✓	✓	✓	✓	✓	
Shahid Ali *et al.*, (2023)	✓	✓		✓	✓			
Xiao *et al.* (2023)	✓	✓	✓		✓	✓	✓	✓
Poo *et al.* (2023)	✓		✓		✓	✓	✓	
Savorya *et al.* (2022)	✓	✓	✓	✓	✓	✓	✓	✓
Representation n, %)	24 /24 100%	14/24 58%	16/24 66%	10/24 41%	24/24 100%	10/24 41%	16/24 66%	12/24 50%

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3.6 RESULTS

In this review, the findings were organised into two main themes, each with four subthemes: Theme 1: Personal Level, which includes the subthemes of Knowledge, Skills, Decision Making, and Attitude; and Theme 2: Professional Level, which includes the subthemes of Continuous Professional Development, Organisation of Care, Referral, and Support. Each theme is fully explored below with references to the relevant literature.

3.6.1 Theme 1: Personal Level

This theme focuses on the individual attributes and competencies of healthcare providers that affect their ability to understand and manage maternal mental health issues. It was apparent from the studies that the HCPs were strongly analytical regarding their knowledge, skills, decision making and attitude towards PMH problems. Each of the following sub-sections summarises the findings of the collated studies according to the sub-themes identified in Table 3.4.

Knowledge

This sub-theme was defined as the foundational understanding and awareness that healthcare providers have about maternal mental health conditions. The theme of knowledge was strongly described in all 24 studies. As noted previously, some researchers used knowledge scales and vignettes to assess the knowledge level of healthcare provides. Using the PMH Questionnaire, The 2000 Victorian Survey, the Maternal Mental Health Knowledge Scale, Maternal Mental Health Learning Needs Scale, the Mental Illness Clinician's Attitudes Scale and the PMH Learning Needs Questionnaire, midwives in Ireland were found to have a high level of knowledge on depression, PMH, and anxiety amongst those who responded (Noonan *et al*., 2018). However, Australian midwives reported lower knowledge levels on severe mental health problems such as bipolar disorder, PTSD and schizophrenia (Hauck *et al.*, 2015; Jones *et al.*, 2011). In Savory *et al*. (2022), UK Midwives reported having cared for women with mental health problems and were generally sympathetic and aware of the negative effects that poor PMH can have on the mother, baby, and family. As indicated in Carroll *et al.* (2018) and Noonan *et al.* (2018), midwives in PMH roles also reported a lack of the knowledge necessary to manage PMH problems. Moreover, (Ransing et al., 2020) reported that there was knowledge discrepancy among the nursing providers (NPs), medical practitioners (MPs) and primary health workers (PHWs) groups in terms of discerning basic PMH care issues. These included whether postnatal depression is a normal part of pregnancy, the biological causes of postnatal depression, and anti-depressant medications. In Navarrete *et al*. (2022) most HCPs were found

to be unaware of the clinical guidelines for the protocols to be used for the detection and care of PD, and instead they cited hormonal changes and psychosocial factors as the main cause of postpartum depression.

Interestingly, Jawed *et al*. (2021) found that the level of knowledge among nurses and physicians varied. Knowledge discrepancy was also evident in Silverwood *et al.* (2019) in terms of awareness and understanding of Perinatal Anxiety (PNA) among HCPs in the UK, with debate over what is "normal" anxiety in pregnancy. In a study by Al-Abri *et al*. (2023), it was found that HCPs knowledge depended mainly on observational signs to identify patients with antenatal, perinatal, and postnatal depression. The lack of knowledge significantly impacted the healthcare providers' level of PMH care as well as their confidence in identification and screening (Abrams *et al*., 2016; Adjorlolo *et al*., 2019; Hauck *et al*., 2015; Higgins *et al*., 2018; Machmud *et al*., 2020; McCauley *et al*., 2011; McCauley *et al*., 2019; Noonan *et al*., 2018; Patabendige *et al*., 2020; Ransing *et al*., 2020; Rothera & Oates, 2011; Silverwood *et al*., 2019).

Across the board, knowledge was found to be lacking, at least to a certain extent, and none of the studies concluded a full level of confidence among HCPs in terms of their ability to diagnose and treat mental health issues in pregnant women. This was particularly evident in Magdalena and Tamara (2020), where midwives self-rated their knowledge and skills in assessing the mental state of patients as the lowest compared to their knowledge and competences in other professional tasks.

Skills

The skills sub-theme encompasses the practical abilities required to assess, communicate, and intervene effectively in cases of maternal mental health issues. 14 studies identified the skills required by healthcare providers to undertake roles in PMH care. Important skills included listening and the ability to ask relevant questions (Hauck *et al*., 2015; McCauley *et al*., 2011), screening (Carroll *et al*., 2018; Hauck *et al*., 2015; Jones *et al*., 2011), observing behaviours and facial expression (Xiao *et al*., 2023), liaising with partners (Hauck *et al.*, 2015), teamwork (Hauck *et al*., 2015; Higgins *et al*., 2018; Magdalena & Tamara, 2020), patient management (Jones *et al.*, 2011; Rothera & Oates, 2011) and the ability to deliver counselling (Abazie & Usoro, 2021; McCauley et al., 2011; McCauley et al., 2019). Additionally, Hauck *et al*. (2015), McCauley *et al*. (2011), and Xiao *et al*. (2023) reported that further education on the skills that help in identifying and providing care to women experiencing PMH problems was considered vital in supporting the caregivers in their practice. Finally, Savory *et al*. (2022) found that

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midwives lacked the necessary skills and knowledge of mental health issues, leading to a fear of caring for women with mental health problems.

Decision making

This sub-theme involves the cognitive processes healthcare providers use to diagnose and decide on the best course of action for managing PMH conditions. Of the 24 studies, 16 studies described decision making as an important requirement for the appropriate and accurate identification of women experiencing PMH problems or those at risk of being affected by PMH problems. Clinical skills were identified as strongly significant in influencing the decision making of HCPs. These clinical skills included the use of screening tools (Adjorlolo *et al*., 2019; Al-Abri *et al*., 2023; Fletcher *et al*., 2021; Hauck *et al*., 2015; Higgins *et al*., 2018; Jones *et al*., 2011; Magdalena & Tamara, 2020; Nakidde *et al*., 2023; Noonan *et al*., 2018; Patabendige *et al*., 2020), assessing the mental state of patients (Carroll *et al*., 2018; Higgins *et al*., 2018; Magdalena & Tamara, 2020; Noonan *et al*., 2018), and discussing mental health issues with women and their partners/families (Carroll *et al*., 2018)

In Australia, Poland, Ireland, and Singapore contexts, the screening tools that healthcare providers used included the EPDS (Hauck *et al*., 2015; Jones *et al*., 2011; Magdalena & Tamara, 2020; Noonan *et al*., 2018; Poo *et al*., 2023), and the Whooley questions (Fletcher *et al*., 2021; Noonan *et al*., 2018). Moreover, in Australia and Poland contexts, midwives did not have a clear understanding of the EPDS's functions and limitations in four of the studies (Hauck *et al*., 2015; Jones *et al*., 2011; Magdalena & Tamara, 2020; McCauley *et al*., 2011), with only 13.4% identifying the EPDS as a screening tool in Hauck et al. (2015) study. According to (Machmud et al., 2020), respondents reported that both the Perinatal Anxiety Screening Scale (PASS) and EDPS were important tools, but that they were difficult to apply during pregnancy examinations. In Nakidde *et al*. (2023), whose study was conducted in a Ugandan content, almost all participants stated that they used no specialised tools to assess maternal mental health aside from the standard clinical assessment methods of history and physical examination, and only one participant stated that they used PHQ-9 tool to assess maternal mental health. Indeed, the same is true in a number of other studies (Al-Abri *et al*., 2023; Carroll *et al*., 2018; Jawed *et al*., 2021; Noonan *et al*., 2018; Savory *et al*., 2022), where most of the respondents reported not using any mental health tools to screen or assess mental health problems. In Al-Abri et al. (2023); Navarrete et al. (2022), and Silverwood *et al*. (2019), instead of using tools, healthcare providers instead stated that they used their own clinical expertise and professional judgment in assessing mental health problems. One unique and noteworthy finding to highlight is that in

Xiao et al. (2023) study in a China context, participants noted that if HCPs had the ability to conduct mental health disorder screening, this could enhance their professional status.

Attitude

The attitude sub-theme pertains to the personal beliefs and attitudes of healthcare providers towards maternal mental health issues and their patients. Ten studies discussed attitude as an essential sub-theme since it was found to significantly influence the professional behaviour of the healthcare providers. In the context of these studies, attitude referred to the willingness of the midwives to assume their responsibility for PMH care. Hauck et al. (2015); Noonan et al. (2018); Rothera and Oates (2011); Savory et al. (2022); Shahid Ali et al. (2023) all reported that midwives generally acknowledge that they had a responsibility to provide PMH care. However, some midwives still held the notion that providing PMH care was a responsibility of social workers in the studies based in Ghana and Australia (McCauley et al., 2011); McCauley et al. (2019). It was also apparent that negative attitude among midwives led to negative stereotyping (Hauck *et al*., 2015; McCauley *et al*., 2011). For instance, in Australia, midwives indicated that women experiencing PMH problems are difficult to manage and described avoiding them. These attitudes were reflected in practice, with midwives describing women with PMH problems as lacking in warmth and competence (Hauck *et al*., 2015). In the study by Navarrete *et al*. (2022), healthcare providers in Mexico demonstrated a lack of knowledge, often viewing depression as merely a result of hormonal changes.

On the other hand, stigmatised attitudes were also expressed in a number of studies in the form of healthcare providers identifying a desire to protect woman from being "labelled" as one of the reasons for avoiding recording a mental health history and referring women to specialist services (Fletcher et al., 2021; Machmud et al., 2020; McCauley et al., 2011; McCauley et al., 2019; Noonan et al., 2018). In a similar vein, in Hauck *et al*. (2015) and Savory *et al*. (2022), midwives in UK acknowledged that it was their role to assess the mental health status of women. However, many felt ill-equipped to do so.

Overall, the attitude of HCP towards gaining PMH care knowledge and skills was positive with a majority of HCP though, who expressed a strong desire for further knowledge and skills across a range of PMH topics.

3.6.2 Theme 2: Professional Level

This theme encompasses the systemic and organisational factors that influence how healthcare providers manage PMH care within their practice settings. The sub-themes identified

to have an influence at the expert level among healthcare providers include continuous professional development, organisation of care, referral, and support. Each of these are explored in-depth in the following sub-sections.

Continuous professional development

All 24 studies described continuous professional development as an important requirement to improving the professional engagement of healthcare providers in delivering PMH care. In Poo *et al*. (2023), an overwhelming 98.2% of respondents highlighted the need for standardised PMH guidelines as well as education on mental health care for pregnant women. It was also evident from Jones *et al*. (2011) that the pre-registration education given to midwives in an Australia context was limited and hence an in-depth overhaul of the training provided to midwives is required for them to be able to assess and effectively manage women with PMH problems (Jones *et al*., 2011). In Jawed *et al*. (2021) HCPs reflected on the gaps within the teaching curriculum for doctors and nurses that restricted their ability to provide robust mental health care. More worryingly, in two studies based in Oman and Sri Lanka (Al-Abri et al. (2023); Rothera and Oates (2011) it was apparent that most healthcare workers had not received any specific pre-qualification or postgraduate training in PMH. Based on this evident lack of CPD opportunities related to mental health care, numerous researchers emphasised the need for continuing professional education to improve HCPs knowledge and competency in the assessment and care of women suffering depression in the natal period (Al-Abri *et al*., 2023; Fletcher *et al*., 2021; Jones *et al*., 2011; Nakidde *et al*., 2023; Navarrete *et al*., 2022; Poo *et al*., 2023; Savory *et al*., 2022; Shahid Ali *et al*., 2023; Xiao *et al*., 2023). It was also reported that midwives received very limited post-registration education related to PMH care in both Jones *et al*. (2011) and Rothera and Oates (2011). Moreover, the post-registration education related to PMH did not always seem to improve the confidence levels of midwives in supporting women experiencing PMH problems (Hauck *et al*., 2015). However, for most healthcare providers, post-registration education with a practical component was seen to improve knowledge and confidence in providing care to women experiencing PMH problems (Abrams et al., 2016; Adjorlolo et al., 2019; Carroll et al., 2018; Higgins et al., 2018; Machmud et al., 2020; Magdalena & Tamara, 2020; McCauley et al., 2011; McCauley et al., 2019; Noonan et al., 2018; Patabendige et al., 2020; Ransing et al., 2020; Silverwood et al., 2019). On a more positive note, the study by Savory *et al*. (2022) in UK showed that around a third of midwives reported having received training related to PMH in the previous two years. Most of these skills were acquired through clinical practice and peer interactions rather than formal education.

Organisation of care

This sub-theme examines how healthcare services are structured and organised to provide PMH care. Ten studies discussed organisation of care in relation to such issues as time, work, and models of care. Al-Abri et al. (2023); Fletcher et al. (2021); Jawed et al. (2021); McCauley et al. (2011); McCauley et al. (2019), and Poo *et al*. (2023) identified time constraints and Xiao *et al*. (2023), Navarrete *et al*. (2022), and Savory *et al*. (2022) identified work overload as the major barriers faced by HCPs while providing support to women with PMH problems. In Xiao et al. (2023) study the fragmented model of perinatal care was highlighted as restricting access to mental health screening for pregnant women. In terms of the alleviating factors to organisation of care, continuity models, where a specific midwife is assigned to specific women throughout perinatal and postnatal period, were considered essential in detecting PMH problems in a Sri Lankan context (Patabendige *et al*., 2020).

Referral

This sub-theme relates to the processes and protocols for referring patients to specialised mental health services. 16 studies discussed referral as an essential theme, identifying barriers to effective referral. Some of the barriers discussed in the studies included lack of specialist PMH teams, lack of required skills to identify, assess and care for women with PMH problems, lack of knowledge of available options, lack of a clear protocol, lack of or inadequate use of psychosocial assessment tools, as well as a lack of timely access to clearly defined care pathways (Abrams *et al*., 2016; Adjorlolo *et al*., 2019; Al-Abri *et al*., 2023; Carroll *et al*., 2018; Fletcher *et al*., 2021; Hauck *et al*., 2015; Higgins *et al*., 2018; McCauley *et al*., 2011; Nakidde *et al*., 2023; Navarrete *et al*., 2022; Noonan *et al*., 2018; Poo *et al*., 2023; Rothera & Oates, 2011; Savory *et al*., 2022; Silverwood *et al*., 2019; Xiao *et al*., 2023).

Support

This sub-theme explores the types of support available to HCPs within the healthcare system. Support as a sub-theme was discussed in 12 studies. The studies particularly discussed the emotional impact of conducting psychosocial assessment and screening (Al-Abri *et al*., 2023; Machmud *et al*., 2020; McCauley *et al*., 2019). In a Polish context, midwives expressed the need for support in the form of further training to ensure their competency and knowledge regarding the assessment and treatment of patients who experience perinatal depression (Magdalena & Tamara, 2020). Many midwives also reported a requirement for support to cope with the emotional impacts of providing the required care. Peer support from other midwives and obstetric colleagues was identified as the main source of current support for these midwives

(Abrams *et al*., 2016; Fletcher *et al*., 2021; Higgins *et al*., 2018; Noonan *et al*., 2018; Ransing *et al*., 2020). In Savory *et al*. (2022) while the majority of midwives indicated their willingness to support women under their care, they perceived a lack of adequate support for women's mental health care. (Machmud et al., 2020) emphasised the need for social support for pregnant women as a way of improving their mental health in an Indonesian context. The authors further noted that while a mental health program for pregnant women already existed, it had not been rolled out to the primary care facilities. Abrams et al. (2016); Nakidde et al. (2023), and Xiao *et al*. (2023) also indicated that HCPs required support in the form of training in effective screening, treatment and referral. Thus, it is clear that support was lacking in all study contexts and that HCPs perceive a need for more support in terms of training, knowledge and peer networks.

3.7 DISCUSSION

By synthesising data from 24 studies conducted across diverse settings, this review provides valuable insights into the critical role of HCPs perception in managing and supporting PMH, and highlights areas where further improvements are necessary. The discussion below contextualises these findings and offers reflections on their implications for practice, policy, and future research.

Various factors influence how healthcare providers perceive PMH, with studies primarily focusing on regions like South and Southeast Asia (Vietnam, Indonesia, Sri Lanka, Pakistan, India, Singapore, and China), Europe (Ireland, UK), and Africa (Ghana, Uganda). Interestingly, the Middle East remains the least explored region in this regard, with only notable study having been conducted in Oman. This geographical variation highlights the importance of future research that seeks to understand the manner in which local contexts shape perceptions and practices related to PMH among healthcare providers, which can then be used to inform targeted interventions and policy decisions. This is particularly true given the differences in conclusions reached according to the geographical locations of studies.

3.7.1 Knowledge and Skills of Healthcare Providers

The findings underscore the variability in HCPs' knowledge of PMH across different regions and professional roles. 19 studies supported the existence of limited knowledge among healthcare providers, but five studies did indicate high levels of knowledge regarding PMH among providers. These studies were conducted in Ireland, UK, Ghana, and Sri Lanka. Where knowledge gaps were found to exist, the main reasons were lack of information and training

regarding mental health issues in pregnant women, the consequences of these issues, and how to screen and identify the mental health issues themselves. Although some healthcare providers clearly did possess some knowledge PMH problems, even in these cases, some felt that they were not equipped to provide quality care. This was particularly true in the studies conducted in Australia, Ireland, and UK. Moreover, limited continuity of care was raised as significant barrier to effective diagnosis, treatment and management of mental health issues. HCP indicated that this lack prevented them from establishing positive therapeutic relationships with pregnant women and they were thus unable to receive feedback on the effectiveness of their care. Ultimately, this led to perceptions of the HCP themselves being unable to deliver quality care. In this regard, feelings of incompetence were noted as causing the HCPs professional discomfort (Hauck *et al*., 2015; Savory *et al*., 2022). Additionally, the fragmented model of care was also shown to prevent healthcare providers from delivering quality mental health services (by fragmented models here, we mean that there tends to be limited cooperation between HCP colleagues and so no unity of purpose and no opportunities to collate ideas for delivering the best care). The reasons given for this lack of coordination were a lack of interprofessional communication, differing professional priorities, time constraints, and inconsistent leadership in the integration of mental health care across disciplines (Silverwood et al., 2019); Xiao et al. (2023).

Conversely, a few studies reported higher levels of PMH knowledge among healthcare providers. For example, Fletcher et al. (2021); McCauley et al. (2019); Noonan et al. (2018); Patabendige et al. (2020), and Savory *et al*. (2022) found that some midwives and healthcare providers possessed satisfactory knowledge about the risk factors, symptoms, and consequences of PMH issues. These studies were conducted in Ireland, Ghana, and Sri Lanka respectively. However, the studies also highlighted that knowledge alone does not necessarily translate into effective practice. Despite being aware of PMH issues, many HCPs felt ill-equipped to provide quality care due to inadequate training and lack of practical application skills, such as the use of screening tools like the EPDS.

In the review by Rothera and Oates (2011), it was found that midwives, obstetricians and health visitors in UK lacked the required knowledge critical for identifying and managing mental health disorders and most did not have qualifications to deal with childbearing mental health issues. Similar results were reported by Ransing *et al*. (2020), who reported knowledge discrepancy among NPs, MPs and PHWs in India regarding PMH problems. However, a majority of the respondents in Ransing *et al*. (2020) acknowledged the need to screen all women

for depression during pregnancy. Higgins *et al*. (2018) and Xiao *et al*. (2023) also reported a lack of knowledge and skills among healthcare workers to address all aspects of mental health in Ireland and China, respectively, including opening a discussion with women on more sensitive or complex issues such as trauma and psychosis, and providing information to women. The findings of Higgins *et al*. (2018) also reveal that healthcare workers who received education on PMH had significantly higher knowledge and confidence than those who had not received any education on PMH care. The researchers, therefore, recommended the development of robust education programs in future that not only focus on postnatal depression but instead address all mental health problems that may be experienced by women in the perinatal period. The results of Higgins *et al*. (2018) were later confirmed by Carroll *et al*. (2018) who reported limited knowledge of PMH problems among participants in Ireland. In Carroll *et al*. (2018), midwives reported a lack of skill in opening a discussion with women on sensitive issues, such as sexual abuse, intimate partner violence and psychosis, and providing information to women's partners/families. It was also evident from this study that midwives adopted a selective approach to screening for PMH problems, with a tendency not to inquire about sensitive topics, or address them only with women deemed at risk. In Abrams *et al*. (2016), PHWs reported having almost never treated a woman with a perinatal mental disorder in a Vietnam context. Anecdotal evidence from the women interviewed suggests that there were incidents of mental disorders during the perinatal period that went largely unaddressed. Despite the limited knowledge though, willingness among PHWs to present PMH care appeared to be high, and this presented an opportunity to address this need by training PHWs in effective screening, treatment, and referral. Machmud et al. (2020); Nakidde et al. (2023), and Shahid Ali *et al*. (2023) also reported limited knowledge and skills among healthcare workers regarding PMH care in Pakistan respectively. To be more specific, Machmud *et al*. (2020) reported that midwives had not been able to explain the definition of Mental Health for Pregnant Women. According to the authors, some of the factors affecting the ability of HCPs to provide mental health care to pregnant women included social support, self-esteem and self-efficacy. Additionally, while a mental health program for pregnant women did exist, it had not been fully rolled out to the primary facilities.

In terms of more specialist knowledge, Silverwood *et al*. (2019) reported that awareness and understanding of PNA among HCPs was variable in UK, with debate over what is 'normal' anxiety in pregnancy. HCPs suggested that PNA can be challenging to identify, with mixed views on the use and value of case-finding tools. Opportunistic identification was noted to be significant to aid diagnosis, but care for women diagnosed with PNA was reported to be

fragmented and interprofessional communication poor (Navarrete et al. (2022); Silverwood et al. (2019). However, since HCPs had inadequate knowledge in PMH, there was a need to train a small number of this group to then serve as trainers for all other midwives.

Effective PMH care relies heavily on HCPs' skills, particularly in communication, screening, and counselling. The review found that while some skills, such as basic communication and screening, were commonly acknowledged, more complex skills like effective counselling and multidisciplinary teamwork were less consistently practiced (Al-Abri *et al*., 2023; Hauck *et al*., 2015; McCauley *et al*., 2011). Skills in using screening tools are also necessary in effectively helping HCPs to address PMH care among women in the perinatal period. One of the most important screening tools that healthcare workers need in assessing PMH in women is the EPDS. In Hauck *et al*. (2015), the two items related to knowledge about the EPDS were scored correctly by less than 50% of participants. In addition, only 13.4% correctly identified the EPDS as a screening rather than a diagnostic tool. Some of the screening tools used in Noonan *et al*. (2018) in an Irish context included the PMH Questionnaire, the Mental Illness and Clinicians' Attitudes Scale, and the PMH Learning Needs Questionnaire. In Savory *et al*. (2022), the majority of midwives had cared for women with mental health problems and were assessed women's mental health informally by observing or asking questions about mood.

The review also revealed that decision-making in PMH is significantly influenced by the availability and understanding of screening tools. The EPDS and Whooley questions are commonly used tools, yet many midwives lacked a comprehensive understanding of their applications and limitations (Fletcher et al., 2021); (Hauck et al., 2015; Jones et al., 2011). In some cases, HCPs relied more on their clinical judgment rather than structured tools, which can lead to inconsistent and subjective assessments (Al-Abri *et al*., 2023; Carroll *et al*., 2018; Silverwood *et al*., 2019).

Attitude emerged as a crucial determinant of HCPs' engagement in PMH care. While some midwives acknowledged their responsibility for providing PMH care, others held negative stereotypes and stigmatised attitudes towards women experiencing PMH problems (Fletcher et al., 2021; Machmud et al., 2020; McCauley et al., 2011; McCauley et al., 2019; Noonan et al., 2018; Ransing et al., 2020). Positive attitudes were associated with a strong desire for further knowledge and skills development in PMH care (Hauck *et al*., 2015; Savory *et al*., 2022).

Another key component revealed by this review in terms of improving HCPs' engagement with PMH is continuous professional development. The review highlighted that both pre-registration and post-registration education on PMH are often limited, impacting HCPs' confidence and competency (Jones *et al*., 2011; Rothera & Oates, 2011). However, gaps in the teaching curriculum and limited access to specific PMH training were also noted (Jawed *et al*., 2021).

The organisation of care, particularly regarding time constraints and care models, also significantly impacts the delivery of PMH services. Studies identified that time limitations hinder HCPs' ability to provide comprehensive PMH support (Al-Abri *et al*., 2023; McCauley *et al*., 2011). Conversely, continuity of care models, where women are assigned specific midwives throughout the perinatal period, were found to be effective in managing PMH issues (Patabendige *et al*., 2020). Furthermore, referral processes and support mechanisms were found to be crucial for managing complex PMH cases. The review identified barriers such as a lack of specialist PMH teams and inadequate knowledge of referral pathways (Carroll *et al*., 2018; Hauck *et al*., 2015; Noonan *et al*., 2018). Finally, the emotional toll of providing PMH care necessitates support for HCPs. Studies highlighted the need for emotional and professional support to help HCPs manage the stress associated with PMH care (Al-Abri et al., 2023); Machmud et al. (2020).

3.8 IMPLICATIONS FOR PRACTICE AND POLICY

The findings of this integrative review underscore critical implications for both clinical practice and healthcare policy aimed at enhancing PMH care. To improve the delivery of PMH services, several strategies could be considered:

6. **Targeted Educational Programs**: Implementing comprehensive and role-specific training programs to bridge the significant knowledge gaps identified among HCPs. This includes integrating PMH training into both pre-registration and post-registration education.
7. **Continuous Professional Development**: Embedding ongoing CPD into healthcare systems to keep HCPs updated with the latest practices and innovations in PMH care.
8. **Structural and Organisational Changes**: Advocating for structural modifications in healthcare systems to enable efficient referral processes and continuity of care. This could involve integrating validated screening tools into routine perinatal care and ensuring that HCPs are adequately trained to use these tools.

9. **Support for HCPs**: Recognising and supporting the emotional well-being of HCPs through robust support systems, including peer support networks and access to professional counselling. This is crucial for sustaining the quality of PMH services.
10. **Policy Advocacy**: Pushing for mandatory and standardised PMH training across all levels of healthcare education and practice and encourage teamwork system. Policies should support the integration of comprehensive PMH care into healthcare systems, ensuring that HCPs are equipped to provide effective support to women throughout the perinatal period.

3.9 FUTURE RESEARCH DIRECTIONS

Given the gaps identified in this review, particularly the limited research on PMH from the perspectives of HCPs in certain regions, there is a need for research in the Kingdom of Saudi Arabia (KSA) to address these knowledge gaps and inform the development of targeted interventions and policies. Undertaking such research in this context is of paramount importance to add to the body of knowledge on this topic from specific cultural and local contexts so that practitioners and academics can assess the degree to which there are similarities and deviations in findings.

3.10 STRENGTH AND LIMITATIONS

The use of PRISMA guidelines and a consistent methodological quality checklist to analyse and present evidence is one of the review's strong points. Furthermore, the review followed Whittemore and Knafl (2005) methodology to recognise and ensure reliable results. Another key point is that most of the collated studies had invested significant efforts to ensure that the study findings were easily generalised. This is because the sample sizes used in most studies in the integrative review were large enough in other words, the studies included in the integrative review used a sample that was representative of the population.

However, despite this review succeeding in answering the specified research question, it does have limitations. First, some of the included studies were conducted using convenience sampling, some in only a single setting, and some had too low response rates to be reliable and generalisable. Finally, only studies published in the English language were included, potentially missing studies that could add value that were published in other languages.

3.11 GAP IN THE LITERATURE

The current chapter constitutes an extensive review of the literature and brings to light a substantial lack in terms of maternal mental health knowledge especially within Saudi Arabia. The literature review aimed to explore the knowledge and preparedness of healthcare providers (HCPs) on maternal mental health issues inclusive of prenatal depression. The review revealed several gaps in the literature:

- **Assessment and Screening Practices**: There is a notable absence of comprehensive research evaluating the current practices and effectiveness of screening for maternal mental health issues by HCPs in Saudi Arabia. Studies that explore whether HCPs are sufficiently trained and equipped to identify and address maternal mental health concerns are scarce. For instance, while general Middle Eastern studies, such as those from Oman, provide some insights, they do not specifically address the Saudi healthcare system.
- **Training and Education**: There is a significant gap in detailed research on the educational background and training of HCPs in Saudi Arabia concerning maternal mental health. Although existing literature frequently mentions a lack of adequate training, it falls short of providing deep insights into specific educational deficiencies or offering solutions to improve training and care quality. Research specific to Saudi Arabia in this area is virtually non-existent, highlighting a critical area for future investigation.
- **HCPs' Attitudes and Perceptions**: Understanding the attitudes and perceptions of HCPs toward maternal mental health within the Saudi healthcare system is crucial, yet underexplored. There is limited research on how the personal beliefs and professional knowledge of HCPs impact the care they provide to women experiencing prenatal or postnatal mental problems. The available studies from the broader Middle Eastern, European, and African contexts do not adequately reflect the unique cultural and systemic aspects of the Saudi healthcare environment, indicating a significant research gap.

3.12 CONTRIBUTION OF THE CURRENT STUDY

This PhD study aims to fill these gaps by focusing on HCPs' perspectives to evaluate the knowledge, preparedness, and attitudes of healthcare providers in Saudi Arabia concerning maternal mental health. This includes assessing their current practices in screening and

managing maternal mental health issues, their training needs, and how their perceptions affect the care they provide.

3.13 THESIS RESEARCH QUESTIONS

After reviewing the two integrative reviews from both women and healthcare providers' perspectives, the current study aims to address the following overarching research question, which is divided into three sub-questions:

Overarching question

How is mental health care perceived, understood, and experienced during pregnancy and the postnatal period in Saudi Arabia?

Sub-questions

11. What are the perceptions and knowledge of pregnant and postnatal women in Saudi Arabia regarding maternal mental health issues?
12. To what extent do healthcare providers in Saudi Arabia possess knowledge and understanding of mental health care during pregnancy and the postnatal period?
13. What factors contribute to or hinder mental health care during pregnancy and the postnatal period from the perspectives of women and healthcare providers in Saudi Arabia?

3.14 CONCLUSION

This integrative review presents a thorough synthesis of existing literature on healthcare providers' involvement in PMH care, delineating complex themes spanning personal and professional realm. The majority of healthcare providers were found to not be adequately prepared to assess and treat mental health issues in prenatal women. Addressing the identified knowledge gaps, enhancing decision-making capabilities, and fostering supportive care environments are essential steps towards improving PMH services. Future research should focus on evaluating the effectiveness of educational interventions and support systems in enhancing HCPs' capacity to provide comprehensive PMH care. Exploring innovative care models and screening tools can further contribute to the effective management of PMH issues, ultimately improving outcomes for prenatal women. The absence of studies addressing PMH care within the Kingdom of Saudi Arabia (KSA) constitutes a significant gap, emphasising the need for targeted research initiatives aimed at elucidating contextual nuances and crafting

culturally tailored interventions. Further research is needed to deeply explore the healthcare providers' awareness of prenatal mental health problems in KSA.

The findings of the two literature reviews presented in the previous and current chapters were discussed in relation to the research questions of this thesis. Gaps in the literature were identified and the original contributions of the current project were acknowledged. The following chapter provides details of the study's methodology, research design, method, and analysis process.

Chapter 4: Methodology

4.1 INTRODUCTION

This chapter fully explains the methods used in this study. It begins by discussing the research philosophy and approach, followed by a description and justification of the chosen design and proposed research methods. The data collection methods selected within the chosen approach are then outlined, before the data analysis processes are described. The chapter also acknowledges the ethical issues encountered during the research process and the challenges posed by the methods used.

4.2 PHILOSOPHICAL WORLDVIEW

This research operates under a pragmatic worldview, which asserts that research questions should be the primary focus. According to Tashakkori *et al*. (2020) the pragmatic philosophical perspective places great importance on research questions, endorsing the most effective methods available and appreciating both quantitative and qualitative approaches. This perspective often leads to the use of mixed methods research (Creswell & Plano Clark, 2018) because pragmatists believe that integrating various methods is both valid and essential for thoroughly addressing research questions (Gray, 2022)

From a philosophical perspective, pragmatism does not commit to any single system of reality (Weaver, 2018). It avoids the dichotomy between positivism/post-positivism and constructivism concerning methods, ontology, and epistemology, instead embracing both aspects (Tashakkori *et al*., 2020). This allows researchers to test hypotheses (aligned with the positivist paradigm) and explore multiple perspectives (aligned with the constructivist paradigm) (Creswell & Plano Clark, 2018). While ontology questions the nature of reality, epistemology examines the relationship between the knower and the known, or the researcher and the participant (Tashakkori *et al*., 2020). Positivists/post-positivists perceive research as objective, with a clear separation between researcher and participant, whereas constructivists view research as subjective, with researchers and participants collaborating to co-construct social realities (Tashakkori *et al*., 2020). Pragmatists, however, argue that objectivity and subjectivity are not opposing poles but exist on a continuum (Tashakkori *et al*., 2020). Pragmatism emphasises using "what works" to address research questions, employing a variety

of methods and valuing both objective and subjective knowledge (Creswell & Plano Clark, 2018).

The pragmatic research paradigm is particularly well-suited for studying maternal mental health in Saudi Arabia. This approach accommodates this complex issue's diverse viewpoints and circumstances (Kaushik & Walsh, 2019). By applying pragmatist principles, the study can adeptly navigate the intricacies of maternal mental health, contributing to the advancement of knowledge and enhancing maternal mental health care across the region. Pragmatism's emphasis on practical implications and real-world applications of research findings aligns perfectly with the study's long-term goal of developing strategies to inform and improve maternal mental health services in Saudi Arabia (Kaushik & Walsh, 2019).

The study aims to provide valuable insights for policymakers, healthcare providers, and other stakeholders by focusing on the outcomes and impacts of maternal mental health attitudes and behaviours. This alignment with the pragmatist worldview justifies the study's employment of a mixed-methods methodology, utilising qualitative and quantitative approaches to address the research questions effectively. A more detailed discussion of the methodology follows in the next section.

4.3 METHODOLOGICAL APPROACH

A methodology is the "framework of theories and principles on which methods and research strategies are based" (Holloway & Galvin, 2017). Research can utilise both qualitative and quantitative methodologies. The former are iterative processes aimed at gaining a deeper understanding by closely examining the phenomenon under study. This approach seeks to interpret phenomena by exploring the meanings people attribute to them (Aspers & Corte, 2019). In contrast, quantitative methodologies emphasise objectivity and depend on the "collection and analyses of numerical data to describe, explain, predict, or control variables of interest" (Craig, 2022). Table 4.1 below provides a comparison between qualitative and quantitative research methodologies.

Table 4.1

Comparison of Qualitative and Quantitative Research Methodologies (Adapted from Gray, 2022)

Component	Qualitative	Quantitative
Epistemological positions	Constructivist	Objectivist
Research focus	Meanings	Facts

Unveiling Maternal Mental Health: Exploring The Perceptions And Practices Of Mental Health Care For Pregnant And Postnatal Women In Kingdom Of Saudi Arabia: A Mixed Methods Study

Relationship between researcher and participant	Close/insider	Distant/outsider
Relationship between theory/concepts and research	Induction/emergent	Deduction/confirmation
The nature of data	Text	Numbers

Qualitative and quantitative methodologies are often used separately but can also be combined. This combined approach, called mixed-method methodology, was deemed suitable for the current study. The nature of the research questions drives the choice of this method. Indeed, maternal mental health has often been denigrated by the healthcare profession, especially in the perinatal period (Nagle & Farrelly, 2018). As such, mental health literacy is critical for recognising and dealing with concerns such as postpartum depression (Jorm, 2012). This is because mental health literacy aids in the recognition, management and prevention, and thus critical to empower individualises to identify the signs and symptoms earlier and seek help at the appropriate time before it is complicated (Jorm, 2012). Without adequate mental health literacy, women may not recognise the signs of postpartum depression, leading to delays in treatment and worsening outcomes for both the mother and the child (Jahan *et al*., 2021). Improving mental health literacy can also help reduce stigma and encourage open discussions about mental health, fostering a supportive environment for those affected (Waqas *et al*., 2020). Furthermore, understanding women's perspectives and experiences with their mental health needs throughout pregnancy and the postpartum period is critical for delivering appropriate support, psychoeducational resource, and services, especially considering the absence of reviews in KSA in the literature (Alshahrani *et al*., 2020).

Educational interventions have been found to improve midwives' knowledge, abilities, and attitudes regarding PMH, emphasising the need of training for healthcare providers in this area (Higgins *et al*., 2018). However, hurdles remain that prevent midwives and nurses from discussing mental health concerns with women throughout the perinatal period, emphasising the importance of comprehensive interventions to overcome these obstacles (Higgins *et al*., 2018). Understanding the unique hurdles that women encounter when seeking care for postnatal mental health concerns is thus critical, as demonstrated by a study on perceived barriers and self-efficacy connected to postnatal exercises among Saudi women (Alshahrani *et al*., 2020). Furthermore, a study in Riyadh, Saudi Arabia, discovered the frequency and determinants of postpartum depression in the region, emphasising the need of treating maternal mental health problems in the local context (Al Nasr *et al*., 2020).

To comprehend the full scope of maternal mental health in Saudi Arabia, healthcare providers play a pivotal role. Their knowledge, attitudes, and practices significantly impact the care provided to pregnant and postnatal women. Research underscores the critical importance of training and support for healthcare providers to improve their ability to recognise and effectively manage PMH concerns. To further investigate these key issues, namely, the level of awareness and knowledge of maternal mental health issues among pregnant and postnatal women, the barriers to accessing mental health care, and the perceptions of healthcare providers regarding maternal mental health in Saudi Arabia, a mixed-method approach was employed in this doctoral research. The qualitative component focused on understanding their perceptions, knowledge, and the obstacles and resources they faced. In contrast, the quantitative component specifically investigated the knowledge of health care providers about maternal mental health issues, particularly depression.

From a pragmatic viewpoint, the use of mixed methods is reinforced by its ability to harness the strengths of both qualitative and quantitative approaches, thereby enhancing the rigour and depth of research findings. Evidence suggests that individuals from different cultural backgrounds have varying influences on their healthcare decisions and the uptake of health services (Glanz & Bishop, 2010). This is aligned with the fundamental premise of mixed methods design, which posits that integrating qualitative and quantitative approaches yields a more comprehensive understanding than using either method independently (Creswell & Creswell, 2018). Another advantage of mixed methods research is that each research method has its own strengths and weaknesses. The integration of quantitative and qualitative data can help mitigate these weaknesses and significantly enhance the overall value of the research (Creswell *et al*., 2011). In this research, the findings were integrated through an embedded design where qualitative data was collected from pregnant/postnatal women and HCPs through interviews and complemented by a quantitative survey for HCPs to provide additional context, data, and support to the qualitative findings. This approach allowed for a thorough exploration of the participants' perceptions and knowledge regarding maternal mental health issues, and the quantitative data helped to quantify the knowledge aspects and add depth to the qualitative insights. By integrating these two types of data, a more and understanding and a comprehensive analysis of the complex factors influencing maternal mental health in Saudi Arabia was possible.

Various typologies have been developed to classify the different types of mixed methods designs. These typologies are created with diverse focuses; for instance, some emphasise the

rationale behind integrating methods, while others concentrate on the sequence in which the methods are applied (Creswell & Plano Clark, 2018). In applying the typology devised by Greene *et al*. (1989), the mixed methods approach utilised in this study serves two purposes: expansion and complementarity. By expansion, here we mean extending the breadth of the investigation by employing methods best suited for exploring distinct components of the research. Complementarity focuses on assessing overlapping yet separate aspects of a phenomenon through mixed methods. This approach has been shown to enhance, elaborate, and clarify the findings obtained from one method by incorporating insights from another (Greene *et al*., 1989).

Johnson *et al*. (2007), proposed a spectrum of mixed methods research comprising five distinct types. This present study falls under the category of qualitative-dominant mixed methods research (QUAL + quan research). Qualitative-dominant mixed methods research is characterised by its primary qualitative orientation yet acknowledges the potential benefits of incorporating quantitative elements into the study (Johnson *et al*., 2007). Here, the qualitative element involves an in-depth exploration of pregnant, postnatal, and healthcare providers' perspectives on mental health, and the quantitative element aims to measure healthcare providers' knowledge of maternal mental health. The data collection methods employed in both Phases are illustrated below (Figure 4.1).

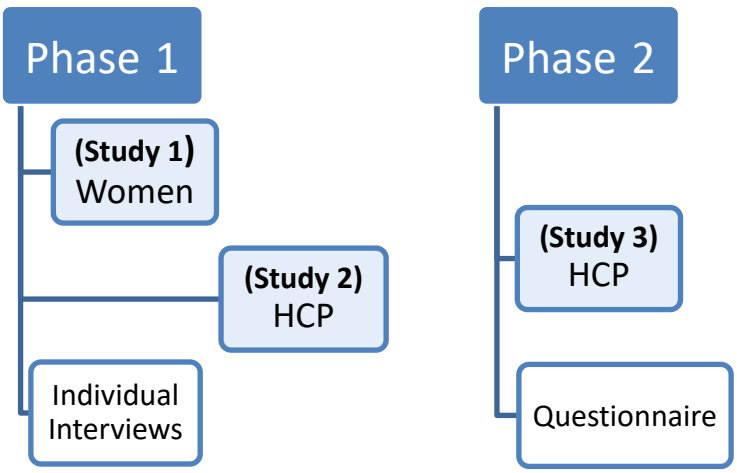

Figure 4.1 Flow diagram illustrating Phases of research

In mixed methods research, data collection can either be conducted simultaneously or in a sequential order (Tashakkori *et al*., 2020). In addition, there are four main models of mixed methods design for data collection used in social and health science research: (1) triangulation or convergent parallel; (2) embedded; (3) explanatory sequential; and (4) exploratory sequential (Creswell & Creswell, 2018). Triangulation or convergent parallel mixed designs involve data

collection methods occurring concurrently while sequential mixed designs involve conducting the methods in a specific chronological sequence (Tashakkori *et al*., 2020). Embedded designs, where one type of data (qualitative or quantitative) plays a supportive role to the other primary data type, integrate data collection and analysis at multiple stages. This approach is particularly advantageous in capturing the complexities of maternal mental health issues. This approach allows for a comprehensive exploration by conducting two qualitative studies with women and healthcare providers (Phase 1) and a quantitative study with a maternal mental health knowledge questionnaire for HCP (Phase 2). The embedded design was not employed for comparing and contrasting different elements, as in the triangulation design (Creswell & Plano Clark, 2018); rather, it aimed to understand Saudi society's perceptions of mental health and to reveal awareness and knowledge from a holistic perspective.

Given the study's structure of two qualitative Phases followed by a quantitative Phase, the embedded design was deemed more suitable than parallel designs. This method enables researchers to acquire a more comprehensive grasp of a research issue by combining diverse views and data sources, ensuring a cohesive analysis across methods, and maximising insights into maternal mental health. Figure 4.2 shows this integrated process for this study's design.

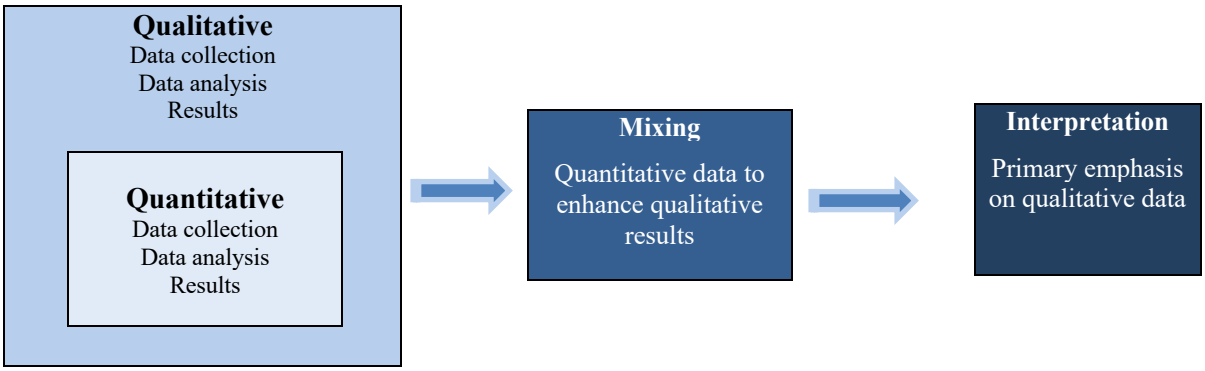

Figure 4.2 Flow diagram of the embedded design research process

For Phase 1, Interpretive description was employed for the analysis of the individual interviews of women and HCPs. In Phase 2, the quantitative data generated by the questionnaire was scored and entered into SPSS (version 28) for analysis.

4.3.1 Qualitative Methodology

An interpretive descriptive approach was chosen as the most appropriate methodology for because it is a qualitative methodology specifically designed for researching clinical challenges (Thorne et al., 1997; Thorne, 2008). This approach is particularly suited to and was employed in Phase 1 for this study's focus because it acknowledges the complexity and nuances

of clinical practice, providing an applied and constructivist qualitative framework for understanding these issues (Thorne, 2008).

Interpretive descriptive methodology distinguishes itself from other qualitative approaches, such as phenomenology or ethnography, by its applied nature. In this methodology, theory serves not as an end in itself but as a tool to address clinical issues and challenges (Hunt, 2009; Thorne, 2008). Furthermore, interpretive descriptive methodology emphasises a flexible approach, making it well-suited for projects that integrate data from both qualitative and quantitative sources (Maxwell & Mittapalli, 2010).

Unlike grounded theory, which primarily aims to construct theory from research process, interpretive descriptive methodology in this study focused on gaining a deeper understanding of the perspectives of pregnant and postnatal women and healthcare providers because it allows the interpretation of participants' experiences to identify obstacles, facilities, and needs. Various strategies were employed to enhance the methodological rigour of this inquiry, including careful design strategies to ensure sufficient sampling, researcher reflexivity, maintaining an audit trail, and immersion in the data (Hunt, 2009; Maxwell & Mittapalli, 2010; Thorne, 2016; Thorne, 2008). These will be explored in more detail in later sections.

4.3.2 Quantitative Methodology

Phase 2 utilised a quantitative methodology whereby an online questionnaire was distributed to health care providers to measure professionals' maternal mental health knowledge. The quantitative approach undertaken was non-experimental as there was no manipulation of any variable in the study (SAGE, 2020). The quantitative analysis undertaken explored relationships between variables, with the cautionary note that correlation or any relationship does not imply causation. Quantitative methods emphasise objectivity and aim to generalise findings widely (SAGE, 2020). Therefore, the statistical findings from Phase 2 data should offer insights applicable to the overall level of healthcare providers' knowledge about maternal mental health within the Health Sector in KSA. This chapter proceeds by outlining sampling, recruitment procedures, required research materials, research methodology, and relevant analyses for both phases in turn.

4.4 PHASE 1

In Phase 1, participants include both women (pregnant and postnatal) and healthcare providers (HCPs). The details of this phase are elaborated in two separate sections, each dedicated to the respective participant group. However, if there were overlapping criteria

applicable to both groups, these are discussed within a shared section to ensure clarity and cohesion.

4.4.1 Study Setting

This study was conducted in the Maternity and Children's Hospital (MCH), Hail, Kingdom of Saudi Arabia. Hail is a city located in north-western of Kingdom of Saudi Arabia and has only one maternity hospital. The obstetric clinics in MCH provided follow-up care for 26,122 pregnant women and supervised 3439 births during six months of the year of 2021 (MCH, 2021). The MCH, which provides free health services to all pregnant and postpartum women in the region, also provides free paediatric and medical treatments. Pregnant women are seen by obstetricians on a regular basis, with antenatal care appointments every four weeks in the first and second trimesters and every one to two weeks in the third trimester (MOH, 2020a). The Clinic for Psychological and Cognitive Behavioural Therapy for Women was opened in 2020 (MOH, 2020a).

4.4.2 Participants and Sampling

Women

Purposive sampling was employed to select a diverse range of participants, chosen based on specific characteristics that were anticipated to influence their perspectives (Thorne, 2016). Pregnant, and postnatal women were recruited from the MCH and selected depending on the following inclusion and exclusion criteria:

Inclusion criteria:

- Pregnant women aged 18 years or over.
- Postnatal women aged 18 years or over (from seven days after birth up to 12 months postpartum).
- Able to provide informed consent to participate in the study.
- Able to read and speak the Arabic language.

Exclusion criteria:

- Women who have a stillbirth or preterm birth or unwell baby

HCP

Purposive sampling was also used in this group and recruited in MCH according to the following inclusion and exclusion criteria:

Inclusion criteria:

- HCPs who have direct contact with pregnant and postnatal women (nurses, physicians, healthcare workers and midwives).
- Able to provide informed consent to participate in the study.

Exclusion criteria:

- Any HCPs without direct contact with pregnant or postpartum women.

Women and healthcare providers were interviewed continuously until enough information was gathered; a point known as data saturation. Data saturation occurs when no new insights are obtained from further interviews (Hennink & Kaiser, 2022). As outlined by Thorne (2016), the decision to cease sampling was based on the point at which it was deemed that any further data collection would no longer contribute to a deeper understanding of the phenomenon. In this study, data saturation was reached after 10 interviews with women and 10 with healthcare providers as no additional information emerged from subsequent interviews.

4.5 PUBLIC AND PATIENT INVOLVEMENT

Public and Patient Involvement (PPI), as defined by the National Institute for Health Research (NIHR), refers to conducting research *with* or *by* members of the public, rather than merely *to*, *about*, or *for* them. Involving patients in the design and execution of research enhances the study's quality and relevance to the population under investigation (NIHR, 2021). According to the Health Research Authority/INVOLVE (2016), PPI also contributes to making research more ethical. It does so by ensuring the research is more appropriate, determining what is acceptable to participants, improving the consent process, and enriching the experience of women participating in the research.

The current study incorporated PPI through an advisory group consisting of antenatal and postnatal women in Hail, Saudi Arabia, who were not part of the main participant sample. This advisory group played a crucial role in testing and refining the interview process and materials. Specifically, their involvement allowed the trialling of the interview, rehearsal of the interview process, and feedback for improving the interview scenarios and questions. Additionally, they participated in discussions on the best approaches for conducting Phase 1 (women) and reviewed all related research documents to ensure suitability for the target population.

The advisory group included five women from the local Saudi community in Hail city: two pregnant women and three postpartum women who met twice. Their contributions were invaluable in developing, debating, and making recommendations on the interview scenarios and questions, ensuring they were comprehensible and culturally appropriate. Beyond

providing feedback on the interview process, the advisory group served as a point of reference for the study participants, offering insights that significantly shaped the research. Engaging with these women helped the research to incorporate community views on maternal mental health and access to mental health services. This focus ensured the study addressed real issues relevant to the population and respected the cultural and societal context of the participants. The advisory group's insights and suggestions were instrumental in shaping the interview process and enhancing the quality of data collection, fostering a collaborative and inclusive approach. However, PPI involvement in the analysis and interpretation stages was not included due to due to personal responsibilities and time constraints. These women, who were already balancing family and professional commitments, felt they could not dedicate further time to the analysis phase. Their priorities, such as caregiving and other societal expectations, made it difficult for them to participate in the later stages of the study, which made it difficult for the limited pool of available women to contribute to the analysis phase. As a result, although the insights from PPI involvement in the analysis could have enriched the findings, practical limitations led to the decision to restrict their involvement to earlier stages of the research.

In summary, the advisory group's involvement was pivotal in making sure the research was relevant to maternal mental health issues and was conducted in a way that considered and respected the participants' perspectives and needs.

4.6 ETHICAL CONSIDERATIONS AND RECRUITMENT

Ethical approval for this study was granted from University of East Anglia (UEA) by the FMH S-REC (Ethics Reference Number: ETH2122-1494, Date: 13 May 2022) and by the Ministry of Health via the Hail Health Cluster in Saudi Arabia (IRB Number: 2022-37, Date: 22 May 2022). Appendix C contains the approval letters.

The administrative department in the study venues was approached to seek permission to conduct the study and to have access to the MCH**.** The recruitment flyer included the research title, aim, eligibility criteria, and researcher contact information (email, mobile number) for women to contact the lead researcher if they were willing to participate. The recruitment flyer can be found in Appendix D. Before each interview, participants were asked to read the participants information sheet (see Appendix E), which described the nature of the research study, who was involved, and how their data would be used. Before participating, each participant provided informed consent by signing a consent form (see Appendix F). Before and after the interview, all participants were given the opportunity to ask questions about the research and were informed of their right to withdraw from the study. The confidentiality and

security of data were also given careful consideration. The researcher did not ask for or know the identity of each participant. To identify each participant, they were given a unique number to allow differentiation and maintain confidentiality. In addition, all collected data, documents, digital recordings, and transcriptions were stored and kept securely in a locked place in my home. After this, all data were scanned and saved in the UEA OneDrive password-protected computer. The researcher was the only one with access to this information.

Ethically, if a participant discloses suicidal thoughts or concerns about their mental health during the study, it raises significant issues regarding confidentiality and duty of care. As a researcher, I am committed to maintaining confidentiality while prioritising participant safety. It is important to note that in this study, none of the participants disclosed suicidal thoughts or concerns about their mental health. However, if such disclosures were made, it would have required breaching confidentiality to ensure immediate support and intervention, aligning with my duty of care to protect participants' well-being.

4.6.1 Women

For the women's group, the recruitment flyers were distributed in the outpatient clinics in the MCH waiting halls and reception to attract potential participants for the study. All interviews were held in rooms in the antenatal/postnatal clinics or maternity unit or education/counselling room, which were quiet and private. Prior to each interview, participants were asked to disclose only as much personal information as they felt comfortable to. The researcher was aware that reflecting on personal mental health issues could cause distress, so a debriefing period was scheduled at the end of the interviews. In addition, participants were given information and contact information for local counselling and support services (see Appendix I).

Both the EPDS and PHQ-9 screening tools were integrated into the research process to complement the qualitative data collected through interviews (see Appendix K). This dual approach allowed for a robust assessment of the participants' mental health, providing both detailed personal experiences and quantifiable data on depressive symptoms. After each interview, the participants were informed about the purpose of the screening tools and given the opportunity to complete them. Instructions were provided to ensure that they understood each question and the response format.

4.6.2 HCPs

For HCPs, an invitation letter was distributed throughout the offices and departments around MCH facilities. All interviews were conducted at locations preferred by the HCPs in MCH.

4.7 DATA COLLECTION

Each participant engaged in a semi-structured face-to-face interview, which was recorded with the participants' consent using digital audio recording devices, and the audio was transcribed verbatim afterward. After each interview, a brief synopsis was written to capture the overarching narrative and noted any contextual details that could enhance understanding. This method facilitated a thorough exploration of participants' perspectives while upholding their autonomy and confidentiality. Upon completing the interview, the participant was thanked for their involvement in the study and invited to provide any additional feedback. All participants were informed that the study was part of a doctoral thesis and assured that their information would be used anonymously. Conducting the interviews in person facilitated rapport building between the interviewer and the interviewee. This is because, according to Fox (2009), in-person interviews are particularly effective for gathering high-quality data as they allow the interviewer to observe nonverbal cues, a crucial factor when discussing sensitive topics such as mental health issues. Transcriptions were carefully reviewed and cross-checked with the audio recordings to ensure accuracy and completeness.

The interviews were conducted over a period of three months, from 6th June to 29th August 2022, ensuring thorough data collection and analysis. The entire process was carefully planned and executed to elicit honest and meaningful insights from the participants.

4.7.1 Women

Interviews took place individually with 10 women (five pregnant and five postnatal). Prior to the in-depth interviews, interested Saudi women filled out the informed consent form and the translated socio-demographic information (see Appendix F and G). After this they were assessed on their mental health using the EPDS and PHQ-9 tools. Those with high scores of EPDS and PHQ-9 were advised to seek an appointment with a responsible healthcare professional. They were also provided with information about local counselling and support services to assist them in accessing appropriate care, both in-person and online, based on their preferences (see Appendix I). Most interviews lasted around 25 minutes.

4.7.2 HCPs

In this study there were also 10 HCP participants, and prior to the in-depth interviews, interested HCPs filled out the informed consent form and the translated demographic information (see Appendix F and G). Most interviews lasted around 20 minutes.

4.8 INTERVIEWS

When developing the interview questions, it was imperative that they be clear, concise, and engaging, in line with Bolderston's (2012) recommendations. Additionally, drawing on my familiarity with the customs and societal norms of Saudi women and HCPs, I adopted an insider's perspective (Agee, 2009; Maxwell, 2013). This reflexive approach is further explored in Section 4.11, where I examine both epistemological reflexivity focusing on the assumptions that informed the research and their impact on the study, and personal reflexivity, focusing on the researcher's influence on the research process.

Interviews were conducted in Arabic, the official language of Saudi Arabia. This is because conducting interviews in a language that is not the participant's first can expose linguistic or cultural limitations and disrupt the flow of conversation and breadth of expression (Mangen, 1999). To ensure the interviews produced comprehensive data, topic guides were originally produced in English. This allowed my supervisors at UEA to provide input on interview structure and ensured that the questions addressed relevant topics suitable for the target population (Behling & Law, 2000).Subsequently, I translated all research documents into Arabic.

4.8.1 Women

The semi-structured interviews were guided by a scenario hypothesis designed to facilitate open discussion among women, considering the cultural sensitivities surrounding the expression of feelings on sensitive topics in Saudi culture. The hypothetical scenarios were developed by the researcher and were based on previous literature and tailored to address specific research questions. These scenarios represented either a pregnant woman or a postnatal woman, depending on the participant's status (see Appendix H) This approach aimed to create a comfortable environment where participants could relate to the scenarios presented and share their perspectives without reserve. The goal was to explore themes concerning mental health issues during pregnancy and the postpartum period, with the interview schedule encompassing broad topics and prompts to encourage participants to freely express their thoughts and experiences.

Building scenario questions for the interview process involved creating hypothetical situations reflecting real-life experiences and challenges related to the research topic. These scenarios prompted participants to think critically, reflect on their beliefs, and provide insights into their perspectives on mental health during pregnancy and the postpartum period. Crafted to be engaging and thought-provoking, scenario questions stimulated conversation and encouraged participants to share their thoughts, emotions, and potential solutions. For example, one scenario question may have focused on a hypothetical situation in which a pregnant woman, named Fatimah, is experiencing feelings of anxiety and sadness but has not shared these feelings with her family or healthcare provider. Participants were asked to consider what they would do if they were in Fatimah's situation, how they would advise her, and whether they felt it was important for Fatimah to seek help and support.

Another scenario question asked participants to reflect on their own experiences or those of someone they know who has faced mental health challenges during pregnancy or the postpartum period. Participants could discuss the signs and symptoms they observed, how they would respond to the situation, and what they observed. By incorporating scenario questions into the interview process, a more dynamic and engaging conversation was possible that allowed a deeper exploration of the participants' thoughts, beliefs, and experiences than would otherwise have been possible. For a complete list of scenario questions, see Appendix H.

The interview schedule was structured around five main topic areas, focusing on different facets of mental health awareness and practices among Saudi women. These topics were as follows:

1. Saudi women’s general awareness/ knowledge of mental health during pregnancy and postpartum period. Questions within this topic explored participants’ level of awareness/ knowledge towards mental health.
2. Dealing with the emotional impact of mental health issues during pregnancy and the postpartum period.
3. The sharing of mental health issues in pregnancy and the postpartum period.
4. Cultural beliefs, attitudes, and practices of Saudi women in terms of mental health awareness.

5. The usefulness of current services or the barriers that blocked the women from asking for help with mental health struggles. It was hoped that this would inform practice and gaps in knowledge regarding such services relevant to this population by assessing these services.

The interview schedule was used in all interviews to ensure that the full scope of topics was covered while also allowing for participant-led topic areas to be raised and subjects/questions to be rearranged according to the natural course of the discussion. The sequence of topics and the way these topics were developed were dictated by the manner in which the interview progressed and determined by participant responses. For the full interview guide schedule, see Appendix H.

4.8.2 HCP

The semi-structured interviews for these participants were also developed based on previous literature and designed to address specific research questions. For the full interview guide schedule, see Appendix H. The interview guide questions covered the following six themes connected to mental health knowledge and expertise in the healthcare industry, focusing on different facets of maternal mental health knowledge and practices among HCPs that had direct contact with pregnant and postnatal women:

1. To understand views and process relating to starting a discussion on mental health concerns.
2. To understand what is done professionally once the concerns around mental health identified.
3. To understand the existing professional skill/knowledge regarding maternal mental health.
4. To understand the perceived level of professional competence to support perinatal or postanal women with mental health issues.
5. To understand existing institutional pollicises for onward referrals and support mechanisms.
6. To understand the barriers/enabling factors for provision.

4.9 STRUCTURED SCREENING TOOLS

Following the in-depth interviews, a structured assessment was conducted using two standardised screening tools: the EPDS and Patient Health Questionnaire-9 (PHQ-9). Within

the cultural context of Saudi Arabia, by first building rapport and trust through the in-depth interviews, the participants were more likely to feel comfortable and open during the subsequent structured assessment. These tools were employed to systematically evaluate the mental health status of the participants, with a particular focus on identifying symptoms of perinatal and postpartum depression.

4.9.1 Edinburgh Postnatal Depression Scale (EPDS)

The EPDS is a widely used screening tool specifically designed to detect symptoms of postnatal depression. Developed by Cox *et al*. (1987), it consists of 10 self-report items, each rated on a four-point scale ranging from 0 to 3. The items assess the frequency of depressive symptoms experienced over the past seven days, including mood, anxiety, and anhedonia. The total score is calculated by summing the responses, with a maximum possible score of 30. Scoring 10 or more points and/or selecting the answers confirming the desire for self-harm indicate the probability of PPD. Each woman was asked to reflect on her feelings over the past week and rate each item accordingly. The EPDS Arabic version (see Appendix K) was chosen due to its validated use in diverse populations and its sensitivity to the specific emotional states encountered during the postpartum period. This tool provided a structured means to gauge the emotional well-being of participants following their qualitative disclosures.

4.9.2 Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is a versatile screening instrument used to measure the severity of depression. Developed by Spitzer *et al*. (1999), the PHQ-9 comprises nine items aligned with the criteria for major depressive disorder in the DSM-IV. Each item is rated on a four-point scale from 0 (not at all) to 3 (nearly every day), reflecting the frequency of depressive symptoms over the past two weeks. the total score is the sum of the item responses, ranging from 0 to 27. Scores are typically interpreted as follows: 0-4 (minimal depression), 5-9 (mild depression), 10-14 (moderate depression), 15-19 (moderately severe depression), and 20-27 (severe depression). After the completion of the EPDS, participants were asked to complete the PHQ-9 questionnaire. This provided a broader perspective on their mental health during the perinatal, and postpartum period, capturing symptoms of depression that may be present during pregnancy or at postpartum period. The PHQ-9 Arabic version (see Appendix K) was utilised due to its broad applicability and effectiveness in detecting depressive symptoms in general populations, including pregnant and postpartum women. Its inclusion provided a comprehensive assessment of the participants' mental health status.

4.10 RIGOUR AND TRUSTWORTHINESS

To ensure the rigour and trustworthiness of the research, various validation strategies are needed (Creswell & Miller, 2000). This can be measured using the following four criteria: credibility, transferability, confirmability, and dependability (Creswell & Creswell, 2018). In this present research, for example, triangulation from interviews and field notes were used to ensure credibility. The following sub-sections detail the measures taken to ensure that each of the four criteria were met.

4.10.1 Credibility

Member checking

After each interview, the key insights from the conversation were summarised, these summaries were presented to the participants. Each participant reviewed the summary of her/his experience and provided positive confirmation, which ensured that the researcher's interpretation accurately reflected their perspectives. This step not only validated the understanding of each participant's viewpoint but also allowed them to clarify and correct any misunderstandings, thereby empowering them to convey their intended meanings effectively.

Peer review and debriefing

In this study, the data, coding, and interpretations were discussed with academic supervisors to gain external perspectives and to identify any biases or assumptions that may have influenced the analysis. The supervisory team also validated the findings to ensure that the interpretations were accurate and the results applicable in broader contexts, thus upholding the rigour of the research throughout this Phase (Shenton, 2004).

Triangulation

Several triangulation strategies were employed to enhance the rigour of the research. Data source triangulation was achieved by collecting insights from diverse participant groups, including pregnant and postpartum women, and healthcare providers. Investigator triangulation was used to allow collaborative data analysis by a multidisciplinary research team, reducing individual bias. Temporal triangulation (achieved via interviewing participants at different stages of pregnancy and postpartum, and different roles of HCPs) allowed the identification of changes in experiences over time. These triangulation strategies collectively strengthened the credibility, dependability, confirmability, and transferability of the findings, ensuring a comprehensive and nuanced understanding of maternal mental health within Saudi society.

4.10.2 Transferability

Audit trails

In this study, transferability was ensured by offering detailed descriptions of the research settings, context, participants, and the structured data collection and analysis processes. The results of this research were also compared with the findings of previous studies, as presented in chapter 5 and 7. This thorough approach enables readers to assess the applicability of the study's findings to different contexts and populations.

4.10.3 Confirmability

External audits

Efforts were made to guarantee that the findings accurately reflected participants' perspectives rather than the researcher's biases. The findings were substantiated using quotes from participants' interviews, which were originally conducted in Arabic, and then discussed with team members before being reported in English. To guarantee translation accuracy, a random sample of anonymised translated transcripts was back translated into Arabic and verified by a professional bilingual translator. A comprehensive audit trail was maintained, including audio recordings, original interviews, coding processes, transcripts, and personal notes, all of which are detailed in the data analysis section.

4.10.4 Dependability

In this study, all interviews were conducted using the same semi-structured interview guide (women and HCPs). This helped improve the results' dependability as the participant could freely express their opinions in relation to the subject under investigation.

4.11 REFLEXIVITY

Reflexivity involves critically reflecting on the researcher's influence throughout the research process and how they contribute to meaning-making (Nightingale & Cromby, 1999). Reflexivity is a key component of any qualitative research as it allows researchers to offer a thoughtful and impartial perspective on their own experiences and descriptions of the study's context and culture (Smith, 2006). Through reflexivity, researchers can transparently disclose their socio-cultural standpoint, enabling readers to grasp how their position or social context might have influenced the research process. This self-awareness facilitates a critical examination of potential biases or impacts on the study's outcomes. One particularly effective strategy for practicing reflexivity involves holding regular meetings with a research team such as the researcher's supervisors. In this study, supervision was provided by two UK-based

supervisors who actively engaged in discussions regarding data analysis. Their diverse contextual background from the researcher proved advantageous, enabling them to ask critical questions and identify issues that might have otherwise been overlooked.

In addition, to mitigate the risk of imposing the researcher's viewpoints, her assumptions and thoughts were meticulously documented in a reflective diary that captured her emotions, attitudes, and understanding of the studied phenomenon. Furthermore, each recorded interview was carefully listened to multiple times during transcription, translation, and analysis stages to ensure that assumptions were minimised. Finally, in conducting this study, I built on the insights of previous researchers and leveraged my own research experiences to inform both the conceptualisation and the data collection processes (Clingerman, 2007; Warr, 2004). This approach helps researchers develop a nuanced understanding of their topic, enrich their analysis, and gain insights into the participants' behaviours (Holland, 2007; Hubbard *et al*., 2001; Rager, 2005).

Reflecting on my journey, I initially engaged with women experiencing psychological issues during pregnancy and the postpartum period as a nursing student. Subsequently, my role as an instructor in the antenatal department from 2017 till 2020 further deepened my understanding and empathy towards these women's challenges. These experiences profoundly influenced my decision to pursue research in maternal mental health. Personally, experiencing pregnancy and the postpartum period also shaped my perspective, influencing how I interpret and construct meaning in this study.

This reflexivity underscores my genuine motivation and personal connection to the topic, aiming to understand and improve support for women facing similar challenges. By acknowledging my background and experiences, I aim to maintain objectivity in my research while leveraging empathy and insight gained firsthand. This transparency enhances the authenticity of my approach and underscores the relevance of my research to the lived experiences of pregnant and postnatal women.

I am confident that my personal experiences will significantly enrich and benefit my research, deepening my understanding of maternal mental health issues. As a nursing student and later an antenatal instructor, I closely interacted with women facing psychological challenges during pregnancy and the postpartum period. These interactions sensitised me to the complexities of PMH, sparking a profound interest in further exploration. My experiences have instilled in me a deep empathy for pregnant and postnatal women, influencing my decision to pursue this project. I believe that a qualitative approach allowed me to immerse myself in the

world of Saudi women and HCP, gaining firsthand insights into their awareness, knowledge, beliefs, and attitudes toward mental health. This approach aligns with my goal of conducting research that is academically rigorous and sensitive to the lived experiences of the participants.

By leveraging my personal experiences, I aim to bring authenticity and depth to my study, ensuring that the voices and experiences of Saudi women are accurately represented. This reflexivity underpins my research journey, guiding my approach and methodology to capture the complexities of maternal mental health in Saudi Arabia.

4.12 DATA ANALYSIS

Using an interpretive descriptive methodology, the study operates within a coherent organisational framework (Thorne, 2016; Thorne, 2008). This approach provides flexibility, allowing the incorporation of diverse analytical methods as long as they align with the overall aims and theoretical stance of the research Reflexive Thematic Analysis (RTA), developed by (Braun & Clarke, 2006, 2022; Braun et al., 2023), was used for both qualitative studies involving women and healthcare providers. RTA is an easily accessible and theoretically flexible approach to qualitative data analysis, facilitating the identification and analysis of patterns or themes in a given dataset (Braun & Clarke, 2022).

RTA can be carried out in one of two ways: (1) theoretical or deductive, which is known as thematic analysis driven by existing theory; or (2) inductive, which is known as thematic analysis driven by the data itself (while acknowledging that the researcher's interpretive description frameworks and philosophical commitments will always shape their engagement with the data) (Braun & Clarke, 2022). A theoretical TA was considered inappropriate as it uses a top-down approach guided by pre-existing theory because there is scant literature exploring the awareness and knowledge of antenatal/postnatal Saudi women in mental health. Instead, in an effort to keep the focus on the participants' experiences, inductive (TA) was chosen, with themes being identified through the data.

RTA is a method that helps identify patterns of themes in the data using a six stages process of the data analysis (Braun & Clarke, 2022). In conducting this study, I adhered to Braun and Clarke’s 15-Point Checklist of Criteria for Rigourous Thematic Analysis to ensure a comprehensive and systematic approach. This framework provided clear guidelines for thoroughly engaging with the data, allowing for the development of nuanced and well-supported themes. By following these criteria, I aimed to enhance the credibility and reliability

of the analysis. Below is a detailed table outlining how each criterion was applied throughout the thematic analysis process.

Table 4.2

15-Point Checklist of Criteria for Rigorous Thematic Analysis (Braun & Clarke, 2022)

Process	No	Criteria	How the thesis achieved the criteria
Transcription	1	The data were transcribed to an appropriate level of detail, and the transcripts were checked for accuracy against the records.	I transcribed all the interviews. I listened to the recording several times alongside the transcriptions, correcting inaccuracies, adding intonation, pauses, etc.
Coding	2	Each data item was given equal attention in the coding process.	By carefully reading and rereading the transcripts for each interview and noting initial ideas. I then used manual data driven coding and developed a codebook. Most of the coding was semantic, maintaining strict adherence to the participant's understanding of their own experiences. Latent coding was used to look beneath the surface-level meaning of what participants had said (see Appendix P for examples of the codes used).
	3	Themes were not generated from limited vivid examples (an anecdotal approach), but instead the coding process was thorough, inclusive, and comprehensive.	Following the coding process, I thoroughly generated the themes by considering every example.
	4	All relevant extracts for each theme were collated.	By categorising extracts into initial groups based on their theme.
	5	Themes were checked against each other after extracts had been collated.	I reviewed all collected extracts, making sure they were all relevant to the themes to which they had been assigned.
	6	Themes were internally coherent, consistent, and distinctive.	I went over each theme numerous times to make sure it was distinct, logical, and coherent.
Analysis	7	Data analysis was conducted via interpretation rather than mere paraphrase or description.	I identified the story that each theme told rather than simply paraphrasing or describing it.
	8	Analysis matched with data, ensuring the extracts illustrated the analytic claims.	By thoroughly reading the evidence for each theme, I ensured that the analysis and data reflected each other.
	9	Analysis told a convincing and well-organised story about the data and topic.	When I wrote each theme story, I made certain that the reader could easily understand the entire story.
	10	A good balance between analytic narrative and illustrative extracts was provided.	I chose quotes that best identified and supported the themes and sub-themes.
Overall	11	Enough time was allocated to complete all phases of the analysis without rushing a phase or failing to explore it deeply.	I gave my analysis enough time overall and did not rush any stage of the process.
Written Report	12	The assumptions about, and specific approach to, thematic analysis was clearly explicated.	Because I followed the thematic analysis in a stepwise process, my assumptions were clearly explicated.
	13	There was a good fit between what between I claimed to have done and what I showed I had done (i.e., described method and reported analysis are consistent).	When I was writing the report, I clearly described the method of analysis I used in the research.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.	I chose the language so that the reader could easily understand it and identify the concept of the analysis.

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	15	The researcher is positioned as active in the research process; themes do not just emerge.	The methodology section specifically mentions researcher reflexivity, and the researcher actively developed the themes.

Unveiling Maternal Mental Health: Exploring The Perceptions And Practices Of Mental Health Care For Pregnant And Postnatal Women In Kingdom Of Saudi Arabia: A Mixed Methods Study

In this study, key elements of RTA included the precise translation of the transcripts from Arabic to English. Each interview was transcribed verbatim in Arabic and saved in Microsoft Office Word documents. To maintain the accuracy of the translation, each transcript was checked twice by the interviewer to ensure accuracy by listening and re-listening to the audio recording and comparing this with each transcript. The researcher, who is bilingual in Arabic and English, translated the transcripts word-by-word and line-by-line from Arabic into English. Following this process, a sample of transcribed Arabic words and sentences were sent and checked for the translation with the assistance of a professional bilingual translator to ensure rigour (see Appendix J). Arabic has a sophisticated vocabulary; a single Arabic term can have multiple meanings in English, so translation was a time-consuming and challenging process. This process involved multiple careful readings and repeated reviews of the transcripts in their original Arabic form. Subsequently, a thorough examination of the English translations was conducted to ensure a deep and accurate understanding of the content. This meticulous method was implemented to ensure the integrity and faithfulness of the translated material.

Memos were used throughout this process to make notes about my experience with the data, to note anything I felt might be referencing my own experience, and to consider what I was drawn to in the data. Rather than working with computer software, I used manual coding because I did not have the opportunity to train on these programmes. I coded interviews using the “comment” feature in each transcript's Microsoft Word document, highlighting the relevant text excerpt for each code comment (see Appendix P for an example). I took this approach so that I could easily export my coded quotes for use in my theme construction later. Following this, the codes were gathered into an Excel document. It was critical to writing up the codes separately from the data in this manner to confirm that the codes captured meaning in a way that can be understood in isolation. As a result, the wording of some of the codes was refined at this stage. I began to notice some patterns in the data while coding, so in addition to coding, I created some rough drawings of ideas that could later be used in developing thematic maps. (for examples see Appendix Q and R).

The scores from the EPDS and PHQ-9 were analysed to identify patterns of depressive symptoms within the study population. These quantitative measures were then cross-referenced with qualitative insights to provide a comprehensive understanding of the women's mental health.

4.13 PHASE 2

Phase 2 of this study aimed to enhance and refine the findings from Phase 1 by employing a quantitative cross-sectional design and convenience sampling. A survey was administered to assess HCPs' knowledge of maternal mental health issues. Complementing the prior qualitative data, the quantitative survey provided additional insights into HCPs' perceptions and experiences. This mixed-method approach addressed the perceived limitations of each method individually and enriched overall understanding. Further details of this phase are elaborated in the subsequent sections.

4.13.1 Study Setting

This study was conducted via an online platform to allow the canvassing of the maximum number of HCPs possible from different sites across Hail region, KSA. Hail region consists of 110 primary Health Care Centres and 14 hospitals (MOH, 2020c). HCPs were recruited online through announcements for participation in the survey via the internal communication of the Ministry of Health platform. Internal communication meant the distribution (meaning the transfer and sharing) of information within the governmental institution, through which the representatives of the institution achieved the necessary influence to motivate employees towards achieving the main objectives of the governmental institution and to ensure transparency and clarity. The purpose of distributing or sharing work-related communication was to ensure that employees were familiar with the basic information about the institution, as well as to increase their level of satisfaction and participation in its activities and thus ensure their loyalty to the institution.

4.13.2 Population and Sample

Healthcare providers (HCPs) were selected depending on the following inclusion and exclusion criteria:

Inclusion criteria

- Nurses, physicians and midwives.
- Able to provide informed consent to participate in the study.

Exclusion criteria

- Pharmacists or any employees without direct contact with pregnant or postpartum women.

4.13.3 Research Instruments: Questionnaires

Demographic information

Based on earlier research on the demographic's details of HCPs and their knowledge of mental health concerns that may arise during the motherhood phase, a variety of demographic information was gathered from the participants. This comprised gender, nationality, age, job title, educational level, years of experiences, work sector, work location, and whether they had worked with antenatal and postnatal women before. They were also asked if they were familiar with pregnancy-related mental health problems and if they had used any tools to assess/detect mental health issues.

Survey questionnaire

Data on the knowledge of mental health problems during antenatal and postnatal periods in KSA was collected using an online cross-sectional with a 20-item questionnaire. Participants were asked to fill out the questionnaire, which contained a set of standardised questions adapted from a validated instrument used in the literature and devised by (Jones et al., 2011) (see Appendix O), ensuring it was grounded in previous research and best practices. Permission to use and adapt the scale was granted by the original author (see Appendix M). These questions were designed to gauge respondents' understanding and awareness of critical aspects of perinatal depression and PPD, including onset, incidence, comorbidity, symptoms, associated risk factors, assessment, and therapeutic interventions. Understanding the incidence of perinatal depression and PPD is essential because it helps gauge HCPs' awareness of how common these conditions are within the population they serve. This awareness is critical in early identification and intervention, which can significantly improve outcomes for affected women. This survey thus provided a structured approach to assess not just the factual knowledge of HCPs, but also their awareness and readiness to address maternal mental health issues. By exploring various facets of these conditions, the survey was able highlight areas where additional training or resources might be needed.

According to the Jones *et al*. (2011), items were drawn from BeyondBlue's National Baseline Survey—Health Professional Knowledge Questionnaire, which surveyed general practitioners, midwives, mental health nurses, and maternal child health nurses. Items also were developed from a review of the literature and the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision. Items were then critically reviewed by two maternity researchers. The 20-item survey was pilot tested with a group of master of midwifery students (n=13) to establish reliability and face validity. Items were subsequently amended in

consultation with the two expert maternity researchers prior to distribution. The Laboratory of Educational Research Test Analysis Package Version 5 was used to examine item difficulty, item discrimination, and internal consistency (i.e., reliability) for the final 20-item survey. The Cronbach's alpha was 0.69. Statements were classified into three domains, allowing the researcher to evaluate expertise in three distinct areas of mental health. The three domains were defined as follows: knowledge treatment (four items), knowledge education (12 items), and knowledge assessment (four items). The results of this survey shed light on HCPs' training and knowledge, identifying the gaps that need to be filled and assess where more education is needed in order to provide women with more information and raise their awareness about mental health.

Items and scoring

The questionnaire included 20 multiple-choice questions that measure respondents' awareness of the onset, incidence, comorbidity, symptoms, associated risk factors, assessment, and therapeutic interventions of prenatal depression and PPD. The participants selected one out of four possible responses provided for each item (only one answer was correct for each item), up to a total score of 20. The higher the score, the higher quality of knowledge was possessed by the HCP.

4.13.4 Previous Use of the Survey

The survey has been utilised in various studies across different populations.

Poland

- Study focus: Evaluate the mid-point of the PPD prevention strategy in Poland. Reference: Chrzan-Dętkoś *et al*. (2022).
- Study focus: Evaluate midwives' knowledge about prenatal and postnatal mental health disorders during the first six months of implementing a new standard of perinatal care. Reference: Magdalena and Tamara (2020).

Malaysia

- Study focus: Assess knowledge of perinatal depression among postnatal women. Reference: Arifin *et al*. (2020).
- Study focus: Investigate healthcare providers' knowledge and awareness of perinatal depression and the factors associated with it. Reference: Hassan *et al*. (2020).

4.13.5 Recruitment and Data Collection

An invitation to participate in the survey was published through the internal communication of the Ministry of Health platform (see Appendix L). After participants had clicked on the weblink, the first page of the survey was an invitation letter. This then led to the provision of the participant information sheet and consent form (see Appendix N), which restated that the results of the questionnaire were anonymous and contained a consent form to participate in the study. Completion and submission of the questionnaire implied their consent to take part and for their data to be used in the study. The recruitment took place over the course of four months from June 2022 to September 2022.

4.13.6 Sample Size

In this study, a convenience sample was used. However, the size of the target population was determined by the number of HCPs in Hail city. According to the Ministry of Health (MOH) statistics of HCP 2020 in Hail City, there were 3729 nurses, 1867 physicians and 55 midwives (MOH, 2020b). Therefore, an online sample size calculator tool from Creative Research Systems (http://www.surveysystem.com/sscalc.htm) was used to calculate the sample size. For a 95% confidence level, a margin of error not more than 5%, a minimum required sample size of 360 participants was determined, ensuring a precise estimate of the population's knowledge regarding maternal mental health. Additionally, a 10% non-response rate was included to account for potential incomplete responses. In this study, we aimed to achieve a non-response rate of 10%, supported by evidence from previous research and strategic design choices. Fortunately, HCPs are likely to be highly motivated to participate in such research due to the survey's direct relevance to their professional roles and its focus on maternal mental health, a significant aspect of their practice (Edwards *et al*., 2009; Sahlqvist *et al*., 2011). The researcher also employed effective recruitment strategies including personalised invitations and follow-up reminders, which are proven to enhance response rates significantly (Dillman *et al*., 2009; Robinson *et al*., 1991). The survey was also endorsed by credible institutions, which added to its perceived importance and likely participation by HCPs (Cook *et al*., 2000). Furthermore, integrating the survey into professional development contexts has shown to boost response rates (Nulty, 2008). In this study, 349 responses were obtained, achieving 97.22% of the planned sample size of 360 participants.

4.14 DATA ANALYSIS

Data were analysed using the Statistical Package for Social Science (SPSS) version 28. Descriptive statistics were utilised to present the distribution and frequency of participants' sex, nationality, age, current job, and education level, providing a clear overview of the characteristics of the sample. Additionally, descriptive statistics were employed to explore the frequencies and percentages of other sociodemographic factors among the respondents, offering insights into the diverse makeup of the study population.

Regarding the inferential statistics, the analysis of the normality of the variable "Level of Knowledge" can be discussed. This analysis involved conducting two key statistical tests – the Kolmogorov-Smirnov and Shapiro-Wilk tests – to evaluate the distributional characteristics of the data. The treatment, education, and assessment knowledge domains were scrutinised through descriptive statistics to elucidate participants' responses to study questions within each domain. Correct and incorrect answers were delineated, with correct responses coded as 1 and incorrect responses as 0. The analysis involved calculating the frequencies and percentages of correct and incorrect answers for each question within the respective knowledge domains, enabling a detailed understanding of participants' comprehension in each area. Furthermore, mean variables were computed to assess the overall level of knowledge among participants across the 20 survey questions. The categorisation into four knowledge levels – Weak (0-5), Satisfactory (6-10), Good (11-15), and Excellent (16-20) – allowed for a nuanced interpretation of participants' proficiency in the study domains.

In the inferential statistics section, a One-Way ANOVA was conducted to examine differences in participants' levels of knowledge across various demographic and professional factors. The independent variables (IVs) included nationality, age, current job, educational level, years of experience, and working sector, while the dependent variable (DV) was participants' level of knowledge on maternal mental health.

Multiple ANOVAs were performed to assess whether statistically significant differences existed between the means of each IV's levels. Additionally, correlation tests were utilised to explore the relationships between the study domains and participants' levels of knowledge. This analysis, involving all 349 participants, aimed to reveal any associations between the knowledge domains and the participants' proficiency levels, shedding light on the interplay between variables within the study framework. P values were considered statistically significant if they were less than 0.05.

4.15 ETHICAL CONSIDERATIONS

Before participating, all respondents were provided with a detailed information sheet outlining the study's purpose, and procedures. They were required to give their informed consent electronically before beginning the survey. This process ensured that participants fully understood their involvement and the nature of the research, addressing potential risks and ensuring that their participation was voluntary. The survey was conducted anonymously using the Microsoft Forms platform, which did not collect any personal identifying information from HCPs. Microsoft Forms complies with the General Data Protection Regulation (GDPR), ensuring adherence to European Union data protection laws. Once the survey was completed, all data were securely downloaded from Microsoft Forms and stored in OneDrive, in alignment with the University of East Anglia's (UEA) research data storage policy. Personal identifiers were not linked to the data at any stage of the research process.

To maintain confidentiality, all information gathered during the study was stored on a password-protected computer, accessible only to me. The collected data were exclusively used for research purposes. According to UEA's guidelines, these data will be securely retained for a minimum of five years following the conclusion of the research. They will be managed and stored securely in accordance with the University's Research Data and Materials Management Guidelines.

4.16 SUMMARY

This chapter has outlined the methodological groundwork undertaken to establish the study project. It presented an overview of the two research phases, discussed the significance of three core study values in shaping the project, and underscored the importance of each study component. Following this, the method for both Phase 1 and Phase 2 were provided, including details of participant recruitment, data collection, research procedure, and analysis process. Finally, the ethics process undertaken for the current study and ethical considerations were discussed. The next chapter present the findings from Phase 1: exploring women's and healthcare providers' perspectives on maternal mental health knowledge, understanding, and perceptions.

Chapter 5: Perspectives on Maternal Mental Health Consolidated Findings - Phase 1

5.1 INTRODUCTION

This chapter presents and integrates findings from the qualitative studies – Study 1 (women perspectives) and Study 2 (HCPs' perspectives) – to present a comprehensive and integrated exploration of the awareness, knowledge, and perception of mental health among pregnant and postnatal women, and healthcare providers. Additionally, it examines the barriers and facilitators for accessing mental health services for pregnant and postnatal women in Hail, Saudi Arabia. The conscious decision to merge these findings is driven by the recognition of common themes throughout the two studies, reflecting consistent patterns of challenges within the healthcare system and societal perceptions towards maternal mental health, as well as aligning with the mixed methods approach employed in this thesis. By synthesising these findings, the research aims to offer a more nuanced understanding of the complex interplay between women's and healthcare providers' knowledge levels, societal attitudes, and the structural barriers that impact the usage and delivery of mental health care.

5.2 DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

5.2.1 Study 1 (Pregnant and Postpartum Women)

The study sample consisted of ten women, half of whom were pregnant and the remaining half in the post-partum period. All study participants shared common characteristics, including being married, not engaged in employment, and possessing a bachelor's degree as their educational background. Table 5.1 presents demographic information, PHQ-9 scores, and EPDS scores of the ten study participants, divided into two groups: participants during pregnancy (coded as "P") and participants in the post-partum period (coded as "PP").

Table 5.1

Women's Sociodemographic Information, PHQ-9 Score and EPDS Score

Name	Age	Marital status	Educational level	Work status	Monthly income (Saudi Riyal)	No children	Spacing between children	PHQ-9 score	EPDS score
1P	33	Married	University	Non	2000-4999	0		12	19
2P	30	Married	University	Non	10000<	3	<2	14	9
3P	35	Married	University	Non	2000-4999	1	>2	5	11
4P	34	Married	University	Non	2000-4999	0		9	4
5P	33	Married	University	Non	10000<	4	<2	16	18
1PP	27	Married	High School	Non	10000<	2	<2	6	5
2PP	25	Married	University	Non	500-9999	1		19	19
3PP	29	Married	University	Non	10000<	1		2	4
4PP	38	Married	University	Non	10000<	4	<2	18	27
5PP	32	Married	University	Non	2000-4999	2	<2	17	12

The participants' ages ranged from 25 to 38 years. Among the pregnant participants (Ps), the average age was approximately 33.4 years, while the average age for those in the post-partum period (PPs) was around 30.6 years. All participants were Saudi, married, and had a university degree, except for one participant who had a high school degree. The study participants reported varying monthly incomes (Saudi Riyal), with three income ranges identified: 2000-4999, 5000-9999, and greater than 10,000 Saudi Riyals. Notably, the majority of PPs had higher incomes than Ps.

The number of children among the participants ranged from 0 to 4 children each. Additionally, spacing between children was categorised into two groups: greater than two years and less than two years. Among the Ps, spacing between children varied, while for the PPs, the majority had spacings of greater than two years.

In this study, the diversity in scores of the PHQ-9 spanned from 2 to 19, reflecting a wide spectrum of depression severity within the participant cohort. Specifically, the P group exhibited PHQ-9 scores between 5 and 16, indicative of mild to moderately severe depression, while the PP group PP presented a broader range from 2 to 19, with two individuals scoring in the moderately severe category, highlighting a more pronounced severity of depressive symptoms overall.

The EPDS also was deployed to assess postnatal depression severity among the study's participants. The EPDS scores, which extended from 4 to 27, illuminated the diverse spectrum of postnatal depressive symptoms experienced by the cohort. Within the P group, EPDS scores

were observed to fluctuate between 4 and 19, illustrating a range of symptom severities from minimal to moderate depression. Conversely, the PP group, exhibited a broader range of scores, from 5 to 27, with the upper end of this spectrum reflecting more severe depressive symptoms. Notably, one individual within this group recorded a peak score of 27, underscoring the presence of significant postnatal depressive symptoms.

In light of the ethical considerations inherent in conducting this research, particular attention was paid to participants who demonstrated higher levels of depressive symptoms after calculating their PHQ-9 or EPDS scores. Those with scores in the moderately severe to severe range were identified to their responsible doctor and nurse to ensure appropriate action, referral, and follow-up. Women were advised to seek professional medical evaluation and support for themselves. This approach underscores the study's commitment to participant welfare and the importance of prompt intervention in cases of significant mental health concerns. As part of the ethics procedures, participants were made aware of this onward referral process when they consented to take part in the study. Women were informed that they needed to seek medical advice, and healthcare providers were notified about the high scores of their patients to facilitate appropriate care.

Notably, during the interviews, two women (P1 and PP1) reflected specifically on the presented scenario, providing an outsider's perspective on societal views regarding pregnancy, postpartum attitudes, and mental health in the context of motherhood. Conversely, six women (P2, P3, P5, PP2, PP4, and PP5) drew upon their personal experiences or those of their relatives and friends, offering profound insights into their actual experiences concerning the described emotions. These women focused on themselves rather than the hypothetical scenario. Furthermore, two women (P4 and PP3) integrated both the scenario and their personal experiences into their responses.

Based on the demographic data in Table 5.1 above, there is no consistent relationship between demographic data (age, income, number of children, spacing between children) and the mental health scores of PHQ-9 and EPDS. However, the trimester for Ps and their mental health scoring reveals notable patterns. Participants in the second trimester (P3 and P4) generally scored lower compared to Ps in the third trimester (P1, P2, P5), suggesting a potential worsening of mental health symptoms as pregnancy progresses. This observation is supported by previous research, which has indicated that mental health symptoms, including anxiety and depression, tend to increase during the later stages of pregnancy. For instance, a study by Heron *et al*. (2004) found that depressive symptoms can escalate as women approach the third

trimester. Similarly, Dennis *et al*. (2017) reported that anxiety symptoms in the first trimester were 18.2%, increasing as the pregnancy progressed to 24.6% in the third trimester However, the limited sample size makes it difficult to draw definitive conclusions.

The analysis of participants in the postpartum period revealed a trend of higher scores in the early to mid-postpartum period, particularly within the first to second month-period postpartum. PPD is known to fluctuate over time, with EPDS scores potentially changing significantly as new mothers progress through the postpartum period (Subbiah *et al*., 2023). However, this trend was not universally observed across all participants, as evidenced by the scores of participants PP2, PP4, and PP5. These findings align with the general understanding that the early postpartum period can be a challenging time for women (Saharoy *et al*., 2023).

5.2.2 Study 2 (Healthcare Providers)

Table 5.2

Sociodemographic Profile of the Ten Healthcare Providers

Variable	Category	N
Gender	Males	3
	Females	7
Nationality	Saudi	6
	Non-Saudi	4
Age group	20-29	1
	30-39	5
	40-49	2
	50-59	1
	60-69	1
Specialty	Obstetrician-Gynaecologist	5
	Nurse	4
	Social worker	1
Education level	PhD	5
	Master	1
	Bachelor	2
	Diploma	2
Years of experiences	years 5≥	1
	years 6-10	3
	11≤	6
Years of experience in clinics	years 6≤	7
	years 2-5	3
Heard of pregnancy-related mental health problems	Yes	10
Used any tools to evaluate mental health status	Not used	9
	DSM-5	1

Table 5.2 summarises the data and shows that most of the respondents were female (70%), with the remaining 30% being male. In terms of nationality, 60% of the participants were Saudi, while 30% were from the Middle East and 10% from Europe. The age distribution showed that the largest proportion of participants fell within the 30-39 age group (50%), followed by 20-29 (10%), 40-49 (20%), 50-59 (10%), and 60-69 (10%) age groups.

Regarding specialties, half of the participants were obstetrician-gynaecologists (50%), 40% were nurses, and the remaining 10% were social workers. In terms of education level, 50% of the healthcare providers held a Ph.D. degree, 10% had a master's degree, 20% held a bachelor's degree, and another 20% had a diploma. Most respondents also had extensive professional experience, with 60% having more than 11 years of experience, 30% having 6-10 years, and the remaining 10% having ≤5 years of experience. Moreover, a significant proportion (70%) reported having over six years of experience specifically in clinics, while 30% had two - five years of clinic experience.

Interestingly, all healthcare providers in the study were heard of pregnancy-related mental health problems question. However, only a small proportion (10%) reported utilising the DSM-5 or any other tools to assess mental health status, with the majority (90%) not employing any formal tools for evaluation.

5.3 QUALITATIVE FINDINGS

As noted in the methodology chapter, RTA (Braun & Clarke, 2022) was used in these studies as the method of analysing the qualitative data. As illustrated in Figure 5.1, analysis of the individual interview data from the 10 women and 10 healthcare providers, once merged, led to the identification of four main themes: (1) Awareness and education on maternal mental health; (2) Stigma and shame; (3) Barriers to accessibility; and (4) Enhancing maternal mental health care'. These four main themes illustrate the participants' knowledge and perceptions regarding mental health, as well as facilities and the barriers that hinder the mental health care. Each theme is discussed in detail below, with quotes from the data to illustrate each point.

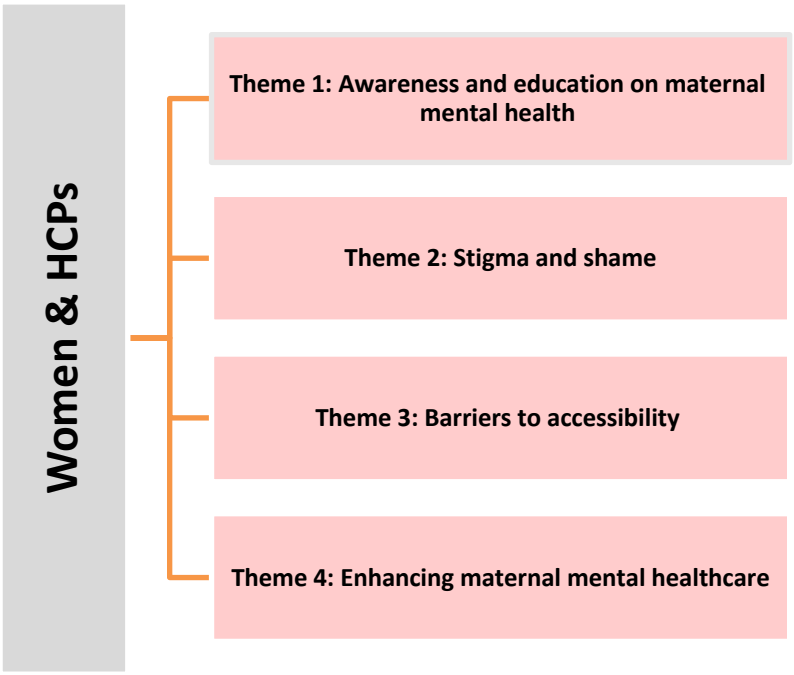

Figure 5.1 Themes from Studies 1 and 2 on maternal mental health

Additionally, a holistic view of the qualitative data studies and the two literature reviews combining themes was provided. Figure 5.2 shows the links between the two-literature reviews and the themes identified from the data collected in this embedded mixed method study. This integration allows for a comprehensive and holistic understanding of how personal, professional, and systemic factors interact to affect maternal mental health. Moreover, it allows for an in-depth exploration of emerging themes, enriched and validated by contextual insights from existing literature, which are further discussed later on.

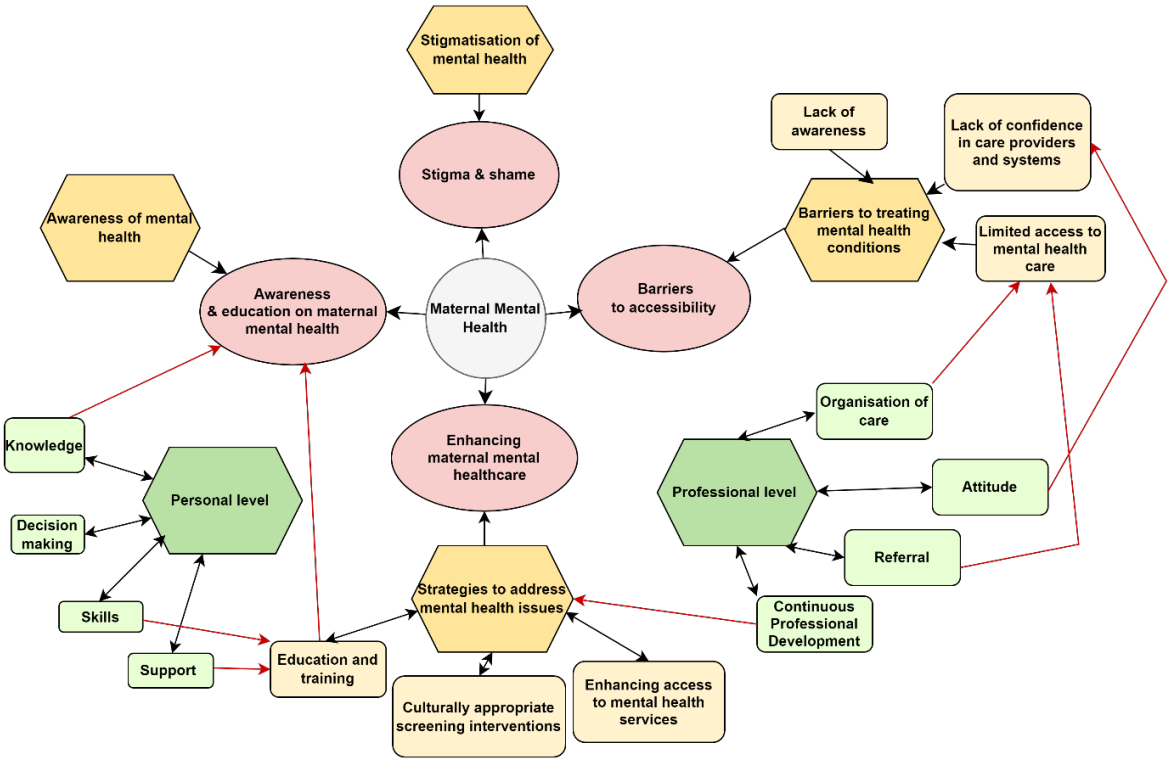

Figure 5.2 Integration of themes from data and literature (pink: themes from data; yellow: themes from literature related to women; green: themes from literature related to HCPs)

5.3.1 Theme 1: Awareness and Education on Maternal Mental Health

The theme “Awareness and Education on Maternal Mental Health" encapsulates the shortfall in women’s and HCP’s understanding and recognition of mental health issues during pregnancy and the postnatal period. For the women, it highlights the difficulty in distinguishing between normal emotional variations and those indicative of deeper mental health problems, emphasising widespread uncertainty among women regarding when professional help should be sought. In the context of HCPs, limited knowledge indicates the knowledge gaps within the healthcare system that impede effective identification, management, and support for mental health issues with pregnant and postnatal women in Saudi Arabia.

Limited awareness and knowledge

Both studies reveal a noticeable lack of awareness and knowledge about maternal mental health issues among both women and healthcare providers. From the women’s perspectives, some participants shared the belief that certain feelings and symptoms, such as sadness and disturbances, were normal occurrences during pregnancy and postpartum. This perception led some pregnant participants to mistakenly attribute signs of depression to typical pregnancy symptoms. For example, participant P4 emphasised the natural aspect of feeling emotions like sadness during pregnancy, especially when managing the responsibilities of motherhood. She

stated that *"it is normal because she is pregnant and has young children, so it is normal for her to feel these feelings".* Similarly, postpartum participants associated their feelings of sadness and distress with childbirth itself, attributing these emotions to hormonal changes and the upheaval brought about by the presence of a newborn. Participant PP2 discussed being informed about postpartum hormonal changes leading to feelings of depression and sadness but expressed uncertainty about how to cope with these emotions, indicating a lack of awareness and support. She explained the following:

> *"They told me that there are hormones after childbirth, I mean, such as depression and sadness, they told me that they are normal things and I do not know. What I understood from the people around me that they say this, and I don't know, I am now going through a Phase of sadness and a Phase of depression" (PP2).*

One participant (PP1) held a misconception that feelings of depression were expected immediately after childbirth but considered them abnormal if experienced two months postpartum, highlighting the need for accurate understanding and awareness of postpartum emotional challenges. She articulated the following to explain her beliefs about the scenario character:

> *"It is abnormal what is happening to her, because it happened to her two months after birth. It's possible if this happened to her a week or two after birth, it could happen because it would be a new event for her, something changed in her life, but after two months I expect that there is something abnormal" (PP1).*

Participant P1 shared that feelings of sadness, loss of appetite, and sleep disturbances were inherent to the pregnancy experience, linked to hormonal fluctuations and morning sickness. She remarked that:

> *"With pregnancy, this happens, such as loss of appetite, feeling sad, disturbances, and sleep problems" (P1).*

However, participant P3 related the loss of appetite during pregnancy to potential effects on a woman's mental well-being, particularly if the condition persisted and adversely affected her psyche. She noted the following:

> *"Because it is basically a loss of appetite, this is something that will definitely affect her health later. I mean, she is pregnant now and cannot eat or drink anything, normally this will affect her psyche" (P3).*

Despite recognising their own experiences aligning with the scenario's symptoms, some participants struggled to comprehend and address their emotions effectively. For instance,

participant PP2 revealed a prolonged experience of depression from pregnancy to the postpartum period, feeling similar to the scenario's character, Fatima. She said that:

> *"I've been through new things, because I don't know, depression has continued with me from pregnancy until now… It is not normal for behaviours to change because I am almost in the same condition as Fatima now" (PP2).*

Participant PP5 also acknowledged undergoing similar emotional struggles during pregnancy and postpartum, indicating a lack of knowledge of how to cope with these feelings. She reflected that:

> *"I was pregnant and gave birth and felt the same feelings that Fatima goes through" (PP5).*

Awareness of a problem was evident in some participants though, who recognised that women may not immediately realise their emotional difficulties during pregnancy and postpartum. For instance, participant PP1 expressed concern over the delayed recognition of emotional issues, perceiving it as abnormal and indicative of a problem that required attention. She noted the following about the scenario character:

> *"I think that there is something wrong with her, there is something abnormal, there is a problem, I don't know. I expect that there was a problem after giving birth" (PP1).*

Turning now to HCPs' perspectives**,** many reported unfamiliarity with mental health services in their clinics, leading to cases where pregnant and postnatal women requiring assistance were not adequately referred. An obstetrician-gynaecologist (D1), for example, expressed surprise at discovering psychiatric services within the hospital, stating:

> *"There is no psychiatric clinic here in the hospital! Is there a psychiatric clinic here!?" (D1).*

Healthcare providers unanimously recognised their need for more in-depth education and training to effectively identify and address mental health issues. One healthcare provider highlighted the following:

> *"They [staff] are not equipped, because they lack the skills and tools necessary to diagnose and support such cases, because such diseases require the understanding of the person and the use of certain tools in order to have a clear picture" (D5).*

This sentiment was reinforced by another who pointed out the lack of specialised training:

"There are not enough courses in the hospital for nursing or doctors, it is assumed that they intensify such things" (D4).

In addition, doubts were also raised on the ability and expertise of general practitioners and gynaecologists in managing mental health concerns. One participant remarked that:

"They are not equipped. I'm not referring to psychiatrists but to the general practitioners or gynaecologists" (N3).

Another voiced similar concerns:

"I do not expect that they are sufficiently equipped, I mean, they lack competence and experience in these problems and how to deal with this category" (D3).

The inference with all these responses is that general practitioners lack capacity on mental health issues, hence their propensity to withhold service.

Equally importantly, gaps in screening and identification highlight the inadequate screening practices by HCPs in Saudi Arabia for maternal mental health issues and how they affect pregnant and postpartum women. The lack of standardised screening tools during consultations with pregnant and postnatal women is a significant concern. Moreover, despite some awareness of mental health screening tools, HCPs, including obstetrician-gynaecologists, often depend on personal judgment and experience to assess mental health conditions. One HCP noted that:

"I had a previous idea about Diagnostic criteria and DSM-5... if I notice on the woman that she has one of these things, I ask her... it is better that you review with a psychiatrist" (D3).

Data gathered from the HCP participants also reveals that a considerable number of HCPs within Saudi Arabia rely on their intuition and experience in mental health diagnostic procedures. In a separate finding, HCPs often rely on women's medical history to identify any pre-existing mental health conditions without posing direct questions amid the lack of standardised screening protocols in practice. The absence of a standardised screening protocol or tools for mental health assessment not only poses the risk of missing cases among women facing mental health challenges for the first-time during pregnancy but also impacts the continuous care for those with pre-existing conditions. HCPs acknowledged encountering many patients already diagnosed and undergoing treatment prior to their clinic visits. However, the challenge remains significant for detecting new, undiagnosed cases. As one HCP pointed out:

"Unfortunately, because we are busy here, we do not have this protocol, this is the reality. It is really possible that you will come and go through such a situation, and we do not know about it" (D3).

This statement highlights the gap in identifying women experiencing mental health issues for the first time. Another participant underscored the potential for oversight in cases where patients may not express their struggles openly, stating that:

"The patient does not show anything about her, [so] how do I explain to you the possibility of not noticing the case or that she is silent and has no symptoms or apparent behaviours" (D1).

This scenario underscores the critical need for comprehensive screening protocols that can efficiently identify both newly emerging mental health issues in pregnant women and ensure sustained management and support for those with established diagnoses.

Moreover, healthcare providers (HCPs) disclosed their reluctance to proactively engage in discussions about mental health with women, preferring to ask about overall health and waiting for the women to mention mental health concerns themselves. For example, one HCP mentioned explained their non-rigorous method of screening:

"Yes, a general question about her history, family history if there is any problem like this in the history and we start to understand that from the answers of the woman and from her character, from her view if she has any problem" (D2).

Another noted the following:

"The first thing we ask her about her news and how she is today, she needs something, is she comfortable, or wants something, I mean general questions, we do not go into depth, and she, in turn, will say if she wants help. We ask, we lure her into talking, and she, in turn, if she needs help, she will tell us" (N2).

Regarding cultural understanding and interest, both HCP's and the pregnant and postpartum women's pre-existing cultural understanding and subsequent level of interest are a key contributor to the current lack of knowledge and awareness regarding maternal mental health in the Saudi context. A lack of interest and cultural understanding among some HCPs further complicates the issue, with fewer than 10% of doctors showing interest in mental health:

"There is a large percentage of gynaecologists who are not interested in this aspect. Unfortunately, we do not have this culture. Yes, this is the reality. this culture is not present in a large percentage, it may be less than 10% of doctors work just like this" (D3).

According to the data gathered, the focus is always on physical examinations, thus neglecting the psychological well-being of the patients. Furthermore, the study highlighted a noticeable lack of cultural appreciation and interest in mental health among HCPs, impacting the quality of care provided to women. The impact of these cultural attitudes was observed in clinical interactions, where the emphasis often remained on physical health, sidelining the psychological well-being of women. According to another participant's observation, the approach to patient care varied greatly among HCPs, depending largely on their personal disposition and interest in patient engagement:

> *"There are other doctors or nurses who don't want to talk to the patients; they only do the exam here, considering that only what is necessary, and they don't do something for the soul of the patient" (D2).*

This quote highlights the variance in HCPs' approach to patient care, with some focusing solely on physical examinations while neglecting the mental and emotional needs of their patients – largely due to having no knowledge on how to go about it.

Regarding the women, the misinformation about mental illnesses extends to the society, and for this reason, women might feel hesitant to discuss their mental health with gynaecologists or obstetricians, fearing their concerns might not be taken seriously or fall outside the professionals' scope of practice. This sentiment is captured by Participant P5's reflection on the perceived limitations of gynaecologists in addressing mental health:

> *"I'm assuming Sarah meant it like that, that's why she didn't ask her doctor. Honestly, If I were in her place, I would not ask her and I would not say such things, because I feel that her specialty is only a foetus and I, and we are finished, as a physical condition, I mean" (P5*).

Additionally, some HCPs admitted avoiding the topic of mental health during clinic appointments, as highlighted by the following:

> *"We do not open a discussion about mental health concerns with women"* (D3)*, "No, we do not open such discussions"* (N1), and *"We don't directly ask her in the clinic. We chat about her health, the baby's health, breastfeeding, weight, and stuff like that"* (N3).

Despite this, HCPs affirmed their dedication to offering emotional support to women experiencing mental health issues, considering it a fundamental aspect of care. One HCP described this commitment, saying:

"Of course, we reassure her and talk to her family, she is mentally ill, and they must relieve her and that they deal with her on this basis" (D4).

Another detailed their approach to emotional support as follows:

"Support with words and sympathy, the woman feels that we are with her and that all the people around her want to help her, whether doctors, nurses, her family and if there are any concerns, we try to reduce them, God willing" (D1).

The parallel lack of awareness and knowledge across both studies underscores a systemic issue within maternal healthcare. Women's uncertainties about their mental health symptoms are compounded by HCPs' inadequate training and awareness, creating a cycle of under recognition and undertreatment. The reluctance to discuss mental health concerns openly, as noted among women, is mirrored in HCPs' hesitancy to initiate conversations about mental health, highlighting a pervasive cultural and systemic barrier to effective mental health care during pregnancy and postpartum.

5.3.2 Theme 2: Stigma and Shame

The theme of "Stigma and Shame" encapsulates the complex interplay of societal perceptions, personal apprehensions, and cultural norms that collectively contribute to the stigmatisation of mental health issues among pregnant and postpartum women and their HCPs. This theme also explores how these stigmas affect both HCPs' approach to discussing and managing mental health, and women's willingness to seek help.

In exploring the theme of mental health stigma and its impact on help-seeking behaviour among pregnant and postpartum women, it is crucial to distinguish between participants' personal experiences and their reactions to hypothetical scenarios presented in the study. The insights shared by the participants reflect a combination of their direct experiences and their perceptions of how such scenarios might unfold based on societal attitudes towards mental health. This blend of personal and perceived experiences offers a nuanced understanding of the stigma surrounding mental health and its influence on women's willingness to seek help.

The fear of being labelled "crazy"

Women grapple with the fear of stigmatisation, a formidable barrier to seeking mental health care. The dread of being labelled "crazy" or tarnishing their family's reputation keeps many from stepping into a psychiatric clinic, as N5 poignantly illustrated through a patient's words:

"Where do I go, what you want the people say about me!" (N5).

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Clearly then, the societal lens through which mental health is viewed often distorts personal suffering into a matter of public discourse, leaving women to suffer in silence rather than risk dishonour. Participant P4, for example, underscored the fear of societal judgment and the potential for being labelled as a "psycho", which could stem from both personal apprehensions and societal observations. She articulated that the woman in the scenario:

> *"[she] is definitely afraid of society's view of her. She is afraid that they will say about her psycho" (P4).*

This highlights the impact of societal perceptions on individuals' reluctance to discuss mental health issues.

Similarly, Participant PP2 expressed concerns about the repercussions of seeking professional help, indicating the societal stigma attached to mental health:

> *"Because currently, our society, if you go and talk to the doctor, they will say 'This is a mentally ill person', and they will make me feel mentally ill" (PP2).*

This reflects the apprehension that discussing mental health concerns with a professional could lead to being labelled and stigmatised.

The narrative unfolds within a backdrop where discussing mental health issues is fraught with sensitivity and the looming fear of societal judgement. HCPs alike navigate this delicate landscape, often deterred by the weight of cultural beliefs that equate mental illness with madness:

> *"People have that mental illness means madness, they consider it a stigma, and this is a culture that needs to be changed" (D3).*

The denial of one's mental health condition

The data obtained from the present study reveals a complex interplay of factors influencing women's reluctance to discuss their mental health concerns, primarily rooted in societal stigma. Participant P5's observation underscores a common barrier: denial of one's mental health condition, often perceived as a personal failing rather than a health issue. As she mentioned of the scenario character:

> *"It is possible that she is not aware of this thing, she does not feel that there is something to be said, I mean, it was her fault, or she did not know her condition" (P5).*

This denial contributes to the silence surrounding mental health discussions, and the lack of self-recognition also hampers open discussions about mental health as women might not identify or acknowledge the need to share or seek help for their struggles.

Cultural sensitivity and societal judgement

The collected data also highlight the situation of women who, despite being aware of their mental health concerns, choose to conceal them due to the fear of negative judgments from their family and community. The limited understanding of mental health issues within familial circles, coupled with concerns about confidentiality, foster a culture of silence. One respondent (PP2) noted that:

"Yes, they feel that I change a lot, but I don't want to tell anyone" (PP2).

This encapsulates the dilemma faced by many women torn between seeking support and protecting their privacy and reputation.

The reluctance to engage in open discussions about mental health is further compounded by cultural and religious beliefs. Indeed, participants such as P2 associated mental health struggles with a lack of faith, suggesting a societal tendency to moralise health conditions:

"She may have weak faith, or does not have faith at all, all these diseases and problems are the result of lack of faith and lack of trust in God (Allah) that causes these problems" (P2).

Compounding this issue is the reluctance of families to embrace mental health treatment, often out of concern for the family's standing within the community. N3 shed light on this dilemma by revealing that:

"Not all women come back to follow up with the psychiatrist [...] they are afraid for their reputation, or because her family refuse to bring her to the appointment because of their reputation and their names" (N3).

This familial resistance underscores the deeply entrenched stigma surrounding mental health, a stigma that extends into the very fabric of healthcare provision.

Moreover, HCPs also cited the fear of judgement and its impact on the openness of maternal mental healthcare in formal settings:

"The topic is very sensitive, and society does not accept these questions easily" (D5).

This emphasises the delicate balance of assessing a patient's mental health whilst respecting cultural sensitivities. The stigma casts a long shadow, influencing the manner in which HCPs approach the topic of mental health with their patients. Instead of direct inquiries, they tread lightly, using indirect questions or cues from medical history to glean insights into a woman's mental state. D5 articulated this cautious approach, noting that:

> *"It is impossible to open the topic directly with the woman. We must be drawn into the topic through questions about the woman's history and family history, and through it we can know if there is a previous history of mental health problems or not " (D5).*

This method, while respectful of cultural sensitivities, risks overlooking those in silent struggle, their conditions veiled by stigma and unspoken fears. Participant PP3 also pointed out the role of societal perceptions in exacerbating the stigma, noting the following:

> *"I feel that the main reason is the people around; I mean, if a woman says I have postpartum depression, they will say about her, yes, this is psycho, they do not know that this is a true disease, and they do not support her to be treated" (PP3).*

The fear of judgment also extends beyond immediate social circles to more distant relatives, as Participant P4 described. This lack of empathy and understanding within the broader society makes it challenging for women to seek support without fear of criticism. She explained the following:

> *"Because the relatives who are not close to her, only relatives by name, they will catch this on her, and they will not forget, and they will say about her psycho. No one can understand and understand our situation in this society" (P4).*

Women's reluctance to seek help

The overarching fear of societal judgment extends to interactions with healthcare providers, as the close-knit nature of the Saudi community amplifies apprehensions about stigmatisation. Participant PP1's comment is illuminating in this respect:

> *"She does not need to talk to her doctor, because this can solve between her and her family" (PP1).*

This reflects a widespread reluctance to involve external parties in what are perceived as private matters, which not only reinforces the stigma but also limits women's access to professional mental health support.

Moreover, the belief in personal resilience and the ability to overcome mental health challenges independently further contributes to the silence surrounding these issues. Both Participant P5 and P3 shared sentiments that illustrate this self-reliance with the following:

> *"It is a battle for you on your own" (P5),* and the belief that *"this is a period, and she will pass through it " (P3).*

These narratives reveal a tendency to underestimate the severity of mental health conditions, often expecting them to resolve without intervention. It is also evident that confidentiality concerns and the broader community's understanding significantly contribute to perpetuating this stigma. The participants' narratives reveal a deep-seated fear of judgment and the repercussions of disclosing mental health struggles, which often leads to a preference for secrecy and silence until recovery is achieved.

Participant PP3 highlighted the dilemma faced by many women who choose to remain silent about their mental health treatment until it is completed to avoid societal scrutiny and judgment:

> *“Many are afraid, even if the person is close to her, she will become sensitive in this regard, so that she may not tell anyone until she is treated and finished. If she finishes the treatment, she says I went through this experience. I heard many women in our society like this, but they did not tell anyone at the time; after they finished the treatment, they said that. At the time, umm, she feels that it is something strange, maybe, or she is afraid of society's view of it” (PP3).*

This sentiment was echoed by Participant PP5, who recounted how past incidents involving relatives seeking psychiatric help led to persistent gossip and negative labelling, further entrenching the fear of being stigmatised. She explained that:

> *"People do not forget such talks. Only one of our relatives was sick and went to a psychiatrist and was treated. You believe that now they are talking about her, and they say she is mentally ill until now" (PP5).*

In conclusion, the theme of “stigma and shame" is one that profoundly illustrates the barriers to mental health care and support created by societal attitudes, cultural norms, and the systemic challenges within healthcare settings. Addressing this theme necessitates concerted efforts to combat stigma, enhance mental health literacy, and foster a supportive and empathetic environment that encourages open discussions and effective help-seeking behaviours for mental health concerns amongst pregnant and postpartum women.

5.3.3 Theme 3: Barriers to Accessibility

Exploring the barriers to accessing mental health services reveals significant challenges faced by Saudi women during pregnancy and postpartum. This theme also explores the multifaceted challenges faced by HCPs in Saudi Arabia in delivering mental health care for pregnant and postnatal women. These barriers range from systemic constraints within healthcare settings to individual limitations experienced by HCPs and their patients. These barriers, rooted in communication difficulties, societal attitudes, and healthcare provider responses, significantly impact women's ability to seek and receive support. The main barriers identified in the study comprise the following: communication and support challenges; the role of HCPs in exacerbating barriers; the lack of HCP attention to mental health; personal experiences with HCPs; and the lack of protocols and continuity in care.

Communication and support challenges

Several participants reported difficulties in communicating their mental health concerns to family members, leading to silence and reluctance to share feelings. This lack of openness is attributed to a belief that family members cannot truly understand or empathise with their experiences. For instance, PP2 and PP4 expressed their frustrations with family reactions:

> *"Even if I talk and open up, no one will understand me. They tell me it's normal, you're exaggerating" (PP2).*

> *"I told my family, and I told my mother, they tell me everything is normal, they know and understand that I am afraid, but it is normal to feel like this" (PP4).*

These experiences highlight the communication barrier and lack of support within families, reinforcing the decision to keep mental health struggles hidden.

Added to this, the absence of empathetic communication from husbands and family members further exacerbates the issue. Participant P5 surmised that the scenario character would expect her husband to be unempathetic:

> *"Especially her husband did not ask her about her situation, he went and asked his mother, this is why I expect that she is expected and knows the answer" (P5).*

Similarly, PP4 pointed in the scenario character and noted the need for husbands to recognise changes in their partners' well-being:

> *"Her husband immediately thought of himself and that she was changing on him only, he did not think why she was changing, what happened to her, is she tired, and so on" (PP4).*

These quotes underscore the crucial role of partner support in navigating mental health challenges during maternal health periods.

The role of HCPs in exacerbating barriers

Among the major emergent issues in the study include the role that HCPs play in exacerbating barriers to mental health care access. These range from the effect of cultural precepts, the lack of staff and time constraints, and the lack of role clarity among HCPs. First among these is the attitudes and responses of healthcare providers towards mental health concerns emerged as significant barriers. Participants reported encounters with HCPs that were marked by intolerance and insensitivity, contributing to a diminished trust in the healthcare system. For instance, PP4 expressed her disappointment with the lack of referral to psychiatric services:

> *"I tell you that I asked them to refer me to a psychiatric hospital, she did not tell me there is none, but she told me this is pampering" (PP4).*

Similarly, P4 highlighted the inadequate attention to mental health by HCPs, sarcastically noting:

> *"Let him/her say about the condition of the foetus well and then see her psychological state" (P4).*

Besides the barrier to communication that HCPs present to maternal and postpartum women, HCP respondents also cited cultural barriers to treatment. There is a significant level of evidence from the collated data that there is a reluctance to adhere to treatment and follow up plans among patients and their care givers. Families are reluctant to embrace health treatment, often out of concern for the family's standing within the community. N3 shed light on this dilemma, revealing:

> *"Not all women come back to follow up with the psychiatrist" (N3).*

From a healthcare standpoint, this signals that a shift is required towards more open, empathetic engagements with patients, ensuring mental health is given the attention and care it deserves. In terms of Saudi society, clearly there is a demand for a re-evaluation of cultural norms, fostering an environment where seeking help for mental health is not a source of shame, but a courageous step towards healing.

Another systemic barrier concerning the contribution of HCPs is the lack of staff and time constraints. A primary barrier identified by HCPs is the significant staff shortage, which leads to an overwhelming workload and restricts the time available for in-depth patient consultations:

> *"The lack of nursing, it puts a lot of pressure on us, and I do not have enough time to talk to the mother and give her advice and so on" (N1).*

This indicates the direct impact of staffing shortages on the quality of mental health care. This sentiment was echoed across the board, with calls for an increase in the number of nurses and doctors, as well as the need for further education on the matter. The constraint of time was further highlighted by another HCP, who noted that:

> *"Time does not allow the doctor to settle all these things because it takes time and there are other patients waiting for their appointment" (N4).*

This underscores the challenge in dedicating sufficient time to mental health discussions within the constraints of busy clinic schedules.

In addition, the clarity of roles among different HCPs – particularly between nurses and doctors – in addressing mental health issues during consultations is ambiguous. Nurses often view the initiation of mental health conversations as the sole responsibility of doctors, which might lead to missed opportunities for early detection and intervention. One nurse pointed out that:

> *"The doctor is the one who asks her about these things [...] Either I ask her about her mental state or mental health, this is the doctor's responsibility" (N4).*

This highlights a perceived division of responsibility that could lead to gaps in mental health care.

The lack of HCP attention to mental health

The lack of attention given by HCPs to women's mental health concerns further discourages them from seeking help. Participant P2 and P4 voiced their disappointment with HCPs' failure to adequately address mental health issues:

> *"Even if she goes to a gynaecologist and obstetrician, she will not understand her. She will tell her this is tired of pregnancy and childbirth; she will never understand her" (P2).*

> *"Unfortunately, the topic is only an explanation of the ultrasound and what is the condition of the foetus only" (P4).*

These comments highlight the need for HCPs to provide attentive and empathetic care, especially during vulnerable pregnancy and postnatal periods.

The lack of attention to mental health is not only an individual issue, but a systemic barrier. This is underscored by the evidence that the Saudi education system does not sufficiently cover holistic education to HCPs. Neglect of mental health issues, therefore, persists even in the systemic HCP curriculum. The inadequacy of education and training in mental health is a significant concern among HCPs, with many feelings ill-equipped due to the limited focus on mental health within their professional training, particularly in obstetrics and gynaecology. Consider the following excerpt:

> *"Education as a gynaecologist is not enough to diagnose such cases...the study of these lessons in obstetrics and gynaecology is limited, very limited" (D3).*

This highlights the need for comprehensive mental health education within medical training programs and pointing to a gap in the curriculum that needs addressing to prepare HCPs for the challenges they face in clinical settings.

Personal experiences with HCPs

Further compounding the issue, certain participants recounted personal experiences in which HCPs dismissed their psychological concerns. PP4 and P1 shared their feelings of being unsupported and ridiculed:

> *"No one can understand her. I mean, I was talking to the doctors, and they laugh at me [disdainful tone]" (PP4).*

> *"They never ask about your psychological state, and they do not give moral support at all" (P1).*

These findings illuminate the personal-level barriers Saudi women face in accessing mental health services, with a significant emphasis on the role of healthcare providers in making the care process an arduous experience.

Another finding contributing to negative experiences between patients and HCPs is cultural and communication barriers. These cultural and linguistic differences between HCPs and patients further complicate the provision of mental health care. HCPs from diverse backgrounds appeared to struggle to connect with Saudi women, impacting their ability to offer adequate psychological support:

"As some doctors came from Egypt, Syria, or Nigeria, they really need education on how to deal with these women" (N1).

This indicates the necessity for cultural sensitivity and awareness training for the provision of effective mental health care.

The lack of protocols and continuity in care

Key findings relating to the lack of protocol and continuity in care highlight systemic issues that hinder the delivery of mental healthcare to pregnant and postpartum women. These include the absence of clear care protocols, variability in referral processes, and barriers to effective referrals. The absence of clear protocols and policies for mental health screening and follow-up care leads to inconsistencies in the referral process and follow-up care for women with mental health issues. Two excerpts highlight this issue:

"There is nothing to follow on or a protocol" (N3).

"We do not have this protocol; this is the reality" (D3).

And a final excerpt that reveals HCPs' uncertainty about existing policies:

"The policy itself, I don't know to be honest... I have been here for ten years in clinics, and we do not have a policy" (N1).

Taken together, these views indicate a systemic issue of lacking standardised approaches and awareness within the healthcare setting, illustrating the systemic gaps in the healthcare system's approach to mental health care. This lack of structure leads to variations in care and potential oversight of women needing mental health support.

Moreover, HCPs reported not being adequately equipped to conduct mental health screenings, leading to potential gaps in care continuity. For instance, the referral process to psychiatric clinics appears inconsistent, with some HCPs praising its effectiveness:

"There is a psychiatric clinic here, and the referral to it is done smoothly if the situation calls for it" (N2).

Others cited limited clinic availability as a barrier:

"That the clinic is one day a week is not enough" (D4).

This inconsistency can delay timely access to mental health care, particularly when psychiatric clinics are unavailable:

"If the woman is present on the day of the clinic, she is referred to, but if it is on other days, she is refereed to Al-Amal Hospital for Mental Health" (D1).

HCPs also highlighted potential barriers that might prevent women from following through with their mental health appointments, such as shame and lack of awareness:

"Effective if the patient is aware, educated and understands that she needs treatment... awareness is important here" (N4).

This underscores the need for enhancing mental health literacy and reducing stigma to ensure women are comfortable seeking and receiving care.

5.3.4 Theme 4: Enhancing Maternal Mental Health Care

This theme pertains to the requirements for achieving positive mental healthcare outcomes and the recommendations for the role of HCPs and holistic support networks in achieving the delivery of comprehensive care for maternal mental health. The findings highlight the role of HCPs as key educators, the need for proactive referral services, enhancing professional education and training, addressing stigma and psychological support, utilising the media for awareness, and policy-based systemic implementations.

The role of HCPs in communication

Saudi women expressed a strong desire for comprehensive mental health education from HCPs, covering all aspects from definitions to treatments and the importance of awareness. This education is seen as pivotal in destigmatising mental health issues and encouraging open communication. For instance, one participant noted the value of sessions provided by hospitals:

"From the hospital, I mean, they give multiple sessions, as a consultation from the same hospital, this is better. with a doctor for sure it will help" (PP2).

Two participants voiced the need to improve the communication and attitudes of HCPs. A significant aspect of support highlighted by the participants involves the need for a change in the behaviour and communication styles of healthcare providers. Women in the study expressed a desire for HCPs to be more receptive and understanding during appointments, allowing ample time to discuss mental health concerns without feeling rushed or dismissed:

“I hope that the doctors' situation will change when we come to the appointments review. I hope that they will take into account the psychological state and give us time to explain our psychological fears, psychological fatigue, or our shortcomings because this is something we need very much” (P4).

The sentiment was shared by another participant who commented on the need for HCPs to be more engaging and supportive:

> *"The doctor is supposed to be in a good mood, talking to you, supporting you, and not going for follow up appointment and she is stuck up person and not talking. She only talks a little about the foetus and foetus condition, and sometimes she also does not talk much about the foetus, this happened in all hospitals" (P2).*

Participants also felt that the current attitudes of HCPs act as a barrier to mental health awareness and hinder open discussions about mental health concerns. They believed that a more professional, non-judgmental approach from HCPs, coupled with active listening, could create a nurturing environment conducive to mental health discussions. P2 illustrated the need for open dialogue and appropriate medical advice:

> *"By talking and speaking out, to talk to her, to prescribe to her the right medication" (P2).*

Another participant highlighted the importance of HCPs being attuned to the specific challenges faced during pregnancy:

> *"Doctors must know what problems she is going through during her pregnancy. He can give her medicine or tell her that with pregnancy these things are not suitable" (P1).*

Facilitating referral

From the HCPs' perspective there is a need to implement proactive referral services and address inconsistencies in referral services. HCPs agree on the importance of promptly referring women who exhibit mental health symptoms or have a history of mental health issues. One HCP highlighted the commitment to referrals, stating that:

> *"Everyone is referred, meaning any person with signs of depression or a history of illness is referred to a psychiatrist" (D4).*

This indicates a proactive approach among HCPs to ensure women receive the necessary assessments and care for their mental health concerns.

Despite the proactive stance on referrals though, inconsistencies arise in ensuring follow-up and attendance at psychiatric appointments. One HCP pointed out that:

> *"If the doctor suspects that the patient needs psychological treatment, she will give her a referral to the psychiatric clinic here, which is usually she does not go to the appointment, this thing is dependent on the woman herself" (N5).*

These insights reveal a gap in the referral system, highlighting the need for a more structured approach to track and support women post-referral.

Training, education, and awareness

The availability of mental health services in Hail city, Saudi Arabia, was acknowledged, but the need for increased mental health awareness and education within the community is evident. One HCP remarked on the government's efforts:

> *"The government is not remiss in opening free clinics and hospitals, but the awareness aspect is lacking in these problems" (N5).*

The societal reluctance to seek mental health help was also noted, with suggestions for more community support and education:

> *"We need more support and education for the community so that they can be treated without causing them social problems" (N4).*

Healthcare providers further emphasised the necessity of making mental health education accessible to the entire community, especially the families of women. They advocated for culturally sensitive delivery of this education to ensure its acceptance within Saudi society. Most of the HCPs stated that mental health education should be accessible to all community *"and become normal in the Saudi culture community" (N4).* This approach would help normalise mental health discussions and support within the community context.

The findings also point towards a need to enhance professional education and training because comprehensive training is deemed essential for them to effectively support women during pregnancy and childbirth:

> *"There should be more awareness and understanding of these diseases, especially during pregnancy or childbirth... we also need courses and education" (N4).*

This recognises the dual need for community education and professional upskilling to improve mental health care by integrating mental health education into the curricula of medical and nursing schools. By providing comprehensive training, healthcare providers can be better prepared to address mental health challenges during pregnancy and postpartum:

> *"What is really lacking is material taught in schools about mental health... courses and intensification programs for healthcare providers" (N5).*

Furthermore, a key aspect highlighted by HCPs is empowering pregnant and postnatal women with knowledge about their mental health. This empowerment can enable them to understand and manage their emotions during these critical periods without stigma:

> *"They are not educated, and they are not interested to start to understand what happened and to search maybe in Google, this Internet is free here everywhere you can use there Google very easily and to learn about your pregnancy about yourself" (D2).*

The aim here is to reduce shame associated with seeking psychological help and to encourage self-awareness and proactive health management.

Despite the availability of psychiatric services, the stigma surrounding mental health remains a barrier for many women. HCPs recommend that obstetricians and gynaecologists be equipped with the skills to diagnose and support mental health issues, as women often feel more comfortable discussing these concerns with them:

> *"If the gynaecologist or the nurses have the competence to diagnose and support such cases, it is better for women" (D5).*

In other words, integrating mental health education into maternity care can reduce stigma and improve support for women during pregnancy and postpartum.

A need to leverage the media for awareness was also noted, which could in turn, reduce stigma towards pregnant and postpartum women. HCPs suggested leveraging various media platforms to enhance mental health awareness. This includes social media, television, and printed materials distributed in healthcare settings. The goal is to normalise mental health care and make seeking psychiatric help as commonplace as visiting other healthcare providers:

> *"Raising awareness on television or posting leaflets in the hospital or in the social media, any way to increase the awareness of these women … Awareness must be for everyone, for the woman, for the family as well, and for the whole community" (N3).*

Support networks and family life

Beyond healthcare, the theme also captures the importance of support from personal networks, including family, partners, friends, and community. Engaging in various activities and interactions with loved ones was highlighted as beneficial coping mechanisms during pregnancy and the postpartum period. For instance, one woman mentioned the positive impact of hobbies:

"Doing a hobby, anything cooking, drawing, whatever it is, she must practice her hobbies in order to renew her psyche" (P5).

The necessity for support from families to navigate pregnancy and postpartum challenges was also underlined. Enhancing family awareness and engagement was seen as crucial:

"To be close to her, especially her family. I feel that any woman is postpartum not left alone (PP3).

As with previous themes, the sentiment that family, particularly husbands, play a pivotal role in providing support was echoed by another participant:

"I think that the most help comes from her family, or from her husband" (PP5).

It is vital to recognise the manner in which cultural and religious beliefs can influence women's views on mental health in Saudi culture. Many women feel that mental health issues are perceived as consequences of their own mistakes or a lack of devotion to Allah, resulting in an acceptance on the part of the women that prayer and the seeking of forgiveness are required instead of seeking professional treatment. Thus, maternal and postpartum women view religious practices and managing children's responsibilities as part of the solution. For instance, some participants found solace in their religious beliefs and practices:

"She is supposed to read the Qur'an, listen to the Qur'an, go out or try to get out" (P2).

This further highlights the deep-rooted influence of religion on mental well-being. Another participant noted that:

"The first thing you should do is read the Qur'an and seek forgiveness a lot, because that is the thing that helped me" (PP5).

The challenge of coping with children's responsibilities during pregnancy and postpartum was highlighted as another strategies to alleviate the burden:

"I will tell her to put the child in the kindergarten, the school field means" (P3); "If she is in this situation and has young children. The first thing is the domestic worker, the domestic worker is a big relief" (P5).

These strategies aim to create time for self-care and attend to personal mental well-being.

Policy-based systemic programs

Recommendations for policy-based systemic programs identified in the findings include the introduction of mandatory health consultations, implementing comprehensive mental health

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programs, incorporating routine mental health screening assessments, expanding healthcare resources and facilities, and implementing mandatory mental health screening.

Regarding health consultations, the call for a professional, comprehensive mental health program within maternity hospitals is clear. Such a program would involve all levels of medical staff and extend to patients and their families, ensuring a holistic approach to mental health education and care:

> *"There must be a program on mental health and psychological diseases... there is a need for Health education for patients and their families" (D4).*

This suggests a systemic approach to mental health care, involving education, prevention, and treatment strategies that are integrated into the healthcare system.

HCPs also advocated for the inclusion of mental health diagnostic tools in routine assessments to facilitate early identification of mental health issues. With these, HCPs could provide more targeted support, improving the well-being of pregnant and postnatal women:

> *"I hope that the gynaecologists become more educated so that they can use tools for diagnosis and support women who have mental health problems" (D5).*

In addition, to better support maternal mental health, HCPs suggested reducing their workload and increasing the number of nurses and psychiatrists:

> *"We also lack an increase in the number of nurses or psychiatrists who can help this category and deal with it well" (N4).*

Establishing a permanent psychological clinic within hospital premises could enable early diagnosis and intervention, and this was also recommended:

> *"The best solution is to have a private clinic in these statements, and it will be permanent" (N4).*

The final suggestion was that mandatory mental health screening prior to obstetrics and gynaecology appointments be implemented, with every healthcare provider trained to identify potential mental health issues:

> *"There is something called a screening, someone is responsible to do a screening […] he works as a screener for cases" (D3).*

These proactive approaches would help in early detection and management of mental health concerns.

This qualitative study has explored the perspectives of women and HCPs on maternal mental health in Hail, KSA. The findings contained within this chapter convey the experiences and knowledge of pregnant and postnatal women, as well as HCPs, regarding maternal mental health issues.

To summarise, women's misconceptions about the normalcy of their feelings during pregnancy and postpartum contribute to a reluctance to seek help, compounded by the fear of being dismissed or not taken seriously. This is mirrored in the healthcare setting, where a systemic lack of standardised mental health education and training for HCPs hinders effective identification, management, and support for maternal mental health issues.

A comprehensive discussion of the findings from the studies which explored the perceptions and realities of the mental health landscape among Saudi women and HCPs during the pregnancy and postpartum periods is provided in the following section. This discussion contextualises the principal findings of both studies within the current literature.

5.4 DISCUSSION OF FINDINGS

Reviewing the demographics of the 10 participants (divided into five pregnant and five postpartum women), the study found that three of the five pregnant women scored for depression on the EPDS, and four out of five scored for depression on the PHQ-9. Among the postpartum group, three out of five women showed depression on both the EPDS and PHQ-9. Untreated PPD can negatively impact both the mother and child, with children facing cognitive and behavioural challenges and mothers experiencing prolonged depression, weight issues, substance misuse, and social relationship difficulties (Slomian *et al*., 2019). In addition, previous research links maternal depression with outcomes like preterm birth and low birth weight, along with an increased chance of complications, surgical births, and more frequent postpartum depression (Jahan *et al*., 2021). Finally, in study by Ghaedrahmati *et al*. (2017), around 50% of women who experienced depression during pregnancy also developed post-partum depression.

Despite scoring for depression, the small group of women in this study were not familiar with its signs and symptoms, indicating a low awareness of PPD. The results of this study are similar to those of a study conducted in Al-Ahsa, KSA, where most participants were also unaware of the high rates of PPD in Saudi Arabia (Tehsin *et al*., 2020). In a similar context, a study by Almuqbil *et al*. (2022), which surveyed 253 mothers attending routine postpartum follow-up visits at eight different hospitals in Riyadh, KSA, indicated that 59.68% of the

women showed signs of probable postpartum depression yet did not seek help. Additionally, research by Highet *et al*. (2011) investigating Australian perspectives on perinatal depression and its treatment revealed that antenatal depression often went unrecognised, with 52% of those surveyed deeming it a normal part of pregnancy. This contrasts sharply with a survey in by Wang *et al*. (2023) in China, which found that over half of the pregnant and postpartum women surveyed had a good understanding of PPD. Similarly, a survey conducted by Alsabi *et al*. (2022) in Malaysia revealed that a significant majority of participants, 76.4%, were knowledgeable about PPD. The variations in these findings highlight the impact of cultural and systemic factors on mental health awareness. In contexts with limited mental health knowledge, such as Saudi Arabia, awareness of perinatal and postnatal depression is also notably insufficient. This is supported by the screening scores from our study, which reflect this broader issue of awareness. The qualitative findings from this study further elucidate the reasons behind these low awareness levels, such as cultural stigma and lack of mental health education, which contribute to the observed gaps in perinatal/ postnatal depression recognition and treatment (Ahad *et al*., 2023; Gopalkrishnan, 2018).

In the following section, the main themes are discussed alongside relevant literature, and recommendations from the study are presented.

5.4.1 Theme 1: Awareness and Education on Maternal Mental Health

The findings under the first theme underscore a fundamental gap in mental health literacy among the participants. Women expressed lack of knowledge about mental health issues and signs of mental health problems, often attributing their emotional experiences to other factors such as hormonal changes, traumatic experiences, or the responsibilities of motherhood. The lack of mental health awareness established in the present study is reflected in broader studies within similar cultural contexts that are typified by misconceptions and limited knowledge about mental health (Almutairi *et al*., 2023). This lack of awareness can delay women from seeking appropriate support and hinder early intervention efforts. Similarly, HCPs showed a limited understanding and awareness of maternal mental health difficulties during the perinatal and postnatal period. The findings of this doctoral study align with earlier research. For example, McCauley *et al*. (2011) investigated midwives' opinions of their mental health abilities and knowledge when caring for women with mental illnesses throughout the perinatal period in Victoria, Australia. According to the study, midwives felt unprepared and lacked confidence while caring for women with mental illnesses after labour. The authors also observed a lack of information about the resources available to help these women. That said,

HCPs in this study were somewhat aware of pregnancy-related mental health issues, but they freely admitted to poor education, training, and screening methods, as well as inadequate support networks. This aligns with the findings of another study conducted in Saudi Arabia by Sayed *et al*. (2022), which indicated that healthcare providers' knowledge of depression positively influences their attitude toward depression. This suggests that the level of knowledge professionals possess may affect their attitudes when dealing with pregnant and postpartum women.

The lack of established screening methods, the restricted use of standardised screening instruments, and certain health care workers' lack of interest in and cultural beliefs of mental health concerns all present significant obstacles. Therefore, there is an urgent need to enhance education, awareness, and support services for pregnant and postpartum women. The implications are profound, as awareness is the cornerstone of early detection and intervention, and thus pivotal in maternal mental health outcomes. Enhancing mental health literacy through targeted educational programs and integrating maternal mental health into maternal and child health programs could serve as a primary strategy for bridging this gap (Rahman *et al*., 2013). Addressing this issue would necessitate multifaceted approaches, including comprehensive training for healthcare providers to identify and educate pregnant and postnatal women about mental health, community awareness and support, and improved access to resources. These measures though, would significantly contribute to better supporting women's mental health and improving outcomes for both mothers and their babies.

5.4.2 Theme 2: Stigma and Shame

The pervasive stigma and shame associated with mental health, as highlighted in the second theme, resonate with the findings of Al-Atram (2018), which documented the societal stigma as a significant barrier to mental health care in Saudi Arabia. In this study, women in Saudi Arabia were found to be reluctant to seek professional care for mental health difficulties during and after pregnancy because of the stigma associated with doing so. This stigma affected women's desire to seek critical mental health care by encouraging quiet and preventing candid conversations. In addition, Bledsoe *et al*. (2017) and Lara *et al*. (2014) identified the impact of a lack of professional mental care among patients, as stigma remains a major obstacle attached to seeking professional assistance for mental health problems during and after pregnancy. This could be partly explained by the general lack of community understanding and awareness of mental health issues as well as the condescending attitude and stigmatising aspects of Arab culture, which tends to be authoritarian towards those who suffer from mental illnesses and

disregards their capacity and degree of functioning (Dardas & Simmons, 2015). Furthermore, Al-Krenawi and Graham (2000) indicate that in Middle Eastern societies, mental illness is heavily stigmatised due to the cultural beliefs that associate it with being weak of possessing a lack of morality. This issue is compounded by the societal pressure to protect the honour and standing of the family within the community. Similarly, Eapen and Ghubash (2004) found that in the UAE family stigma is a major barrier to the family admitting the presence of any mental health issue. Finally, in Egypt, as Coker (2005) reports, this stigma can lead to social isolation, a diminished value of families with mentally ill members, and fewer marital prospects for the sufferers.

This present study also revealed the pervasive existence of stigma among HCPs as mirrored in women and society in general in Saudi Arabia; a phenomenon deeply intertwined with cultural influences. This underscores the critical importance of understanding the complex interplay between cultural norms and perceptions regarding mental health within the Saudi healthcare context. The acknowledgment of mental health challenges is often hindered by societal norms and beliefs, contributing to an atmosphere of secrecy and reluctance to address these issues openly. This theme aligns with broader cultural attitudes in Saudi Arabia, where discussions surrounding mental health are often met with reservations and societal taboos (Alattar *et al*., 2021). Healthcare providers, as integral members of this cultural milieu, find themselves influenced by these prevailing attitudes. Consequently, their perceptions and responses to mental health matters are shaped by cultural norms that may impede open conversations and hinder the provision of effective support.

In conventional Middle Eastern societies, mental health conditions are often rejected, and being admitted to a psychiatric facility brings stigma to both the individual and their family (Elshamy *et al*., 2023). Consequently, while the stigma associated with mental health in Saudi Arabia might resemble that in other parts of the Middle East, it is also influenced by distinct cultural and societal factors. The conservative nature of Saudi society, which places a high value on family honour and the observance of cultural traditions, likely perpetuates the stigma surrounding mental illness. Hence, women in this study expressed a desire for mental health examinations to be mandatory during regular check-ups. This underscores the importance of integrating mental health assessments into standard maternal healthcare procedures and destigmatising conversations about mental health. Women also conveyed their wish for increased support from healthcare providers concerning mental health issues during and after pregnancy. Additionally, adopting a family-centred approach can further enhance support for

maternal mental health and minimise the stigma. Involving family members in assessments and discussions can help create a supportive environment, encourage open conversations about mental health, and ensure that women receive comprehensive care, including emotional and psychological support from their families. Indeed, the (WHO, 2016) recommends that family involvement in pregnancy includes providing advice, support, birth preparedness assistance, and attending prenatal care and delivery with women during pregnancy. This advice can also be found in research, such as the studies by (Ong et al., 2021; Ong et al., 2024).

Given the complex interplay between professional attitudes, societal norms, and knowledge, it is crucial to explore how Western medical education influences the cultural requirements of HCPs. Most HCPs are trained within a framework heavily shaped by Western medical principles, which often do not account for the unique experiences, cultural contexts, and sensitivities found in societies like Saudi Arabia concerning individuals with mental health issues (Koenig *et al*., 2014). While Western countries are increasingly adopting a BioPsychoSocial model of health, which incorporates biological, psychological, and social factors, many non-Western countries that have borrowed their healthcare systems remain fixed on a more biological view of health. This is particularly notable in Saudi Arabia, where traditional views of health have historically included spiritual and social dimensions (Almujadidi *et al*., 2022). As a result, there may be a misalignment between the expertise gained from Western medical education and the cultural competencies necessary to effectively address mental health stigma within Saudi society. This discrepancy underscores the need for incorporating cultural competency training into the education and ongoing development of HCPs. Such integration would equip them to handle cultural sensitivities accurately, allowing healthcare providers to better comprehend and address their patients' cultural needs, thereby improving their ability to mitigate mental health stigma within the healthcare environment.

Cultural competence training for healthcare providers should be incorporated into initiatives aiming at destigmatising mental health within the healthcare system, particularly because Saudi Arabia is undergoing significant societal changes. This would foster an environment where mental health challenges are met with understanding, empathy, and effective support, ultimately contributing to improved maternal mental health outcomes. A study by Corrigan *et al*. (2014) also highlights that stigma has an immediate impact on those who suffer from mental illness, as well as their network of providers, support systems, and local resources. The effects of stigma here are shown to be moderated by knowledge of mental illness and cultural relevance. This research emphasises how important it is to integrate frequent

mental health assessments into maternal healthcare practices and de-stigmatise conversations about mental health. This barrier could be lessened by establishing secure areas for candid conversation and promoting mental health screenings as part of regular physical examinations. In addition, programs designed for mental health providers may be particularly effective in encouraging care participation, and campaigns for family engagement, cultural competency, and mental health literacy would likely lessen the negative effects of stigma on care seeking. This study adds to the body of evidence that stigma around mental health is widespread and has an influence on help-seeking behaviour. It is notable to recognise that these challenges are not limited to the Kingdom of Saudi Arabia but are prevalent in numerous countries worldwide (Thornicroft *et al*., 2016).

5.4.3 Theme 3: Barriers to Accessibility

The third theme identified barriers that hinder access to mental health care from the perspective of antenatal and postnatal women. Similar to the barriers identified by (Al-Hanawi *et al*., 2019; DeSa *et al*., 2022), women expressed frustration with HCPs' attitudes and the lack of prioritisation of mental health concerns. A study conducted by Newman *et al*. (2019) also delved into the intricate dynamics between HCPs and pregnant or postnatal women, particularly focusing on the impact of HCPs' attitudes on women's willingness to seek help for maternal mental health. Findings from this study underscore the urgent need for healthcare practitioners to adopt empathetic and supportive approaches, creating an environment where women feel encouraged and understood. This finding is echoed in this present study. Therefore, policy reforms focused on integrating mental health into primary care, training for healthcare providers on the importance of mental health and ensuring respectful and empathetic patient care could significantly reduce these barriers.

Moreover, women in this study highlighted the lack of community and family support as a significant barrier preventing them from seeking mental health assistance. Studies by Bell *et al*. (2016) and Fellmeth *et al*. (2015) both shed light on this issue, underscoring that the lack of family and community support poses a substantial obstacle for women seeking mental health help during the maternal period. Saudi culture was also identified as the driving factor behind negative judgments about mentally ill persons as specified in the study by Abolfotouh *et al*. (2019). This can be explained by considering the cultural context in Saudi Arabia, where mental health issues may impact the reputation of the Saudi family, leading to stigma and shame (Altuwairqi, 2023). Equally, the results of Lassi *et al*. (2019) are consistent with the implementation of community-based programs that address childcare difficulties and draw

inspiration from family values and religious beliefs. It is critical that such community programs inform communities on maternal care and mental health to help curb childcare issues in KSA.

The findings of this study show that the role of HCPs in exacerbating mental health conditions in pregnant and postpartum women has been largely attached to systemic obstacles in the Saudi healthcare framework, which suggest that the most pressing challenges include a lack of time, staffing, clarity in the roles of HCPs, inadequate policies and protocols, insufficient education and training about mental health, and cultural differences among the HCPs. Additionally, barriers such as social, cultural, and structural factors impede HCPs from providing adequate mental health care during pregnancy and postpartum. The findings of O'Brien *et al*. (2016) provide useful insights that are consistent with the obstacles observed in this research of mental health care for pregnant and postpartum women in Saudi Arabia. They emphasise the limited time available for healthcare practitioners to treat mental health difficulties, which creates a substantial barrier to delivering complete care. Furthermore, O'Brien *et al*. (2016) cite a lack of information and training on mental health concerns as a hurdle, emphasising the need for better preparedness among healthcare workers. Furthermore, Andrade *et al*. (2014) conducted a worldwide investigation that validates the hurdles highlighted in this study, emphasising on the importance of education and training, as well as societal stigma, in inhibiting mental health treatment.

5.4.4 Theme 4: Enhancing Maternal Mental Health Care

The last theme that emerged from the data highlights the potential of leveraging familial, social, and religious support structures in conjunction with professional healthcare services to provide a more robust support system for maternal mental health. This approach not only aligns with the cultural context of Saudi society but also offers a sustainable model for enhancing maternal mental well-being. Women highlighted their desire for healthcare providers to serve as a potential source of support by providing mental guidance during this critical stage. Women expressed concerns about the perceived lack of support from HCPs, speculating that it might be attributed to insufficient mental health knowledge, education, and training. This aligns with findings from Higgins *et al*. (2018), which shed light on the challenges faced by midwives and nurses in addressing the mental health of pregnant and postpartum women. Family, friends, and community support emerge as pivotal in bolstering women's mental health. Franks *et al*. (2017) also underscore the importance of social support and familial involvement in maternal mental health management. In Saudi Arabia, the cultural emphasis on shared family responsibilities and the belief that mutual support aids the mother's recovery are vital, aligning with the cultural

norms where family bonds are highly valued. Integrating family support into mental health interventions could enhance their effectiveness. However, the tendency of Saudi women to conceal mental health concerns from their families until they note an improvement underscores the deep-seated cultural stigmas and the prevailing lack of open discussion about mental health issues within family contexts. This behaviour acts as a protective measure against potential judgment, influenced by societal norms and the undervaluation of mental health concerns. To address this, a cultural shift towards increased mental health awareness and open dialogue is necessary, along with creating accessible support systems. Such measures would empower women to share their experiences without fear of stigma, thus promoting a more supportive and understanding environment for addressing mental health in Saudi Arabia.

This study also clarifies the importance of confiding in a reliable person as a strategy for addressing mental health issues. According to Spedding *et al*. (2018), social support networks and open communication can have a good effect on the mental health outcomes of mothers. Fostering a supportive atmosphere for women with prenatal mental health difficulties could be greatly aided by promoting these channels of communication throughout communities (Nakku et al. (2016). Community-driven programs that raise awareness of mental health issues in Saudi Arabia through easily accessible venues, including neighbourhood health clinics or religious congregations, may encourage candid conversations. Including conversations about mental health in community activities or religious events would help destigmatise the subject, promote support systems, and assist pregnant women who are struggling with mental health issues.

Moreover, women's attitudes and coping strategies regarding mental health are significantly influenced by their religion. Islam is the dominant and official religion in Saudi Arabia and has a profound impact on almost every aspect of Saudi social life, deeply ingrained in Saudi culture. Given that the participants were from an Islamic culture, engaging in religious activities such as prayer and reading the Qur'an as they stated, can provide comfort and fortitude in challenging circumstances. The Muslim community often believes that mental illness can be a punishment or test from God, or due to the influence of Jinn, the evil eye, satanic power, and more (Fekih-Romdhane, Daher-Nashif, *et al*., 2023; Hamdan, 2009; Ng *et al*., 2011) It is crucial to incorporate religious beliefs into mental health strategies. This is echoed by Ng'oma *et al*. (2019), who suggest that integrating religious components into mental health therapies may provide holistic support tailored to the cultural context, recognising the importance of spirituality in coping processes. Additionally, religion plays a significant role in help-seeking attitudes, which might affect women's behaviour in seeking help. The women in this study

preferred to read the Qur'an and increase their prayers, believing these strategies would help them overcome their issues. This is supported by Fekih-Romdhane, Jahrami, et al. (2023), whose study on mental illness help-seeking attitudes among Muslims from 16 Arab countries found that mental illness stigma is a modifiable individual factor that seems to strengthen the direct positive effect of religiosity on help-seeking attitudes. This echoes the need for mental health strategies to be merged with religious beliefs within the Saudi cultural context.

A comprehensive strategy is therefore required due to the complex nature of maternal mental health among Saudi women after giving birth and during pregnancy. Promoting maternal mental well-being requires a number of crucial actions, including recognising the impact of religion, integrating family support, destigmatising mental health, addressing childcare obligations, and encouraging open communication within communities (Byrnes, 2019). This requires the development of an all-encompassing framework that incorporates cultural, social, and religious elements into mental health interventions designed specifically to meet the needs of Saudi women during these sensitive periods.

HCPs in this study emphasise the critical need for structural reforms that address educational and training deficiencies, along with societal attitudes. These reforms aim to increase access to mental health care for pregnant and postpartum women in Saudi Arabia. To overcome these impediments, it is crucial to establish targeted awareness campaigns and improve coordination among legislators, healthcare institutions, and mental health professionals. Furthermore, the findings highlight the significance of considering cultural context in addressing mental health stigma. Societal ideas and customs strongly influence attitudes toward mental health, and interventions should be tailored to reflect these cultural differences. This research has also demonstrated that healthcare providers play a key role in challenging and altering societal beliefs. Enhancing their knowledge and abilities through ongoing education and training would enable them to effectively address mental health issues and minimise stigma in their communities.

5.5 CONCLUSION

In summary, the findings of this doctoral research shed light on the lack of knowledge and assistance for mental health concerns among pregnant and postpartum Saudi women. Firstly, women were reluctant to seek assistance following the feeling of stigma from Saudi Arabian society. Also, women were afraid of negative attitudes, and being labelled as mentally ill, preventing open discussions. This research also emphasises that it is important to integrate frequent mental health assessments into maternal healthcare practices and destigmatise

conversations about mental health. This barrier could be lessened by establishing secure areas for candid conversation and promoting mental health screenings as part of regular physical examinations.

In addition, HCPs have been shown to have limited knowledge and education regarding mental health difficulties throughout the perinatal and postnatal period. This lack of understanding and experience, coupled with societal and cultural pressures, pose significant challenges for HCPs in the effective provision mental health care. Additionally, time constraints, lack of clear protocols, and policies within healthcare institutions were identified as barriers. To address these weaknesses, structural reforms are needed, such as strengthening professional education and training in health care, focused awareness campaigns, and collaboration among stakeholders. Additionally, cultural context must be addressed when addressing mental health stigma as societal attitudes and norms have an enormous impact on perceptions and beliefs. It is evident that the attitude of HCPs can influence the willingness of women to seek help for maternal mental health issues: positive, supportive, and non-judgmental attitudes from HCPs can encourage women to disclose their mental health concerns and seek appropriate care.

Improving maternal mental health during the postpartum period and the sensitive phase of pregnancy requires designing interventions that take cultural, social, and religious factors into consideration. These results, taken as a whole, highlight the necessity of a thorough strategy to treat maternal mental health in Saudi Arabia. An effective intervention strategy must recognise the role of culture, religion, incorporate family support systems, destigmatise conversations about mental health, and promote open lines of communication within communities. Lastly, the mixed methods approach not only underscores the recurring issues identified independently in each study but also provides a richer, multidimensional perspective on mental health care in Hail, Saudi Arabia and the factors influencing mental health support for women during pregnancy and the postnatal period. The insights derived from this synthesis have the potential to inform policy decisions, enhance healthcare practices, and ultimately contribute to improved mental health outcomes for women in the region.

Chapter 6: Health Care Provider's Knowledge on Maternal Mental Health - Phase 2

6.1 INTRODUCTION

This chapter contains the results and discussion of Phase 2 of this study – the cross-sectional online survey designed to investigate healthcare providers' knowledge and competence in addressing mental health issues, particularly depression during the antenatal and postnatal periods. The primary aim of this study is to measure the depth of knowledge healthcare providers possess regarding mental health care for expecting and recent mothers in the Hail region of KSA. It seeks to both identify the extent of their expertise and examine the various elements that might hinder or help the provision of perinatal and postnatal mental health care. This investigation was conducted to offer quantitative data that supports and contextualises the findings from the qualitative study, thereby enriching our understanding of the knowledge level of health providers's perspectives within maternal mental health care in Hail, KSA, from multiple healthcare provider perspectives.

6.2 STUDY SAMPLE OVERVIEW

For data collection, an online survey was utilised as the primary research tool. Initially, the survey link was sent to the Ministry of Health, which then facilitated its distribution through their internal communication channels. The potential participants were invited to complete the survey through a link that was circulated via the internal communication systems within the Hail Health Cluster. In total, 349 respondents completed the survey, with no instances of missing data. All demographic variables in the study such as sex, age and nationality were recorded as nominal variables. The categories for each variable were clearly defined: for sex, the categories were female (coded as 1) and male (coded as 2); for nationality, non-Saudi (coded as 1) and Saudi (coded as 2); and for age, the categories included 20–29 years (coded as 1), 30–39 years (coded as 2), 40–49 years (coded as 3), and 50–59 years (coded as 4). Table 6.1 provides data regarding the participants' demographics characteristics, including their sex, nationality, age, current job, education, years of experience in the sector, and working location.

Table 6.1

Demographic Characteristics of Participants

Variable	Category	Mean (SD)	Number	(%)
Sex	Female	1.3 (0.457)	246	70.5
	Male		103	29.5
Nationality	Non-Saudi	1.95 (0.221)	18	5.2
	Saudi		331	94.8
Age (years)	20-29	1.57 (0.66)	179	51.3
	30-39		145	41.5
	40-49		21	6
	50-59		4	1.1
Current job	Midwife	2.22 (0.499)	12	3.4
	Nurse		248	71.1
	Physician		88	25.2
	Other		1	0.3
Educational level	Diploma		52	14.9
	Bachelor	2.08 (0.716)	240	68.8
	Masters		33	9.5
	PhD		24	6.9
Participant's years of experience in healthcare	≤5 years	1.88 (0.782)	130	37.2
	6-10 years		131	37.5
	11≤		88	25.2
Participant's working sector	Primary Health Care Centre	1.79 (0.428)	76	21.8
	Hospital		270	77.4
	Private sector		3	.9
Participant's working location	Hail	1.25 (0.435)	261	74.8
	Village or province		88	25.2
Worked in antenatal, postnatal, or birthing areas	No	1.46 (0.499)	187	53.6
	Yes		162	46.4
Ever heard of pregnancy-related mental health problems	No	1.89 (0.312)	38	10.9
	Yes		311	89.1

The majority of the study participants were female (70.5%), with the remaining 29.5% being male. The vast majority (94.8%) were Saudi nationals, and the remaining 5.2% were classified as non-Saudi. The largest proportion of participants (51.3%) were aged between 20-29 years. The next largest age group, 30-39 years, comprised 41.5% of the participants, followed by 6.0% aged 40-49 years, and 1.1% aged 50-59 years. Additionally, the table outlines the geographical distribution of the participants' workplaces. A substantial majority (74.8%) were based in Hail, with the remaining 25.2% located in villages or provinces surrounding the region.

In terms of profession, 71.1% of the participants were nurses, 25.2% were physicians, and 3.4% were midwives. A small fraction (0.3%) held other job positions. Regarding educational levels, 68.8% of the participants held a bachelor's degree, 14.9% had a diploma, 9.5% possessed a master's degree, and 6.9% had a PhD. This distribution indicates a notable diversity in the educational backgrounds of the study participants. The largest group, comprising 37.5% of individuals, reported having six to ten years of experience, closely following by those that reported five years or less (37.2%). The remaining 25.2% had been in the field for 11 years or more. This data suggests that a significant number of participants were relatively early in their professional journeys. The survey also sheds light on the sectors where participants were employed. A majority (77.4%) were working in hospitals, and 21.8% were stationed at Primary Health Care Centres, with a minor segment (0.9%) engaged in the private sector. This distribution indicates that the study predominantly involved healthcare providers from hospitals and primary healthcare settings.

The questionnaire further inquired into the participants' prior experience in specific healthcare practices. It asked whether they had previously worked in antenatal, postnatal, or birthing care areas to gain insights into their professional background and experience in fields directly related to maternal health. According to the responses, 53.6% of the participants had not worked in these specific areas, whereas 46.4% had experience in antenatal, postnatal, or birthing care. Moreover, the survey examined participants' awareness of mental health issues related to pregnancy. A notable 89.1% of participants were aware of such mental health problems, while a small minority of 10.9% had not heard of these issues at all.

6.3 KNOWLEDGE OF MENTAL HEALTH

To explore HCPs’ knowledge of mental health care during the pregnancy and postnatal period in sufficient depth, the study employed a criterion that set the standard by which a subject was considered known if at least 75% of respondents answered a question correctly, following the approach suggested by Jones *et al*. (2011). In this survey, only 8 participants, making up 2,29% of the sample, provided correct answers, indicating a lack of awareness among HCPs in Hail, Saudi Arabia, of mental health issues during pregnancy and the postnatal period.

For a more structured analysis, the 20 questions in the questionnaire were classified into three distinct domains based on their content: treatment knowledge, education knowledge, and assessment knowledge. This classification was devised by the researcher to facilitate a clearer understanding of the HCPs' knowledge areas: The treatment knowledge domain, the education

knowledge domain, and the assessment knowledge domain. These are discussed in the following sections.

6.3.1 Treatment Knowledge Domain

Table 6.2 provides the results of the questions related to HCPs' understanding of various treatment options of depression conditions in the perinatal/postnatal period.

Table 6.2

Results of Questions Related to Treatment Knowledge

Question	Answer	Number	%
Common treatments for antenatal depression.	Incorrect answer	136	39.0
	Correct answer	213	61.0
The recommended management for the “baby blues”.	Incorrect answer	94	26.9
	Correct answer	255	73.1
The recommended treatment for mild postpartum depression.	Incorrect answer	188	53.9
	Correct answer	161	46.1
The recommended treatment for moderate to severe postpartum depression?	Incorrect answer	271	77.7
	Correct answer	78	22.3
Knowledge of antidepressant medication.	Incorrect answer	131	37.5
	Correct answer	218	62.5

According to the treatment knowledge domain results, the total correct answers for the five questions was 53%. 61% correctly indicated that medication and counselling are the most common treatments for antenatal depression, and 73.1% knew that the understanding, empathy and support were the recommended management protocols for the “baby blues”. 46% of the participants knew that education about PPD, supportive counselling, and peer support groups are the recommended treatments for mild PPD. Yet, 77.7% of the participants could not correctly estimate the recommended treatment for moderate to severe PPD. Moreover, 62.5% of the participants knew that mothers may breastfeed while taking antidepressant medication.

6.3.2 Education Knowledge Domain

Table 6.3 provides the results for the questions that assessed HCPs' knowledge regarding the educational aspects of perinatal/postnatal depression, and preventative strategies.

Table 6.3

Results of Questions Related to Education Knowledge

Question	Answer	Number	%
The most common reason for depressed pregnant women not receiving adequate help.	Incorrect answer	285	81.7
	Correct answer	64	18.3
	Incorrect answer	282	80.8

Question	Answer	Number	%
The proportion of pregnant women who meet the diagnostic criteria for depression.	Correct answer	67	19.2
	Incorrect answer	255	73.1
The percentage of women suffering depression during pregnancy who subsequently attempt suicide.	Correct answer	94	26.9
	Incorrect answer	303	86.8
The proportion of mothers who experience the “baby blues”.	Correct answer	46	13.2
	Incorrect answer	145	41.5
Postpartum depression most commonly occurs after the birth	Correct answer	204	58.5
	Incorrect answer	270	77.4
The proportion of mothers who experience postpartum depression.	Correct answer	79	22.6
	Incorrect answer	136	39.0
Is depression is seen in both in antenatal and postnatal women.	Correct answer	213	61.0
	Incorrect answer	176	50.4
Antenatal depression as a risk factor for postpartum depression.	Correct answer	173	49.6
	Incorrect answer	167	47.9
Is the Experience of PPD a risk factor for developing postpartum depression in a subsequent pregnancy.	Correct answer	182	52.1

According to results from education knowledge domain questions, the total correct answers for the nine questions was 35.71%. Only 18.3% of the HCPs knew the most common reason for depressed pregnant women not receiving adequate help (i.e., a poor recognition of depression symptoms by healthcare providers). A similar percentage (19.2%) correctly indicated that the proportion of pregnant women who meet the diagnostic criteria for depression is approximately 10–20%, and only 26.9% correctly identified the percentage of women suffering depression during pregnancy who subsequently attempt suicide. In addition, 86.8% of the participants could not correctly estimate the percentage of women who experience the “baby blues” (i.e., 30-80%). More than half (58.5%) of the HCPs knew that PPD most commonly occurs one month postpartum, yet 77.4% of participants could not correctly answer that the proportion of mothers who experience PPD was 15%. 61% knew that the depression can occur both in antenatal and postnatal periods, and 49.6% knew that women experiencing antenatal depression are more likely to develop PPD. Finally, slightly more than half (52.1%) knew that women with PPD are more likely to develop PPD in a subsequent pregnancy.

6.3.3 Assessment Knowledge Domain

Table 6.4 provides the results of the questions that assessed the HCPs' competency in assessing and identifying depression in pregnant and postnatal women.

Table 6.4

Results of Questions Related to Assessment Knowledge

Question	Answer	Number	%
The main symptom of antenatal depression.	Incorrect answer	149	42.7
	Correct answer	200	57.3
The symptoms of postpartum depression.	Incorrect answer	166	47.6
	Correct answer	183	52.4
Symptoms required for a diagnosis of postpartum depression.	Incorrect answer	242	69.3
	Correct answer	107	30.7
Perinatal outcomes associated with antenatal depression.	Incorrect answer	38	10.9
	Correct answer	311	89.1
Risk factors of antenatal depression.	Incorrect answer	283	81.1
	Correct answer	66	18.9
Knowledge of EPDS.	Incorrect answer	255	73.1
	Correct answer	94	26.9

According to the assessment knowledge domain, the total correct answers for the six questions was 45.88%. The responses to those questions as shown in Table 6.4. 57.3% knew that feelings of isolation and loneliness were the main symptom of antenatal depression. Similar percentages (52.4%) recognised symptoms of PPD such as annoyance with their partner or other children, a sense of frustration with their current life, and anxiety about the baby. Yet 69.3% were not aware that a persistent low mood for more than two months is required for a diagnosis of PPD. That said, 89.1% of the participants correctly identified gestational hypertension, preeclampsia, and spontaneous abortion as associated with depression during pregnancy. Only 18.9% knew that a miscarriage in previous pregnancy is not considered a risk factor for antenatal depression. Finally, 26.9% of the precipitants understood that the EPDS does not fully assess the symptoms of psychotic depression.

Table 6.5

Total Correct Answers and Mean Scores for Knowledge of Antenatal Depression and PPD

	N	Minimum	Maximum	Mean	Std. Deviation	%
Correct answer (20)	349	2	17	8.62	2.964	44.86%

Table 6.5 displays participant' average scores of 8.62 points on the Test of Antenatal and Postpartum Depression Knowledge (SD = 2.96, Min. = 2, Max. = 17). The total percentage of correct answers for the 20 questions in this survey was 44.86%. On average, 53% of respondents answered the questions correctly in the treatment knowledge domain. Additionally, 35.71% answered correctly in the education knowledge domain and 45.88% in the assessment knowledge domain. According to the original survey, 75% of participants were expected to

possess adequate knowledge. However, in this study, only 8 out of 349 participants (approximately 2.29%) correctly answered 75% or more of the questions.

Table 6.6

Professional's Level of Knowledge

Variable	Category (correct answers in %)	Frequency	%
Level of Knowledge	Weak (0% to 25%)	59	16.9
	Satisfactory (26% to 50%)	234	67.0
	Good (51% to 75%)	54	15.5
	Excellent (76% to 100%)	2	0.6

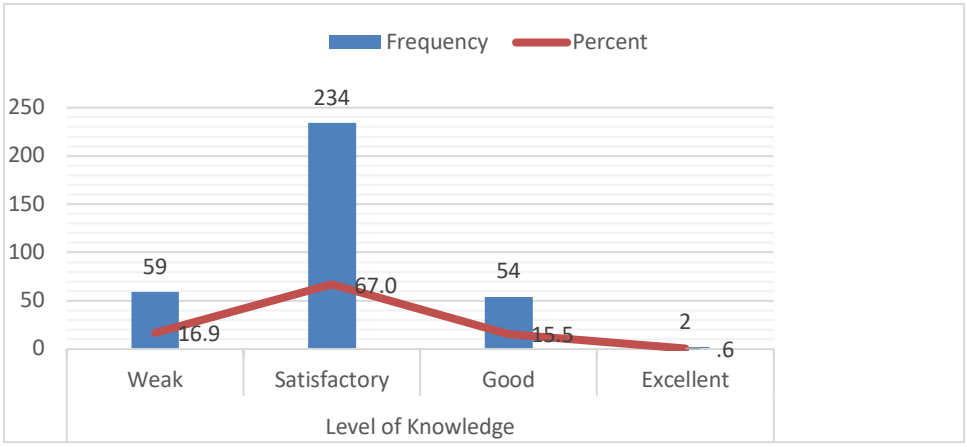

Figure 6.1 Professional's level of knowledge

Table 6.6 and Figure 6.1 illustrates the knowledge levels among study participants, categorised based on their responses to the 20 survey questions. This classification into 'Weak' (0-5 correct answers), 'Satisfactory' (6-10), 'Good' (11-15), and 'Excellent' (16-20) was devised to assess the understanding of healthcare providers on the subject matter. The findings revealed that (234) 67% of respondents achieved a 'Satisfactory' level, showing an adequate knowledge of the topics covered. A smaller proportion, (54) 15.5%, demonstrated a 'Good' level of knowledge, indicating a deeper understanding. Meanwhile, (59) 16.9% were rated 'Weak', reflecting a limited grasp of the content, and only (2) 0.6% were classified as 'Excellent', suggesting exceptional expertise in the survey topics.

6.4 INFERENTIAL STATISTICS

In the inferential statistics section, the connections between various study variables and the level of knowledge of HCPs is explored. This involved applying statistical analysis techniques to discern patterns, correlations, or differences within the data, thereby extending the understanding of how these variables interact and influence each other in the context of the

study. Prior to conducting the Pearson's correlation analysis, an in-depth investigation of the data distribution was undertaken to confirm adherence to the assumption of normality, which is required for the use of Pearson's correlation. This assessment involved using both the Shapiro-Wilk test and the Kolmogorov-Smirnov test, which are widely considered as effective in evaluating the normality of data distributions (Ghasemi & Zahediasl, 2012; Mishra *et al*., 2019; Razali & Wah, 2011).

The Shapiro-Wilk test, which is known for its sensitivity in finding deviations from normality, particularly in small to intermediate sample sizes, was applied to each variable of interest in the dataset. Concurrently, the Kolmogorov-Smirnov test, with its capability to compare the observed distribution with a reference normal distribution, was applied to validate the findings from the Shapiro-Wilk test, ensuring a robust evaluation of normality across the dataset. Based on the results of the Kolmogorov-Smirnov and Shapiro-Wilk tests conducted on the variable "Level of knowledge", with p-values of 0.33 and 0.21, respectively, there is not enough evidence to reject the null hypothesis that the data is normally distributed. In other words, both statistical tests did not yield statistically significant results at the 0.05 significance level, indicating that the assumption of normality can reasonably be upheld for the variable "level of knowledge." Therefore, based on the analyses of these tests, the distribution of the data for "level of knowledge" is likely to be approximately normal.

The results of these tests also showed that the data corresponded adequately to the normal distribution requirements, supporting the use of Pearson's correlation in further investigations. It is crucial to highlight that, while small deviations from normality were seen in some variables, Pearson's correlation is resistant to such deviations, especially with large sample sizes, making it an appropriate analytical tool for this study.

Table 6.7

Differences between Study Variables and Subcategories of Level of Knowledge (n=349)

Variable	Level of knowledge	Mean	SD	F-value	Sig. (p-value)
Participant's nationality	Weak	1.97	.183	.191	.902
	Satisfactory	1.94	.230		
	Good	1.94	.231		
	Excellent	2.00	.000		
Participant's age	Weak	1.64	.609	1.445	.229
	Satisfactory	1.59	.671		
	Good	1.44	.664		
	Excellent	1.00	.000		
	Weak	2.25	.512	9.836	

Participant's current job	Satisfactory	2.15	.449		**.000**
	Good	2.50	.575		
	Excellent	3.00	.000		
Participant's educational level	Weak	2.24	.751	1.364	.254
	Satisfactory	2.03	.723		
	Good	2.13	.646		
	Excellent	2.00	.000		
Participant's years of experience	Weak	1.85	.715	1.745	.157
	Satisfactory	1.93	.802		
	Very Good	1.74	.757		
	Excellent	1.00	.000		
Participant's working sector	Weak	1.83	.422	2.328	.074
	Satisfactory	1.75	.452		
	Good	1.91	.293		
	Excellent	2.00	.000		

In Table 6.7, the outcomes of analyses conducted on a dataset of 349 participants across various study domains are summarised. One-Way ANOVAs were conducted to examine differences in participants' level of knowledge across various independent variables, including participant's nationality, age, current job, educational level, years of experience, and working sector.

The results indicate that participants' current job roles had a statistically significant impact on their level of knowledge ($F = 9.836$, $p < 0.001$). This suggests that the nature of one's job role may contribute to variations in maternal mental health knowledge. Conversely, other demographic factors such as nationality, age, educational level, years of experience, and working sector did not show significant differences, suggesting that these factors alone may not be strong predictors of knowledge levels. The observed differences in knowledge across job roles highlight the importance of professional responsibilities and exposure to maternal mental health-related topics.

While the ANOVA results in Table 6.7 reveal differences in knowledge levels based on job roles, they do not explain the strength or direction of relationships between study variables. To gain further insight into these relationships, Pearson correlation analyses were conducted (Table 6.8). Correlation tests help determine whether an increase in one variable is associated with an increase or decrease in knowledge levels.

Table 6.8

Relationship of Test Values between Study Variables (n=349)

Variable	Pearson Correlation (Sig. 2-tailed)
Participant's sex	.099 (p = .064)
Participant's nationality	-.023 (p = .667)
Participant's age	-.099 (p = .064)
Participant's current job	.159** (p = .003)
Participant's educational level	-.047 (p = .381)
Participant's years of experience	-.057 (p = .290)
Participant's working sector	.055 (p = .309)
Participant's working location	-.008 (p = .876)

Note: ** p < .01

Table 6.8 provides the results from the Pearson correlation conducted to analyse the relationship between the study variables and the level of knowledge among the participants. The findings reveal a weak, positive correlation between participants' sex and their level of knowledge (r = 0.099), though this relationship did not reach statistical significance (p = 0.064), suggesting sex may not markedly influence knowledge levels. Nationality also showed a weak, negative correlation with knowledge levels (r = -0.023), but this too was not statistically significant (p = 0.667), indicating minimal impact of nationality on knowledge. Age correlated weakly and negatively with knowledge (r = -0.099), yet without statistical significance (p = 0.064), implying age might not be a crucial factor in knowledge variance. Contrastingly, a moderate, positive correlation was found between participants' current job roles and their knowledge levels (r = 0.159), which was statistically significant (p < 0.005), highlighting the potential influence of job roles on knowledge. However, The correlation analysis in Table 6.8 supports the findings from ANOVA. The statistically significant correlation between job role and knowledge (r = 0.159, p = 0.003) aligns with the ANOVA results, reinforcing the idea that job roles influence knowledge levels. However, correlations for other factors (age, nationality, experience, education) were not significant, which further supports the ANOVA findings that these variables do not result in substantial differences in knowledge levels.

In conclusion, Study 2 provides insightful quantitative data into the knowledge and awareness levels of HCPs regarding mental health issues, particularly depression, during pregnancy and the postnatal period in Hail, Saudi Arabia. The findings reveal a satisfactory level of knowledge among the majority of participants, although gaps in specific areas suggest room for improvement. Notably, the study highlights the influence of job roles on knowledge

levels, with a significant correlation observed between participants' current job positions and their understanding of mental health concerns. Conversely, demographic variables such gender, nationality, age, years of experience, job sector, and geography did not significantly correlate with knowledge levels, suggesting that these variables may not be the main factors determining mental health understanding among healthcare providers. The discussion of Phase 2 of this study – the cross-sectional online survey – is provided in the following section.

6.5 DISCUSSION OF FINDINGS

Most of the participants in the survey were female and Saudi. The majority were in the age range of 20-40 years, and 71% were nurses. The most common qualification in this survey group was a bachelor's degree (69%).

An objective assessment of Saudi HCPs' knowledge regarding antenatal depression and PPD reveals insufficient understanding of their patients' perinatal and postpartum mental health. Similar results were reported by Jones *et al*. (2011) and Magdalena and Tamara (2020), who also used the Test of Antenatal and Postpartum Depression Knowledge with Australian and Polish midwives respectively. Participants scored an average of 13.43 points (SD = 2.22), ranging from 0 to 19 in the study by Jones *et al*. (2011), and 12.27 points (SD = 2.67), ranging from 3 to 18 in Magdalena and Tamara (2020). In contrast, the results of this study were lower, with a total of 8.62 points (SD = 2.96), ranging from 2 to 17.

In this study, the total percentage of HCPs who correctly answered the survey questions was only 44.86%, which indicates insufficient knowledge. The results of this study are consistent with similar findings in the literature (Abrams *et al*., 2016; Adjorlolo *et al*., 2019; Al-Abri *et al*., 2023; Hauck *et al*., 2015; Higgins *et al*., 2018; Machmud *et al*., 2020; Nakidde *et al*., 2023; Patabendige *et al*., 2020; Poo *et al*., 2023; Ransing *et al*., 2020; Rothera & Oates, 2011; Shahid Ali *et al*., 2023; Silverwood *et al*., 2019; Xiao *et al*., 2023). However, the treatment knowledge domain showed greater knowledge, with 53% compared to the assessment (45.88%) and education (35.71%) domains. The treatment domain likely had a higher percentage of correctly answered questions because HCPs' in this survey where mostly nurses and physicians, who typically have more frequent interactions with antenatal and postnatal women. Conversely, midwives in Saudi Arabia are less numerous and mainly encountered in delivery rooms. This exposure enhances HCPs' ability to identify and manage patients, correlating significantly with their job roles as seen in this survey. This finding is supported by McConachie and Whitford (2009), who highlight nurses' enhanced capability in detecting depression in antenatal and postnatal women with greater experience. Despite this, nurses often

lack confidence in providing care to women experiencing mental health issues during the perinatal period due to insufficient experience in this field.

The lack of education in maternal mental health is evident in this study, as only 35% of HCPs answered correctly in this domain. This is consistent with other studies. For example, Jones *et al*. (2011) found that most midwives felt their educational preparation was inadequate, with little focus on antenatal or postpartum depression. Similarly, McCauley *et al*. (2011) reported that few midwives received training in mental health related to perinatal women. In the UK, Hardy (2014) found similar results, highlighting a lack of nursing education in mental health and wellbeing. In addition, McCauley *et al*. (2011) reported that midwives' mental health skills and knowledge were not consistently perceived as important in their work by the surveyed midwives. This aligns with the findings in this study, where inadequate emphasis on mental health education for HCPs contributes to significant knowledge gaps in identifying and managing antenatal and postpartum depression.

This study also found that up to 45% of HCPs had difficulty detecting symptoms of antenatal depression and PPD. This is important, because in some instances, postnatal depression may result from an undiagnosed depression that started during pregnancy. A study by Wisner *et al*. (2013), for example, indicates that at least one-third of PPD cases actually begin during pregnancy or even earlier. Insufficient knowledge among health professionals this may explain why depression during pregnancy is often underdiagnosed (Bennett *et al*., 2004; Breese McCoy, 2011; Jahan *et al*., 2021; Sherman & Ali, 2018). Moreover, this study found that many HCPs lack adequate knowledge about screening tools for assessing perinatal depression such as the EPDS. Similar to the findings of Jones *et al*. (2011), this study indicates that HCPs often misjudge the ability of the EPDS to detect symptoms of psychotic depression. The EPDS, a 10-item self-report tool, is designed to help health professionals identify symptoms of PPD but does not replace a comprehensive assessment and does not measure severity. Therefore, when a woman scores high on the EPDS, she should be referred for a full assessment (Cox *et al*., 1987). This tool is recommended for use by medical personnel who do not directly provide psychological or psychiatric services, with a high score indicating the need for a specialist assessment.

In terms of the four categories of knowledge level (Weak, Satisfactory, Good, and Excellent), the majority of participants 234 (67.0%) who answered 25% to 50% correctly were classified as having a satisfactory level of knowledge, indicating a basic understanding or proficiency in the study topics. A smaller proportion had a good level of knowledge 54 (15.5%)

who answered between 50% to 75% correctly, indicating a solid understanding or proficiency in the topic, while 59 (16.9%) had a weak level of knowledge because they answered 25% or less of correctly. Only a few participants 2 (0.6%) who were answered 76% or more correctly were classified as having an excellent level of knowledge. Interestingly, the initial survey indicated that 75% of the participants possessed knowledge on antenatal and postnatal depression. However, the more fine-grained results presented here indicate that only eight participants (2.29%) achieved a score of 75% or more. Therefore, HCPs in Hail, Saudi Arabia had overall insufficient knowledge on maternal mental health. This result aligns with those of many other similar studies in other contexts, such as by Jones *et al*. (2011) and Magdalena and Tamara (2020), who used the same test. Additionally, Saudi HCPs were not familiar with the risk factors of antenatal depression and PPD, with more than 80% answering incorrectly. This lack of familiarity can be attributed to insufficient training and education in maternal mental health within the current healthcare system. In other words, the limited focus on mental health in the medical curriculum and ongoing professional development programs may contribute to this knowledge gap. The findings of Al-Ismail et al. (2023); Link et al. (2022) highlight the necessity for education and training among healthcare providers to enhance the treatment and support offered to women facing prenatal mental health concerns, as indicated by the results of this study.

In this study, a relationship was observed between the participants' current jobs and their level of knowledge in mental health (0.003), which indicates a very weak positive correlation. This suggests that there may be a slight correlation between the type of job participants hold and their level of knowledge. This might be explained by the influence of education and training that healthcare providers received during their studies or training. This aligns with the findings of a study by Jahn *et al*. (2016), which emphasised a correlation between training/experience and knowledge level of mental health. However, the correlation coefficient for educational level and knowledge was -0.047 in their study, indicating a very weak negative correlation. This suggests that there is a minimal relationship between the participants' educational level and their level of knowledge. This might indicate that the educational background of professionals is good but does not necessarily predict knowledge outcomes strongly. This being the case, Continuous Professional Development (CPD) programs need to focus on factors beyond educational level to effectively enhance knowledge. Elements such as the content of CPD programs, the method of delivery, and participants' engagement might play a more significant role in influencing knowledge levels, as evidenced by the transformation of CPD programs in Saudi Arabia to meet national goals (McMahon *et al*., 2024).

Based on these findings, there is no absolutely conclusive, direct impact of education or learning on the knowledge of HCPs. The weak correlations imply that factors other than job type or educational level may have a more significant influence on participants' level of knowledge. Further analysis and exploration are thus needed to determine the potential impact of education and learning on job performance in this context. Additional variables and factors should be considered to gain a better understanding of the relationship between education, learning, job type, and knowledge level in the study population.

Knowledge gaps in the survey were identified, such as with the use of the EPDS assessment tool and the signs and symptoms required to diagnosis for PPD. To address these gaps, it is recommended that the role of nurses in Saudi Arabia be expanded to include psychological care, assessment, and the adequate use of screening tools, as suggested in a study by Almutairi *et al*. (2023). Additionally, there is a need to increase and enhance the education and training system in Saudi Arabia regarding mental health care, as recommended in a study by Al-Atram (2018). In turn, continuing education and professional development mitigates outdated practice (Weaver *et al*., 2012). This would better equip healthcare providers to effectively deal with women experiencing mental health problems.

These findings underscore the importance of targeted educational efforts to enhance knowledge and awareness among healthcare providers. This present study, which involved individuals with diverse healthcare backgrounds, emphasises the significance of adopting a team approach that includes experts from various healthcare fields when addressing mental health during pregnancy and the postpartum period. Collaborating and communicating among healthcare experts with different specialisations can lead to comprehensive, coordinated treatment for pregnant and postpartum women (Lowdermilk *et al*., 2019). The research findings also highlight the need to address knowledge gaps and structural barriers for providing optimal care and support to women experiencing mental health issues during pregnancy and the postnatal period. Achieving this goal requires continued education, awareness campaigns, evidence-based methods, and cooperation among healthcare providers from all backgrounds.

6.6 CONCLUSION

In summary, this study has underscored the relevance of healthcare providers' knowledge and understanding of depression throughout pregnancy and postpartum. Overall awareness and knowledge were found to be insufficient, and so the recognition and understanding of prenatal/postnatal depression must be improved. Healthcare providers have an important role in diagnosing and treating mental health issues in pregnant women and new moms, thus they

must acquire proper education and training in this field. More studies are needed to determine the efficacy of interventions targeted at increasing healthcare providers knowledge and understanding of prenatal/ postnatal mental health concerns, as well as their capacity to utilise this knowledge in clinical practice. Overall, the study shows the importance of continued education and awareness activities to bridge knowledge gaps and improve care delivery.

The final chapter that follows collates and discusses the findings of both Phase 1 and Phase 2 in relation to the study's specific research questions and in the context of existing literature.

Chapter 7: Synthesis, Discussion and Recommendations

7.1 INTRODUCTION

Through the integration of data derived from both qualitative and quantitative investigations (embedded mixed methods design), a comprehensive understanding of the experiences of the sampled population was obtained. This embedded study design has enabled a new understanding of the experiences of maternal mental health of pregnant and postnatal women as well as the healthcare providers in SA. It is therefore central to developing new practices that enable both women and health professionals to approach this issue. The findings are discussed in light of the published literature available on the subject to identify the new knowledge and help inform future research and interventions that this study has provided. The following areas are explored:

- Perception and Understanding of Mental Health
- Cultural Influences on Knowledge Gaps
- Stigma
- Barriers to Accessing Mental Health Services
- The Role of Support Systems

7.2 PERCEPTION AND UNDERSTANDING OF MENTAL HEALTH: A SHARED CHALLENGE

The synthesis reveals a consistent theme of insufficient knowledge and awareness concerning mental health during pregnancy and postpartum periods, both from the perspectives of women and healthcare providers.

Women's perspectives

The present study highlights the women in Hail, KSA, experienced difficulties in understanding the mental health challenges that women may face during pregnancy and the postpartum period. While the study indicated that these women had some awareness of mental health issues, they struggled to distinguish between emotional and mood disorders and typical pregnancy symptoms. The findings align with previously conducted research.

This finding is not unexpected as the literature review also revealed that the awareness of mental health issues among antenatal and postnatal women varies widely across different regions and populations. Studies show that in many low- and middle-income countries, such as India (Manjrekar & Patil, 2018), Nigeria (Abazie & Usoro, 2021), and Uganda (Nakku *et al*., 2016), there is generally poor awareness and significant gaps in knowledge about PMH issues. Barriers to treatment include lack of time, financial constraints, procedural hurdles, and social stigma, however this study did not unveil all those factors. Conversely, studies in higher-income regions, such as the USA (Byrnes, 2019) and the UK (Franks *et al*., 2017), indicate better awareness but highlight issues related to stigma and fear of consequences of revealing struggles with mental health such as losing custody of a child. And while Saudi Arabia is often regarded as a high-income country, it is important to acknowledge that stigma and access to healthcare services may still contribute to challenges in mental health awareness and support for vulnerable populations (Alattar *et al*., 2021).

These challenges resonate with those identified by Heaman *et al*. (2014) in Canada and Mason *et al*. (2015) in Kenya, suggesting that women from diverse cultural contexts often encounter similar challenges, such as the lack of awareness of mental health issues, when accessing support during the perinatal period. Additionally, a study conducted by Al Daajani *et al*. (2020) in Saudi Arabia made similar observations that women who had knowledge regarding antenatal care had a higher chance of reporting mental health issues compared to those who had little to no knowledge. The lack of knowledge of mental health issues and their signs and symptoms, as identified in Study 1, underscores the urgency for targeted mental health education programs for women in Saudi Arabia. These programs should focus on enhancing knowledge about the spectrum of mental health issues during the peri/postnatal periods.

Healthcare providers' perspectives

Healthcare providers echoed this concern, revealing a parallel theme of limited knowledge regarding the screening and identification of mental health issues among pregnant and postpartum women. Insufficient education and training impeded their capacity to recognise and manage mental health concerns efficiently. More specifically, only 1 out of the 10 sampled HCPs reported having ever used the DSM-IV manual to evaluate a patient’s mental health status.

A separate study assessing the views of obstetricians on mental health issues connected to pregnancy and childbirth asserts that HCPs perceive these issues as important topics (Patabendige *et al*., 2020). Nonetheless, that study further points out that some HCPs lack

confidence in their abilities to diagnose these conditions in an effective and timely manner whilst also contending with the potential inadequacy of their training. In addition to doctors, the training of nurses and midwives is also crucial. Nurses and midwives play a vital role in the ongoing care of pregnant and postpartum women, yet they too often face gaps in their training regarding mental health (Patabendige *et al*., 2020). Ensuring that these professionals receive adequate training in mental health screening and management is essential for comprehensive perinatal care.

The findings from health professionals highlight systemic issues within the healthcare infrastructure. A significant barrier identified is the lack of integrated mental health training within the standard curriculum for all healthcare providers involved in maternal care. This deficiency is evident in inconsistent knowledge and practice regarding mental health support across different levels of care. Moreover, there is often limited access to updated resources and continuing education opportunities focused on mental health, which further exacerbates the problem. Additionally, institutional barriers such as time constraints, high patient loads, and insufficient mental health resources, as reported in this study, contribute to the challenges faced by healthcare providers. Many professionals in this study reported feeling overburdened and under-resourced, which affected their ability to dedicate adequate time and attention to discuss mental health issues during routine consultations for the pregnant and postnatal women.

Interventions should therefore prioritise enhancing mental health education for healthcare providers and ensuring that they have sufficient knowledge to offer professional and caring support and assess to pregnant and postnatal women. This includes integrating comprehensive mental health training into medical and nursing curricula (Wiedermann *et al*., 2023), providing regular professional development opportunities, and addressing institutional barriers to improve the overall support system for maternal mental health.

The quantitative study, to the best of the researcher's knowledge, is the first of its kind to measure professional level of knowledge regarding maternal mental health in Saudi Arabia. This study has highlighted major discrepancies and knowledge gaps among doctors, nurses and others regarding screening, occurrence, and management of mental health issues during pregnancy and postpartum periods. These gaps in knowledge can significantly affect the quality of care provided to women during these critical times. For instance, the study found that a significant proportion of HCPs did not know the most common methods of identifying and managing conditions such as perinatal depression. Gupta *et al*. (2023), also reported a similar finding after conducting a survey where a majority of primary care physicians opted to refer

patients to psychiatrists for dedicated treatment due to possible gaps in their knowledge of postpartum depression.

This present study also revealed a positive correlation between an HCP's current job and their level of knowledge on mental health (Pearson correlation = 0.159). This suggests that HCPs in certain roles, perhaps those with more direct patient interaction or specialised training, tend to have higher levels of mental health knowledge. Pope *et al*. (2023) also noted that HCPs' familiarity and frequent contact with women put them in a stronger position to facilitate mental health disclosures and provide support than more remote colleagues. This correlation underscores the need for targeted mental health training programs that can enhance the understanding and skills of HCPs across all roles, not just those in specialised positions. By equipping all HCPs with the necessary knowledge and skills, healthcare systems can better support maternal mental health and ensure that women receive comprehensive care throughout their antenatal and postnatal periods.

Despite the positive correlation with current job specifications, the study identified significant shortcomings in using standardised screening tools and overall knowledge. This emphasises the importance of implementing specialised training programmes for healthcare providers. The findings highlight the crucial need for customised educational interventions for healthcare providers. Implementing regular training sessions and updating curricula, for instance, can bridge the existing knowledge gaps and enhance their ability to identify and address PMH concerns effectively. Additionally, a comprehensive strategy is needed to tackle the problem of social stigma and inadequate knowledge regarding peri/postnatal mental health. This strategy should include training, education, community-based intervention, a cultural transformation, and a critical evaluation of the attitudes held by healthcare providers. Overcoming the obstacles that prevent women from seeking assistance and support for PMH clearly requires the implementation of a comprehensive approach.

7.3 CULTURAL INFLUENCES ON KNOWLEDGE GAPS: A MULTIFACETED PERSPECTIVE

Navigating norms and beliefs

In examining the challenges faced by women during pregnancy and postpartum, it has become evident that cultural factors play a pivotal role. The fear of societal judgment, deeply rooted in cultural norms, shapes women's perceptions of mental health. This cultural influence extends to healthcare providers as well, contributing to knowledge gaps regarding maternal mental health in Saudi Arabia. An analysis of the experiences of pregnant and postnatal women

(Study 1) and healthcare providers (Study 2) demonstrates the complicated manner in which cultural influences impact perceptions and contribute to a lack of sufficient awareness. Understanding how cultural beliefs influence these perceptions is essential to better address the challenges identified.

In Study 1, various social norms surrounding mental health within Saudi society were explored. For example, there is a prevalent belief that discussing mental health issues can lead to societal judgment and being labelled as "psycho," which can adversely affect the family's reputation. These norms may explain why women participants in the current study tended to discuss mental health issues privately with close family or friends, or only after they had been treated and their issues resolved. Family and friends were considered the most important sources of information for them. However, this reliance on close social circles often leads to a poor level of knowledge and understanding. Many studies echo this conclusion, emphasising that insufficient knowledge about mental health issues is a significant barrier that affects women's mental health and is a crucial reason for their unmet needs globally (Ahad et al., 2023; Mahmoud, 2019; Tesfaye et al., 2021).

In the current study, women expressed a desire for mandatory mental health consultations during their routine follow-up appointments in outpatient clinics. Unfortunately, these services were not provided by their current hospital facilities. During interviews with HCPs, it was observed that they were overly influenced by societal norms due to the lack of application of screening tools and a sole reliance on the medical files of the women to detect mental health issues during appointments. Consequently, many cases of mental health issues go undiagnosed and untreated, which can significantly impact both women and their babies in the future. For instance, Bauer *et al*. (2015) and Chauhan and Potdar (2022) explained that children born to mothers suffering from mental health ailments such as depression are more likely to be low-birth-weight babies and to develop emotional, behavioural, or cognitive problems. Additionally, the impact on women is substantial. According to Corrigan (2016), if mental health issues are not addressed promptly, they can worsen an individual's ability to function in areas including work, relationships, and self-care, leading to a decline in their overall quality of life and those of their children.

Negotiating professional biases

The exploration of healthcare providers in this study revealed the structural challenges embedded in the Saudi healthcare system. Medical professionals, who are influenced by the same cultural environment as the women they care for, must manage their own biases and

challenges when addressing maternal mental health because the societal stigma surrounding mental health problems extends to hospital settings. Professionals, influenced by cultural beliefs, may unintentionally contribute to the continuation of stigma, or hold biases that hinder open conversations about mental health. For example, HCPs may not directly inquire about mental health issues in clinics. Instead, they navigate by offering general health questions, creating a space for women to open up and discuss their concerns.

This situation is a dual problem: HCPs must not only grapple with their cultural preconceptions but also navigate a broader societal context that impacts the women who are seeking medical care. This aligns with prior investigations that have underscored cultural obstacles and discrepancies in Saudi society's perception of mental health (Al-Issa, 2000; Alissa, 2021; Khatib *et al*., 2023). By conducting a comparative analysis of our results with those of prior research, we can discern certain prevalent obstacles that hinder the delivery of mental health services during pregnancy and the postnatal phase.

Cultural sensitivity in education

The shared challenge of knowledge gaps, as shown in the synthesis of studies, highlights the crucial need for a culturally sensitive and comprehensive educational reform. To fully address the impact of cultural norms and beliefs, interventions should go beyond simply sharing facts and instead include an in-depth understanding of the cultural nuances that influence how mental health is seen.

The findings of this thesis show that the role of cultural sensitivity plays a crucial role in Saudi society in the ability and willingness of HCPs to offer effective mental health care. Equally, Tackett (2013) highlighted the role played by cultural precepts in making new mothers more vulnerable to postpartum depression, increasing their chances for withholding the need to seek help and functional assistance, and the impacts of the social recognition of their new roles in the case of first-time mothers. This situation can be countered by formulating and enacting cultural awareness drives among the patients' families, relatives, and the community at large. As Ahad *et al*. (2023) suggest, a transformation in approaches, beliefs, and attitudes towards mental health in the public domain is essential for facilitating evidence-based prevention, detection, and management strategies. This transformation can be achieved through various methods, including public awareness campaigns, cultural competency training, peer support programs, policy reforms, and community-based services. These initiatives would play a vital role in promoting awareness, enhancing understanding, and fostering acceptance of mental health issues within society. By understanding how change can be initiated, we can better equip

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ourselves to promote a more supportive and understanding environment for mental health awareness and treatment.

Cultural sensitivity is seen as crucial in medical education, and it is important to comprehend and incorporate it into practice. This frequently neglected aspect is very important in preparing HCPs with the necessary knowledge and skills to effectively understand and communicate with patients from a variety of cultural backgrounds. In fact, the nurturing of cultural sensitivity presents a hopeful opportunity for reducing the widespread stigma in healthcare environments. Research carried out by Kirmayer (2012), for instance, highlights the important influence of cultural competency training. Kirmayer's thorough analysis underlines the impact of this training on improving healthcare providers' understanding of how cultural factors affect health behaviours. Additionally, it promotes better communication between patients and providers, helping to reduce the stigma associated with mental health.

Nonetheless, in the particular setting of Saudi Arabia, this study reveals that HCPs do not possess the necessary skills to navigate the complexities of Saudi culture, especially in relation to conversations about mental health. This shortfall results in HCPs being hesitant to engage in open discussions about mental health, leading to continued silence and worsening stigma. Previous studies also show that professionals lacking cultural competence can unintentionally fuel stigma, leading patients to avoid seeking assistance (Thoits, 2011). In order to deal with this problem, a significant change is required. Health Care Providers in Saudi Arabia must complete education and training designed to address the distinct obstacles related to maternal mental health within the cultural framework. Equipping them with these cultural skills would establish a more welcoming and supportive setting for maternal mental health to be addressed and treated. Higgins *et al*. (2018) emphasise this need, including the establishment of services and care pathways, as well as the provision of culturally sensitive education on maternal mental health. By doing so, healthcare providers will be empowered to address psychological issues effectively and confidently.

The knowledge gaps observed in Saudi Arabia are tightly connected to cultural nuances that impact women. To address these gaps, interventions should be implemented that are both educational and culturally appropriate. These interventions should support a combined awareness of the challenges of mental health throughout the peri and postnatal periods. It is crucial to implement strong data collection and monitoring systems alongside these within the regional healthcare system in order to customise interventions to suit specific cultural and local requirements, as highlighted by (Jordans et al., 2020; Kumpfer et al., 2002; Mohsin et al., 2021;

Subba et al., 2024).By collecting comprehensive data on mental health trends, healthcare providers can gain insights into the specific needs and challenges faced by women within the cultural context of Saudi Arabia. In essence, the integration of robust data collection and monitoring systems strengthens the evidence base for intervention strategies, ensuring that they are not only culturally sensitive but also efficacious in addressing the mental health needs of women in Saudi Arabia.

7.4 STIGMA: A PERVASIVE BARRIER

Stigma also emerged as a significant barrier. Women in Study 1 expressed their fear of societal judgment, while healthcare providers were grappling with their own biases. The intertwined nature of societal and professional stigma thus paints a complex picture.

Stigma in Saudi culture, as revealed in this study, presents a significant barrier since the stigma associated with mental health issues is widespread, as supported by Alattar *et al*. (2021). Research indicates that the manifestation of mental health stigma varies across cultures and is influenced by specific cultural beliefs, attitudes, and values (Kirmayer & Pedersen, 2014). Stigma can lead to delays in seeking diagnosis and treatment, reduced quality of life, and increased risks of social isolation and discrimination (Brohan *et al*., 2010).

The impacts of stigma and shame on the provision of and access to mental health care support during the perinatal and postnatal period also affect the attitudes of HCPs towards care provision. After assessing the perspectives of health care providers on mental health care during pregnancy, the present study identified that most HCPs in Hail would rather shy away from engaging the patients in mental health discussions because they found it to be an area of cultural sensitivity, as previously noted. Similarly, other studies have confirmed the cultural sensitivity bias in HCPs' approach to mental health care among pregnant and other women in antenatal and postnatal care. A study by Insan *et al*. (2022) on the attitudes and perceptions around PMH in India, Pakistan, and Bangladesh, for example, identified that the respective attitudes of Health care providers are heavily predisposed to societal stigma and pressures to the extent that they intentionally avoid inquiring about mental and emotional health problems as they perceive it to be culturally inappropriate. Insan *et al*. (2022) also established that the low level of awareness of mental health concerns among pregnant and postnatal women were partially culturally grounded. This aligns with the findings of Al-Krenawi and Graham (2000) and Halbreich and Karkun (2006), indicating that women in Arab and Asian contexts, respectively, may face a barrier to openly acknowledging their struggles or seeking help. This was attributed to the fear of being perceived as weak and not fulfilling their expected role as mothers.

These findings underline the necessity of raising community awareness of mental health issues to lessen stigma associated with mental health issues. Ganann *et al*. (2019) also highlighted the significance of promoting awareness of PPD and diminishing the negative attitudes and discrimination associated with the condition. They emphasised the significance of offering explicit guidance on the prevention, detection, and treatment of PPD. This is particularly pressing given addition findings showing that women desire for mandatory mental health consultations to overcome the stigmatisation surrounding the topic (Sartorius *et al*., 2010).

Interestingly, women in this research indicated that healthcare providers in maternity hospitals and primary care were more effective in addressing maternal mental health and preferred them over psychiatric clinics. This preference is supported by a study by Ransing *et al*. (2020), which suggested that offering brief psychological interventions by midwives and nurses is an easily implementable measure that is well-received by women. Additionally, integrating mental health services into primary care can help reduce the social stigma associated with mental health issues. Rahman et al. (2013); (Tachibana et al., 2019; Young et al., 2019) demonstrated this in their studies of women who received mental health services from psychiatrists integrated into a paediatric primary care clinic. This integration facilitated the provision of healthcare services to women with PPD who might have refrained from seeking psychological treatment due to the overwhelming nature of their symptoms, the challenges associated with attending appointments, and the social stigma surrounding mental health.

Addressing the widespread presence of stigma requires comprehensive and diverse actions. Educational programs, public awareness campaigns should be integrated with professional training programmes, and psychiatrist's clinics should be integrated with paediatric primary care clinics to eliminate societal and cultural barriers regarding discussions surrounding mental health. Thornicroft *et al*. (2016) state that the stigma around mental health problems is a worldwide concern. Understanding and overcoming stigma is also of the utmost importance in Saudi Arabia because cultural influences continue to play a significant role. Strategies to reduce stigma should consider cultural nuances for effectiveness. For this reason, gaining a comprehensive understanding of the cultural composition of Saudi culture is crucial for developing impactful educational programs and awareness campaigns. Strategies should be carefully designed, considering societal norms and beliefs, to ensure that the messaging has a positive impact and does not unintentionally strengthen stigma. This agrees with the

acknowledgment in other studies that effectively addressing the stigma around mental health requires the use of culturally specific approaches (Ahad *et al*., 2023; Almutairi *et al*., 2023).

The findings from an embedded design study highlight the significance of making structural modifications in the healthcare system. These adjustments should involve allocating more resources, providing specialised training, and incorporating standardised screening tools. Additionally, it is essential to establish a structured screening process to identify women at risk and enable appropriate referrals. This will ensure that women receive timely and effective support, addressing their specific mental health needs. Implementing these changes requires an approach that acknowledges and considers the cultural context of healthcare practices in Saudi Arabia. Policies should be formulated with a profound comprehension of how social and cultural factors impact the provision of healthcare. This includes investigating the influence of family structures, religious beliefs, and societal norms on healthcare interactions.

7.5 BARRIERS TO ACCESSING MENTAL HEALTH SERVICES

The present study identifies several barriers that prevent smooth access to maternal mental health services from healthcare professional perspectives such as lack of screening tools, lack of careening protocols, staff shortages, patient load, socio-cultural factors, lack of support, and insufficient training and education. Smith *et al*. (2019) conducted a systematic review evaluating the barriers to the provision and access of mental health services for women dealing with perinatal mental illnesses in the United Kingdom (UK) context. Although the authors identified a complex interplay of barriers, they specifically highlighted healthcare providers as constituting the primary barrier. This was attributed to their lack of capacity and awareness. The findings of this present study also highlight that HCPs tend to dismiss various emotions and low moods as normal occurrences during the pregnancy period. Similarly, Leiferman *et al*. (2008) performed a survey of 232 primary care physicians in Virginia in the United States and found that although as many as 90% agreed that it was the responsibility of HCPs to identify and manage maternal depression, 66% rarely assessed or offered referral, mainly due to key differences in their beliefs and attitudes towards mental health in the peri and postnatal periods. Another study conducted by Shahid Ali *et al*. (2023) on the perspectives of PMH in Pakistan placed midwives at the core of key barriers to service provision, mainly due to their propensity of delaying the management of mental health issues. This was linked with cultural and social constructs that affect the beliefs and attitudes of HCPs towards the management of mental health among perinatal and postnatal women.

However, the role of HCPs in identifying and screening for depression in the early stages is crucial. The gaps revealed in the findings of this study indicate that HCPs did not use any tools to detect mental health problems in prenatal and postnatal women, revealing shortcomings in protocols and screening capacity among HCPs. This can be improved through the implementation of evidence-based delivery of educational content, particularly tailored to identify women undergoing perinatal depression, as well as the utilisation of outcome measures on the detected depression rates. A controlled trial conducted by Jardri *et al*. (2010) in the French context used a one-time training course that was delivered for three hours to midwives to educate them on new recommendations for screening and the importance of reliance on clear rule-based protocols on screening. The contents of the program entailed the proper administration of the EPDS, and the identification of risk-factors for perinatal depression. Jardri *et al*. (2010) reported significant improvement post-intervention in the usage of screening tools and better screening outcomes among the participants.

Moreover, the present study identifies limited time as a key impediment to service access and provision. The study on HCPs revealed key gaps in nurse staffing across Saudi Arabia, as well as clinic overcrowding, and a heavy patient load in the selected centres used for this study in Hail city. According to a separate study conducted by McCauley *et al*. (2019) limited resources, such as insufficient time allocated to attending each patient individually, is a key barrier to mental health screening, assessment, and the provision of counselling services. In addition, the Maternal Mental Health survey in (2017) conducted by the Royal College of Obstetricians and Gynaecologists in the UK established that women, in many instances, feel rushed during consultations – a factor whose origin can be traced back to clinic overcrowding and overstretched services (Russell *et al*., 2017). To address these issues, the KSA Ministry of Health should formulate policies on additional recruitment and talent retention among HCPs in obstetric care settings to improve the current patient-to-HCP ratio. According to Turner *et al*. (2021), one primary impact of having an adequate number of staff manifests in smaller workloads for HCPs, thus directly improving the quality of care and time allocated to attending to each patient at a time.

A perceived lack of support from partners, friends, and families was another common experience reported from in the present study, against a backdrop of socio-cultural factors. Other existing studies support this finding. In a report by Fellmeth *et al*. (2023), women often cited the fear of opening up about their feelings, emotions, and experiences to their friends or family members from the fear of being labelled as “lunatics”. A separate study by Shanbhag *et*

al. (2023) also cements the fear of stigmatisation and judgement as a key personal barrier to service access among women in antenatal care.

The HCPs in this research also lacked sufficient knowledge and skills regarding maternal mental health. In the interviews, they attributed this lack to poor skills and knowledge of the tools to diagnose and support such cases, emphasising that understanding the individual and utilising specific tools are crucial for better provision of care. This finding aligns with the studies by Brugha *et al*. (2016) and Layton *et al*. (2020), which revealed that midwives and nurses found training in psychological methods to be useful and complementary to their existing professional knowledge. Emotional assessment and care by HCPs are thus essential for providing emotional support to pregnant women.

The inadequate education of HCPs can be traced back to their college curricula, which included only one lecture on mental health and lacked specific content on pregnancy and postnatal mental health issues. Phillips (2015) highlighted similar gaps in the training curriculum of student midwives in the UK, noting that there was only one lecture on mental health and no formal training. Consequently, many HCP may not have the confidence and skills to support pregnant and postnatal women in mental health. Furthermore, the HCPs in this present study attributed the shortage of training and courses in mental health to their organisational system and workplace stakeholders. This issue is not unique to one country; research in different regions, such as Singapore (Gunasekaran *et al*., 2022) and the UK (Jomeen *et al*., 2013; McGookin *et al*., 2017), also indicate a lack of adequate training among healthcare providers in the mental health setting. Both studies highlight systemic barriers within healthcare systems.

It is difficult for women to gain access to mental health services, according to the findings of Study 1, and healthcare providers are aware of the difficulties they have when it comes to providing proper support, as stated in the Study 2. This shared narrative points to systemic deficiencies. Overcoming these barriers requires a dual-pronged approach. Structural changes within healthcare systems, including increased resources, specialised training, and the integration of standardised screening tools, are imperative. It is crucial that awareness campaigns simultaneously target the barriers associated with healthcare and society. The study conducted by Gulliver *et al*. (2018) also highlights the necessity of implementing systemic modifications to improve mental health services for women during the perinatal period on a global scale. The WHO's "Mental Health Report" (WHO, 2022e) emphasises the significance of incorporating mental health within primary healthcare, because integrated care by primary

care staff educated in mental health has been demonstrated to provide better health results than traditional primary healthcare, in line with the systemic improvements recommended by our findings.

7.6 THE ROLE OF SUPPORT SYSTEMS: A CONSISTENT THEME

Support networks emerged as the next major theme from this study. The women in Study 1 emphasised the significance of support from healthcare providers, partners, family, and friends. In parallel, Study 2 acknowledges the role of HCPs as emotional support providers during clinic appointments.

More specifically, the data identify a need for education and capacity development programs for pregnant and postpartum women and HCPs, a need for a multi-agency and multi-disciplinary approach to mental health, and the establishment of standardised protocols as key enablers for mental health service delivery. In this context, guidelines would serve as the preliminary phase of translating research findings into practical application and broadening the body of evidence. These findings were drawn from the qualitative interviews conducted on 10 HCPs and 10 women, as well as the quantitative survey conducted on 349 HCPs. As Daehn *et al*. (2022) reports, pregnant and postpartum women, their partners, families, and the general public, should be educated on the risk factors, symptoms, and the available treatment options for mental health. Moreover, there is also a need to educate the general public on the need for social and emotional support, as well as the misconceptions surrounding mental health concerns for pregnant and postpartum women in the Saudi context, congruent with the recommendations by Poreddi *et al*. (2020), who specified the importance of educating the public on PMH to reduce the stigma and discrimination associated with postpartum depression.

According to Legere *et al*. (2017), enhancing the levels of education and awareness for both pregnant and postpartum women and HCPs needs a policy-level approach that integrates organisational and system-level changes to transform the overall culture, approaches, and attitudes to mental health in maternity care settings. Evidence from Forrest and Poat (2010) supports the effectiveness of training both midwives and perinatal women regarding the prevention, detection, and management of mental illnesses. In the quasi-experimental study, the authors tested the effectiveness of online and face-to-face components on teaching HCPs and perinatal women's approaches towards mental health and recorded positive feedback and results from the sample tested. Equally, evidence gathered in the present study underscores the importance of designing and implementing psychoeducational programs targeting patients, medical staff, and families.

Similar to the findings of Pawils *et al*. (2016), comprehensive multi-disciplinary approaches are needed to encourage liaison between HCPs and pregnant and/or postpartum women. Ideally, there should be capacity building programs specifically designed for HCPs who are directly involved with women under antenatal care such as gynaecologists, midwives, nurses, psychiatrists, and general practitioners to ensure timely screening, referral, and efficient management of mental illnesses. Furthermore, as Goldin Evans *et al*. (2015) note, more evidence-based approaches are needed to be implemented with standardised protocols that ensure consistency of care across the entire country's healthcare system. The inadequacies in education and awareness, as identified in the present study, could be mitigated by introducing mandatory follow-up health consultations, as expressed by some of the women in the interviews. Morrell *et al*. (2009) also identified that providing follow-up sessions on all women assessed with depression as a mandatory provider intervention led to significant reduction in the number of women still experiencing depressive symptoms six-months postpartum. Finally, a study by Almutairi *et al*. (2023) conducted in Saudi Arabia recommended starting mental health screening at the first maternity clinic visit and continuing it throughout the postpartum period.

Government policy on mental health

While women struggle to recognise signs of mental health issues, professionals admit to gaps in education and training. Saudi Arabia has made significant efforts to address mental health issues by increasing access to care, reducing stigma, and improving social integration. Mental health training is becoming more available to primary care doctors, general practitioners, and postgraduates (Al-Habeeb *et al*., 2016). Additionally, community mental health services are increasingly provided by primary care physicians (Koenig *et al*., 2014). This integration of mental health care within primary healthcare facilitates the early detection of mental health cases and ensures proper referral to secondary care based on the severity and complexity of the issue. This process can be strengthened by making mental health training a more integral part of medical and nursing curricula to further support professionals in recognising mental health issues early.

The formal introduction of digital transformation into Saudi Arabia's healthcare sector has brought significant changes, unlocking numerous benefits that are transforming both patient care and healthcare services. A prime example is telemedicine, which has facilitated remote diagnosis and the ability for real-time health monitoring via wearable devices. This technology allows for timely intervention and tailored treatment adjustments based on data-driven insights.

Saudi Arabia's government is effectively utilising telehealth to improve the accessibility and delivery of healthcare services. By focusing on strengthening key infrastructure, the nation's ongoing digital transformation is redefining how care is provided, especially within primary care settings.

When looking specifically at mental health services, Saudi Arabia also commenced some initiatives to help the community like the (Labayh)", which was launched by the National Centre for Mental Health in Saudi Arabia in 2020. The "Labayh" initiative is a significant step forward in the country's mental health strategy. This programme aims to provide accessible mental health, and the "Labayh" mobile app provides confidential counselling and support for mental health issues, aiming to reduce stigma and increase awareness by connecting users with licensed therapists and offering educational resources. However, its effectiveness depends on widespread adoption, support from the government and healthcare sector, and continuous updates to meet evolving user needs. The accompanying "Labayh Al Amal" initiative offers confidential psychological counselling via a free smartphone app and aims to engage public sector employees. Its goal is to enhance their efficiency and productivity at work as part of the "Promoting Mental Health in the Work Environment" program. However, despite these efforts, according to a report by PwC Middle East (2022) on mental health in Saudi Arabia, four out of five individuals suffering from mental health illnesses in Saudi Arabia do not seek help or treatment. No participants across the study mentioned the government initiative or the app which indicates it is not, thus far, achieving its aims.

However, Saudi Arabia continues to face challenges in providing mental health services to the population, primarily due to socio-cultural norms and a lack of knowledge. Socio-cultural norms in Saudi society often stigmatise mental health issues, particularly among women. This is because many Saudi women fear judgment or negative repercussions from their families and communities, which discourages them from seeking help. This is supported by findings in this study as well as those from other studies by Alattar *et al*. (2021) and Alluhaibi and Awadalla (2022). Additionally, there is a widespread misconception that emotional distress during pregnancy and postpartum is a natural part of motherhood and does not require medical intervention. This lack of awareness significantly hinders early diagnosis and treatment. It therefore appears that inadequate knowledge about mental health issues extends to both the general population and healthcare providers. More specifically, many healthcare providers lack sufficient training in identifying and managing maternal mental health issues, which results in inconsistent care and support. And despite initiatives such as "Labayh" and "Labayh Al Amal",

aiming to improve mental health support, these efforts are not yet sufficient to overcome the deep-rooted cultural barriers and gaps in education.

This shared challenge highlights the necessity for a comprehensive educational overhaul. There is a pressing need for targeted education programmes that not only inform women about the importance of mental health care during the pregnancy and postnatal periods but also equip healthcare providers with the necessary skills and knowledge. The study conducted by Redshaw and Wynter (2022) confirms the idea that there are limitations in global awareness of prenatal mental health, which impacts both women and healthcare providers. By fostering a mutual understanding of mental health nuances among both women and healthcare providers, Saudi Arabia can improve the effectiveness of its mental health services and better support maternal mental health. The need for integrated educational initiatives aligns to the World Health Organisation's (WHO) recommendations for raising maternal mental health awareness globally. The WHO has launched several initiatives, including the Mental Health Gap Action Programme (mhGAP). This programme focuses on scaling up services for mental, neurological, and substance use disorders, particularly in low- and middle-income countries. Specifically, for maternal mental health, the WHO advocates for the integration of mental health services into primary healthcare systems, as well as training healthcare workers to detect and manage common mental health issues during pregnancy. The WHO's guidelines emphasise the importance of providing continuous education and support to healthcare providers, promoting early detection, and reducing stigma associated with mental health issues (WHO, 2022d)

The synthesis of findings from this embedded study paints a holistic picture of the challenges within perinatal/postnatal mental health care in Saudi Arabia. These challenges call for a nuanced, multi-level intervention strategy encompassing educational reforms, stigma reduction initiatives, and systemic changes within healthcare structures. This comprehensive understanding thus serves as the groundwork for informed policy recommendations. The interplay of knowledge gaps, stigma, systemic challenges, and the importance of support networks must guide the development of a sophisticated, culturally sensitive peri/postnatal mental health framework. The holistic approach advocated aligns with best practices in maternal mental health interventions (Howard *et al*., 2014). Tailoring interventions to cultural contexts is also essential, as highlighted in studies exploring PMH in diverse populations (Jane *et al*., 2012).

By utilising an embedded mixed-methods approach, this study sheds light on the limited awareness and understanding among pregnant and postpartum women regarding maternal

mental health issues. The findings underscore the potential consequences of this lack of awareness, including undetected conditions and delays in seeking help. The fear of societal judgment and stigma emerged as significant barriers, emphasising the need for increased awareness, support, and communication within familial contexts. Additionally, examining the perspectives of healthcare providers highlights a consensus that there is a lack of the necessary mental health knowledge to assess, refer, and follow up with perinatal and postnatal women. The study also revealed a lack of use of standardised screening tools, indicating a reliance on personal judgment which itself is subject to social bias. Reluctance to initiate discussions about mental health issues during clinic appointments and systemic barriers further hinder effective mental health support for pregnant and postnatal women. Lastly, the descriptive quantitative approach confirms that healthcare providers in the region lack the knowledge and education necessary to accurately diagnose and treat pregnancy-related mental health problems, emphasising the need for targeted training programs. This finding stresses the importance of customised interventions, cultural sensitivity, and policy advocacy to raise perception among healthcare providers, expectant and postnatal women. Addressing areas of limited understanding and advocating for a holistic approach to mental health services can enhance the overall well-being of mothers-to-be, ensuring exceptional care for expectant and postnatal women.

7.7 STRENGTHS AND LIMITATIONS OF THE STUDY

The use of this mixed methods approach allowed the shortcomings of each individual element to be balanced by the others, strengthening the overall results. That said, the requirements on the researcher in terms of time and effort were significant, an expected challenge in doctoral research. Furthermore, data collection was conducted in a different country to the one in which the researcher was studying for her PhD, requiring travel after receiving ethical approval. In addition, the women and HCPs whose views were captured in this study are specific to a particular location which was Hail, KSA, Therefore, the findings may not be generalisable to other places.

Another major constraint of the study was the challenge in finding participants due to the embarrassment and insufficient understanding of the subject matter. This was compounded by the requirement for interviews to be voice recorded, an experience that was novel to the women involved. For this reason, most participants expressed their concern over the privacy of their data even after being assured about the confidentiality of the research. Some women refused to be interviewed and cited religious and cultural reasons for their refusal. To manage and mitigate

potential rejection due to the sensitive nature of mental health issues in Saudi society, data were collected based on the appointment time for pregnant and postnatal women (before or after the appointment). Additionally, the self-reporting nature of the data has the potential to introduce biases, as participants might underreport or overreport certain aspects due to social desirability or stigma, which could imply that their experiences may differ from those of participants who chose not to participate.

This thesis contributes to the changing research landscape of the maternal mental health in Saudi Arabia. The inclusion of both women and healthcare providers in the study and the overlapping nature of the results from both groups gives strength to the findings. This thesis takes the novel approach of delineating this form both perspectives. These perspectives could be vital in shaping mental healthcare for women, consistent with the available evidence from other settings. This study offers valuable insight into the maternal mental health perceptions, thus serving as a strong foundation for future inquiries, encouraging a continued focus on perinatal and postnatal mental health in diverse cultural contexts. The integration of both perspectives enables the development of well-rounded recommendations that consider the viewpoints of both groups. By addressing the identified gaps and building on the proposed recommendations, there exists a significant opportunity to effect transformative changes in care, ultimately improving the well-being of women and their families.

7.8 CONTRIBUTION TO KNOWLEDGE

This section highlights several ways in which the current research has added to the existing body of knowledge. Overall, this research provides new knowledge and critical insights into the landscape of maternal mental health in Saudi Arabia, particularly during the antenatal and postnatal periods. The literature reviews contained within this thesis evidenced that there were no available studies that were undertaken in KSA and no evidence in relation to the specific aims of the current study. This would suggest that the undertaking of semi-structured interviews exploring the perceptions of maternal mental health form various perspectives would represent original contribution. Another original contribution of this study was the questionnaire that was used to assess the level of maternal mental health knowledge among healthcare providers HCPs in Saudi Arabia. By integrating the perspectives of women and health professionals on maternal mental health, this thesis adopts a novel approach to delineate this form.

It has also offered insight into the views of women and healthcare providers regarding the barriers that hinder the mental health care services. Through analysis of the data gathered, a

number of core suggestions have been provided here and summarised in the following section to increase awareness and knowledge of women and HCPs on mental health during the antenatal and postnatal periods in Hail, Saudi Arabia. If implemented, the recommendations will influence policymakers to enact changes that will help improve Saudi women's mental health and well-being. They will also assist stakeholders and policymakers within the healthcare industry in drafting policies tailored to the needs of Saudi women and healthcare providers.

7.9 RECOMMENDATIONS

Building upon the findings presented in this thesis, several recommendations can be made to enhance perinatal and postnatal mental health care in Saudi Arabia:

1. *Comprehensive Educational Reforms in the Healthcare Field*: Develop and implement comprehensive educational programs targeting healthcare providers. These programs should focus on increasing knowledge, reducing stigma, and enhancing support for the mental health of peri/postnatal women.
2. *Systemic Changes in Healthcare*: Encourage systemic changes within healthcare systems, including increased resources, specialised training, and the integration of standardised screening tools. This could involve policy initiatives and collaborations between healthcare institutions and relevant authorities.

   Develop and implement tailored educational programs for healthcare providers based on their job specifications. This could involve specialised training modules and workshops to address specific knowledge gaps identified in this study.
3. *Support Network Strengthening*: Promote interventions that strengthen support networks, both within healthcare settings and in the broader community. This includes enhancing healthcare providers' support capabilities and raising awareness about the importance of familial and social support.
4. *Psychoeducational Programmes*: Encourage the use of psychoeducational programmes in KSA to support mental health issues. Zhao *et al*. (2015), demonstrated the potential effectiveness of these programmes in a systematic review of 20 studies, which concluded that psychoeducation appears to reduce symptoms and promote adherence in severe mental illnesses.

5. *Designing Suitable Sociocultural Interventions:* Implementing cultural change can be challenging and time-consuming, with interventions not always ensuring success (Norton & Marks-Maran, 2014). Rather than aiming for broad cultural transformation, it may be more effective to start first to focus on key healthcare providers responsible for maternal care. Targeting these individuals for enhanced training, education, and provide a clear framework could lead to more meaningful improvements.

6. *Integration of Mental Health in Maternal and Child Health Services:* In Saudi Arabia, where mental health topics are particularly sensitive, integrating mental health care into maternal and child health services is a crucial strategy for addressing these challenges. The WHO (2022) recommends this integration as a key policy. Training healthcare providers to recognise and address mental health issues during routine perinatal/ postnatal visits can bridge the treatment gap and improve outcomes for both women and their children.

7. *Public Awareness Campaigns*: Launch public awareness campaigns to destigmatise mental health issues during the perinatal/postnatal period. These campaigns should address societal attitudes and perceptions, fostering a more supportive environment for women experiencing peri/postnatal mental health challenges. Community schools also need to include mental health topics as part of the public awareness for the next generation.

7.10 IMPLICATIONS FOR FUTURE RESEARCH

This study elucidates the experience of a small group of Saudi women and health professionals on their perceptions of mental healthcare provision and mental health of pregnant and postnatal women, representing an opportunity to broaden the scope of knowledge in this area. Future research should further explore the complexities of pregnancy and postnatal mental health, particularly in culturally diverse contexts. Considering the gaps in knowledge, awareness, and resources that have been uncovered, it is imperative to explore targeted interventions that consider the unique cultural nuances influencing maternal mental health. Furthermore, investigations should endeavour to evaluate the efficacy of established interventions, such as enhanced educational and training programmes for health care providers, community involvement initiatives, and standardised screening methods. Conducting longitudinal studies to monitor the long-term effects of these interventions would provide vital insights into their continued usefulness. For example, a comparative analysis of PMH practices

in Saudi Arabia with global best practices would certainly allow the identification of other key areas for development. Moreover, future investigations should broaden their scope to encompass the experiences and viewpoints of not just expectant and postpartum women, but also their families and wider support systems. Adopting a comprehensive strategy such as this would yield a greater understanding of the various complex elements that impact mental health during the pre and postnatal periods. By incorporating these recommendations, forthcoming investigations would possess the capacity to formulate evidence-based policies and interventions that substantially enhance the overall well-being of women and their families during the pre and postnatal periods.

7.11 PERSONAL REFLECTION

Carrying out this study has been very challenging. Looking back on the lengthy journey of writing my thesis on pregnancy and postnatal mental health in Saudi Arabia, I am filled with immense satisfaction and acknowledge that the research process has been life changing. My thoughts, experiences, and the current state of knowledge about this subject in Saudi Arabia are all condensed within this thesis. Stigma was the biggest obstacle for me, which emerged as a formidable adversary, intricately woven into societal and professional perspectives. The fear of societal judgment among women and the biases held by healthcare providers showcased the intricate threads of stigma. Untangling and addressing this complex issue became a crucial necessity to succeed in providing a fine-grained analysis of the situation in Hail and Saudi Arabia more generally. The reflection here is a personal acknowledgment of the emotional weight carried by stigma and the commitment required to challenge and change ingrained societal perceptions. As I observed, many women declined to participate in this research study due to stigma and fear of societal judgment, even after I explained to them that their names would remain anonymous and their voices would only be heard by me and my supervisors.

At the beginning of this project, I hoped that conducting this study would help policymakers better understand the need for a suitable societal intervention in maternal mental health. The recommendations developed from this research are aimed at enhancing the experiences of this population. I believe that, if implemented, these recommendations could significantly improve women's mental health. As I pen these final thoughts, I carry forward not just a thesis but a sense of responsibility and a commitment to fostering positive change in perinatal and postnatal mental health, one that extends beyond the confines of academia into the realms of policy, practice, and societal attitudes. The echoes of this journey linger,

resonating with the belief that, through research, we can contribute meaningfully to the well-being of women in Saudi Arabia and, by extension, to women globally.

7.12 CONCLUSION

This embedded, mixed methods study has explored the knowledge and perception held by women and healthcare providers regarding maternal mental health in Hail, KSA, revealing critical insights into the challenges faced by women and healthcare providers. Both pregnant and postnatal women, along with healthcare providers, concurred that there are significant deficiencies in knowledge, awareness, and resources required to recognise and address maternal mental health issues. The investigations revealed several obstacles, including stigma, insufficient education and training, time constraints, absence of rules and standards, cultural taboos, and societal norms. The studies emphasise the widespread presence of these obstacles in various environments and demographics, indicating the necessity for comprehensive and systematic alterations in the provision of mental health treatment.

The study has also identified various potential solutions, such as implementing enhanced education and training programmes for healthcare providers that involve collaboration among multiple disciplines, launching community outreach initiatives, adopting standardised screening and assessment methods, establishing mechanisms for data collection and monitoring, and implementing patient education initiatives that specifically target pregnant and postpartum women and their families. To effectively address the obstacles in maternal mental health treatment in Hail and other areas, a cooperative and comprehensive strategy is necessary. To effectively treat the challenging mental health issues experienced by pregnant and postnatal women, healthcare providers should use a holistic approach that emphasises education, awareness, training, and integration.

This thesis is a crucial contribution towards Saudi Arabia's Vision 2030, which is an important national project. One of its key objectives is to educate Saudi society. By leading and inspiring the implementation of the recommendations suggested in this thesis, I aim to effectively achieve the goals outlined in the Kingdom's national vision. This will be done by disseminating important information about maternal mental health among women and healthcare providers, with a particular focus on pregnant and postnatal women. Additionally, it will highlight the necessity of increasing mental health care during this critical timeframe.

The study has identified several challenges faced by women and healthcare providers and made recommendations for future research. Moreover, recommendations were given for

different key target populations, such as the government, community, healthcare providers, and women themselves. These recommendations aim to ensure that everyone plays their part in improving awareness and knowledge of mental health care during the antenatal and postnatal periods in Saudi Arabia.

 Unveiling Maternal Mental Health: Exploring The Perceptions And Practices Of Mental Health Care For Pregnant And Postnatal Women In Kingdom Of Saudi Arabia: A Mixed Methods Study

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Appendices

Appendix A

Critical Appraisal Table of Included Studies (Women Literature Review)

CASP Methodological Quality Appraisal of **Qualitative Studies** for Pregnant and Postnatal Women's Awareness of Mental Health Issues

Authors	**Item 1** Clear focus	**Item 2** Appropriate methodology	**Item 3** Appropriate design	**Item 4** Appropriate recruitment	**Item 5** * Data collected addressed the issue	**Item 6** Relationship between the researcher and participants	**Item 7** ∇ Ethical issues	**Item 8** Sufficiently rigorous analysis	**Item 9** ≠ Clear findings	**Item 10** Valuable research
Al-Abri *et al*. (2023)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear
Abrams *et al*. 2016)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Unclear≠	Clear
Ng'oma *et al*. (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear
Nakku *et al*. (2016)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Unclear≠	Clear
Bledsoe *et al*. (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Unclear ∇	Yes	Yes	Clear
Byrnes (2019)	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear ∇	Yes	Unclear≠	Clear
Spedding *et al*. 2018)	Yes	Yes	Yes	Yes	Unclear*	Unclear	Yes	Yes	Unclear≠	Clear
Franks *et al*. (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear
Agyekum (2023)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear

Fellmeth *et al*. (2023)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear
Li *et al*. (2021)	Yes	Yes	Yes	Yes	Unclear*	Yes	Yes	Yes	Yes	Partially

CASP Key:

1. Was there a clear statement of the aims of the research?
2. Is a qualitative methodology appropriate?
3. Was the research design appropriate to address the aims of the research?
4. Was the recruitment strategy appropriate to the aims of the research?
5. Was the data collected in a way that addressed the research issue?
6. Has the relationship between the researcher and participants been adequately considered?
7. Have ethical issues been taken into consideration?
8. Was the data analysis sufficiently rigorous?
9. Is there a clear statement of findings?
10. How valuable is the research?

* Theoretical saturation not discussed/completed.
≠ Credibility of findings not explicitly discussed.
∇ No ethical approval obtained.

CASP Methodological Quality Appraisal of **Quantitative Studies** for Women's Awareness

Authors	**Item 1** Clear focus	**Item 2** Recruitment acceptable	**Item 3** Measures to minimise bias in exposure	**Item 4** ≠ Outcome measures to minimise bias	**Item 5 A** Confounders identified	**Item 5 B** Confounders identified	**Item 6 A** Subjects complete	**Item 6 B** Subjects long enough	**Item 7** Results identified	**Item 8** Results precise	**Item 9** Results believable	**Item 10** Results be applied to local population	**Item 11** Results fit with available evidence	**Item 12** ∇ Are study implications made clear
Lara *et al*. (2014)	Yes	Yes*	Unclear	Unclear[1]	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Abazie & Usoro (2021)	Yes	Yes	Clear	Clear	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Manjrekar and Patil (2018)	Yes	Yes*	Unclear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear∇
Ransing *et al*. (2020)	Yes	Yes*	Unclear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Lodha *et al*. (2022)	Yes	Yes*	Unclear	Unclear≠	No	No	Unclear	Unclear	Unclear	Yes	Yes	Yes	Unclear	Clear∇
Nwoke *et al*. (2023)	Yes	Yes*	Clear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear∇

Checklist:

1. Did the study address a clearly focused issue?
2. Were the subjects recruited in an acceptable way?
3. Was the exposure accurately measured to minimise bias?
4. Was the outcome accurately measured to minimise bias?
5. (a) Have the authors identified all important confounding factors?
6. (b) Have they taken account of the confounding factors in the design and/or analysis?
7. (a) Was the follow up of subjects complete enough?
6. (b) Was the follow up of subjects long enough?
7. What are the results of this study?.
8. How precise are the results? .
9. Do you believe the results?.

10. Can the results be applied to the local population?.
11. Do the results of the study fit with other available evidence?
12. What are the implications of this study for practice?

* Convenience sample.

* Convenience sample.

≠ Reliability and validity of the questionnaire not reported.

∇ No ethical approval obtained.

Appendix B

Critical Appraisal Table of Included Studies (HCP Literature Review)

CASP Methodological Quality Appraisal of **Quantitative Studies** for Healthcare Providers' Awareness

Authors	**Item 1** Clear focus	**Item 2** Recruitment acceptable	**Item 3** Measures to minimise bias in exposure	**Item 4** ≠ Outcome measures to minimise bias	**Item 5 A** Confounders identified	**Item 5 B** Confounders identified	**Item 6 A** Subjects complete	**Item 6 B** Subjects long enough	**Item 7** Results identified	**Item 8** Results precise	**Item 9** Results believable	**Item 10** Results be applied to local population	**Item 11** Results fit with available evidence	**Item 12** ∇ Are study implications made clear
Hauck *et al.* (2015)	Yes	Yes*	Unclear	Yes	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Jones *et al.* (2011)	Yes	Yes	Clear	Yes	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Carroll *et al.* (2018)	Yes	Yes	Unclear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Noonan *et al.* (2018)	Yes	Yes	Unclear	Yes	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Rothera and Oates (2011)	Yes	Yes*	Unclear	Unclear≠	No	No	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Adjorlolo *et al.* (2019)	Yes	Yes*	Clear	Yes	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Higgins *et al.* (2018)	Yes	Yes	Clear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Magdalena & Tamara (2020)	Yes	Yes	Clear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear∇
Ransing *et al.* (2020)	Yes	Yes*	Clear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Patabendige *et al.* (2020)	Yes	Yes	Clear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
McCauley *et al.* (2011)	Yes	Yes*	Clear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear
Poo *et al.* (2023)	Yes	Yes*	Clear	Unclear≠	Yes	Yes	Unclear	Unclear	Clear	Yes	Yes	Yes	Clear	Clear

Checklist:

13. Did the study address a clearly focused issue?
14. Were the subjects recruited in an acceptable way?
15. Was the exposure accurately measured to minimise bias?
16. Was the outcome accurately measured to minimise bias?
17. (a) Have the authors identified all important confounding factors?
18. (b) Have they taken account of the confounding factors in the design and/or analysis?
19. (a) Was the follow up of subjects complete enough?
20. (b) Was the follow up of subjects long enough?
21. What are the results of this study?
22. How precise are the results?
23. Do you believe the results?
24. Can the results be applied to the local population?
25. Do the results of the study fit with other available evidence?
26. What are the implications of this study for practice?

* Convenience sample.

≠ Reliability and validity of the questionnaire not reported.

∇ No ethical approval obtained

CASP Methodological Quality Appraisal of **Qualitative Studies** for Healthcare Providers' Awareness

Authors	**Item 1** Clear focus	**Item 2** Appropriate methodology	**Item 3** Appropriate design	**Item 4** Appropriate recruitment	**Item 5** * Data collected addressed the issue	**Item 6** Relationship between the researcher and participants	**Item 7** ∇ Ethical issues	**Item 8** Sufficiently rigorous analysis	**Item 9** ≠ Clear findings	**Item 10** Valuable research
Al-Abri *et al.* (2023)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear
Abrams *et al.* (2016)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Unclear≠	Clear
McCauley *et al.* (2019)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Unclear≠	Clear
Silverwood *et al.* (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear
Machmud *et al.* (2020)	Unclear	Yes	Yes	Unclear	Unclear*	Unclear	Unclear§	Yes	Yes	Clear
Fletcher *et al.* (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear
Jawed *et al.* (2021)	Yes	Yes	Yes	Yes	Unclear*	Yes	Yes	Yes	Yes	Clear
Nakidde *et al.* (2023)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear
Navarrete *et al.* (2022)	Yes	Yes	Yes	Yes	Unclear*	Yes	Yes	Yes	Unclear≠	Clear
Shahid Ali *et al.* (2023)	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear§	Yes	Unclear≠	Clear
Xiao *et al.* (2023)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Clear

CASP Key:

27. Was there a clear statement of the aims of the research?
28. Is a qualitative methodology appropriate?
29. Was the research design appropriate to address the aims of the research?
30. Was the recruitment strategy appropriate to the aims of the research?
31. Was the data collected in a way that addressed the research issue?
32. Has the relationship between the researcher and participants been adequately considered?
33. Have ethical issues been taken into consideration?
34. Was the data analysis sufficiently rigorous?
35. Is there a clear statement of findings?
36. How valuable is the research?

* Theoretical saturation not discussed/completed.
≠ Credibility of findings not explicitly discussed.
§ Did not explicitly discuss informed consent.
∇ No ethical approval obtained.

Checklist for **Mixed Methods** Studies Using the Mixed Methods Appraisal Tool (MMAT)

Author /Year	**Is there an adequate rationale for using a mixed methods design to address the research question?**	**Are the different components of the study effectively integrated to answer the research question?**	**Are the outputs of the integration of qualitative and quantitative components adequately interpreted?**	**Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?**	**Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?**
Patabendige *et al.* (2020)	Yes	Yes	Yes	Yes	Yes
McCauley *et al.* (2011)	Yes	Yes	Yes	Yes	Yes
Savory *et al.* (2022)	Yes	Yes	Yes	Yes	Yes

Appendix C

Research Ethics Committee Approvals

Decision - Ethics ETH2122-1494: Ms Athar Alshammari

From: Ethics Monitor no-reply@ethicsreview.uea.ac.uk
To: Athar Alshammari (HSC - Postgraduate Researcher) Athar.Alshammari@uea.ac.uk
Date: Fri, 13 May 2022, 2:58 PM

University of East Anglia

Study title: Women's Awareness and Knowledge of Mental health Issues during Pregnancy and the Postpartum Period in Kingdom of Saudi Arabia

Application ID: ETH2122-1494

Dear Athar,

Your application was considered on 13th May 2022 by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee).

The decision is: **approved**.

You are therefore able to start your project subject to any other necessary approvals being given.

If your study involves NHS staff and facilities, you will require Health Research Authority (HRA) governance approval before you can start this project (even though you did not require NHS-REC ethics approval). Please consult the HRA webpage about the application required, which is submitted through the IRAS system.

This approval will expire on **31st December 2022**.

Please note that your project is granted ethics approval only for the length of time identified above. Any extension to a project must obtain ethics approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) before continuing.

It is a requirement of this ethics approval that you should report any adverse events which occur during your project to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) as soon as possible. An adverse event is one which was not anticipated in the research design, and which could potentially cause risk or harm to the participants or the researcher, or which reveals potential

1 / 2

تجمع حائل الصحي
Hail Health Cluster

IRB Registration Number with KACS, KSA: H-08-L-074

May 22, 2022

IRB Log Number: 2022-37

Category of Approval: EXPEDITED

Dear PI Mrs. Athar Alshammari,

I am pleased to inform you that your submission completed on 13 May 2022 for the study entitled **"Women's Awareness and Knowledge of Mental Health Issues during Pregnancy and the Postpartum Period in Kingdom of Saudi Arabia"** was approved. Please note that this approval is from the research ethics perspective only. You still need to get permission from the concerned institution to commence data collection and you also need another approval from the IRB for publication purpose.

We wish you well as you proceed with this study and request you to keep the IRB informed of the progress on regular bases (every three months), using the IRB log number shown above. **This approval is valid for one year from the date of issue.**

If you have any further questions feel free to contact us.

Sincerely yours,

Dr. Talal Majed Alzabni

Chairman, Institutional Review Board (IRB)

General Directorate of Health Affairs, Hail Region, KSA

Tel: + 966165582115

Email: IRB-HAIL@MOH.GOV.SA

وزارة الصحة
General Directorate of Health Affairs
Hail Region
Institutional Review Board (IRB)
Approved
Date: 22/5/2022

الرقم:

التاريخ:

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تجمع حائل الصحي
Hail Health Cluster

الموضوع: خطاب تسهيل مهمة بحث علمي

سعادة مدراء مستشفيات منطقة حائل وفقك الله

السلام عليكم ورحمة الله وبركاته

نفيد بأن الباحثة/ آثار بنت عوده الشمري قد حصلت على موافقة لجنة أخلاقيات البحوث الحيوية بحائل بالقرار رقم ٢٠٢٢/٣٧ وتاريخ ٢٠٢٢/٥/٢٢م (مرفق) لإجراء دراسة بعنوان:

"Women's Awareness and Knowledge of Mental Health Issues during Pregnancy and the Postpartum Period in Kingdom of Saudi Arabia".

نأمل تسهيل مهمة الباحثة لجمع البيانات اللازمة لدراستها بما يضمن عدم تأثر الخدمة الصحية المقدمة للمراجعين مع الإحاطة أن فترة جمع البيانات لا تتجاوز عام واحد من تاريخ صدور القرار. شاكرين ومقدرين لكم حُسن تعاونكم. حال الاستفسار، يمكنكم التواصل معنا عبر البريد الرسمي: irb-hail@moh.gov.sa.

والسلام عليكم ورحمة الله وبركاته

مدير إدارة الأبحاث في تجمع حائل الصحي

الدكتور/ سعد بن عبدالله الرشيد

الرقم: ٣٧/٢٠٢٢ التاريخ: ٢٢/٥/٢٠٢٢م

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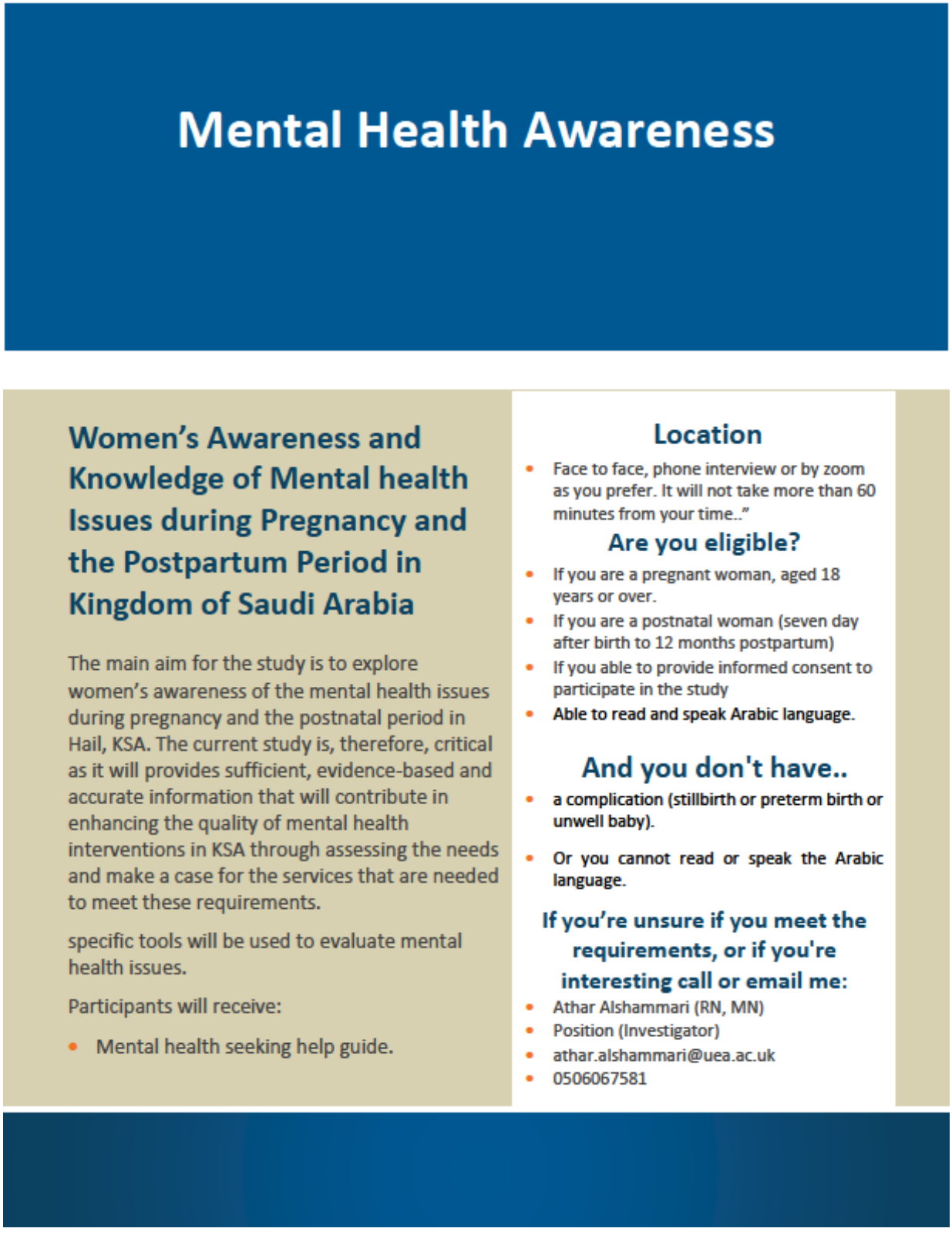
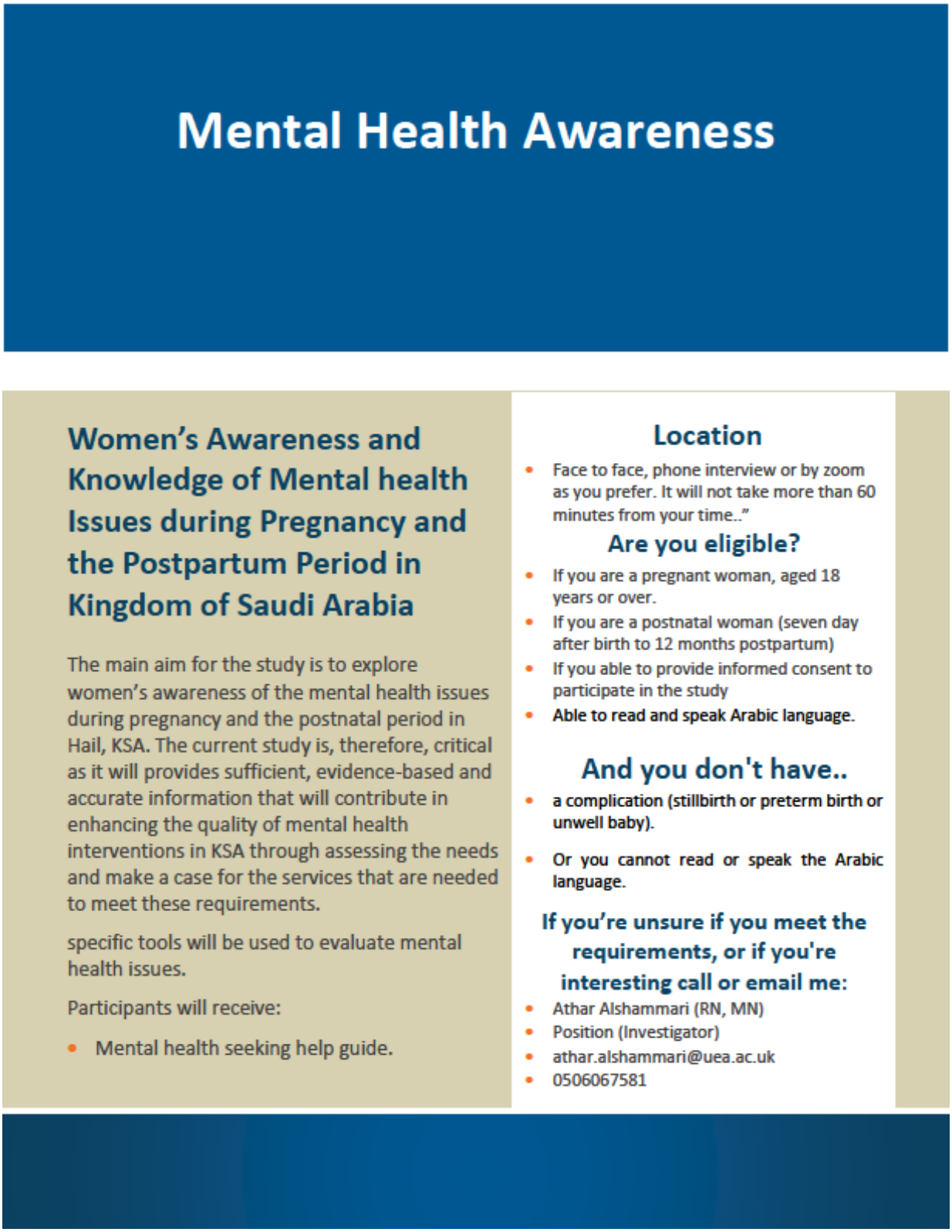
Appendix D

Recruitment Invitation Letters Phase 1

Recruitment Invitation Letter for Women



Recruitment Invitation Letter for Women (Arabic Version)



Appendix E Participant Information Sheets - Phase 1

Participant Information Sheet for Women

Ms Athar Alshammari
Investigator

11 May 2022

Faculty of Medicine & Health Sciences
School of Health Sciences

University of East Anglia
Norwich Research Park
Norwich NR4 7TJ
United Kingdom

Email: athar.alshammari@uea.ac.uk
Tel: 0506067581
Web: www.uea.ac.uk

Women's Awareness and Knowledge of Mental health Issues during Pregnancy and the Postpartum Period in Kingdom of Saudi Arabia

PARTICIPANT INFORMATION SHEET FOR WOMEN

(1) What is this study about?

You are invited to take part in a research study about Women's Awareness and Knowledge of Mental health Issues during Pregnancy and the Postpartum Period in Hail City, Kingdom of Saudi Arabia.The current study is, therefore, critical as it will provides sufficient, evidence-based and accurate information that will contribute in enhancing the quality of mental health interventions in KSA through assessing the needs and make a case for the services that are needed to meet these requirements. The current study will evaluate critical aspects of the issues including the level of awareness and knowledge of mental health issues among mothers before or immediately after childbirth in KSA, major issues that hinder provision of quality mental health services and strategies that can be adopted to assist pregnant mothers prevent or overcome mental health issues.This Participant Information Sheet tells you about the research study. Knowing what is involved will help you decide if you want to take part in the study. Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

Participation in this research study is voluntary. By giving consent to take part in this study you are telling us that you:

- ✓ Understand what you have read.
- ✓ Agree to take part in the research study as outlined below.
- ✓ Agree to the use of your personal information as described.
- ✓ You have received a copy of this Participant Information Sheet to keep.

(2) Who is running the study?

The study is being carried out by the following researcher(s): Ms Athar Alshammari.athar.alshammari@uea.ac.uk, telephone: 050606758.
This will take place under the supervision of Prof Kenda Crozier K.Crozier@uea.ac.uk , or Dr Meghana Kamble M.Kamble@uea.ac.uk.

(3) What will the study involve for me?

You are being invited to take part in this study because you are: over 18 years of age, can read and speak Arabic, Pregnant or have given birth (seven day after birth to 12 month postpartum). You have

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had no complication (stillbirth or preterm birth or unwell baby). Or if you cannot read or speak the Arabic language you cannot invovle in the this study.
your participation in this study is entirely voluntary. Your rights or treatment will not be affected if you do not participate, and you are free to leave the study at any time without explanation or negative consequences.

Before the meeting you will be asked to fill a short questionnaire about yourself which will sent to you. After that we will organise a time and date to meet, the meeting will last no more than 60 minuets. After the interview you will be asked to fill in some questionnaires about your own feelings and emotions.
Following interview, you will have the opportunity to ask any questions that have not already been answered regarding the study.

An audio recording will be taken.

You will have the opportunity to review information generated about you prior to publication.

(4) How much of my time will the study take?
Before the meeting you will be asked to fill a short questionnaire about yourself which will sent to you. After that we will organise a time and date to meet, the meeting will last no more than 60 minuets. After the interview you will be asked to fill in some questionnaires about your own feelings and emotions.
Following interview, you will have the opportunity to ask any questions that have not already been answered regarding the study.

(5) Do I have to be in the study? Can I withdraw from the study once I have started?
Being in this study is completely voluntary and you do not have to take part.
Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at the University of East Anglia now or in the future.

If you decide to take part in the study, you can withdraw your consent at any point. You can do this by you are free to leave the study at any time without explanation or negative consequences.

(6) What are the consequences if I withdraw from the study?
You are free to stop the interview at any time. Unless you say that you want us to keep them, any recordings will be erased and the information you have provided will not be included in the study results. You may also refuse to answer any questions that you do not wish to answer during the interview. If you decide at a later time to withdraw from the study your information will be removed from our records and will not be included in any results, up to ONE MONTH after the interview finished.

(7) Are there any risks or costs associated with being in the study?
Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

(8) Are there any benefits associated with being in the study?
There are no direct benefits in taking part. However, the results that you provide will help us to have a better understanding of the level of awareness and knowledge of women about mental health

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problems that might affect pregnant women and new mothers. This in turn will help to identify what is needed to promote and raise the awareness in pregnancy and the postpartum period to effectively support women's in mental health.
This study's design prioritized your care and well-being. Adverse effects are expected to be minor, and this study is unlikely to result in any physical or psychological side effects, risks, or hazards. However, If you during the discussion you experience any emotional discomfort or wish to withdraw at any point during the meeting , please notify the researcher immediately, and the study will be halted. There are also contact details of various support networks provided at the end of this document should you require any further advice or information about mental wellbeing in pregnancy or in postpartum period.

(9) What will happen to information provided by me and data collected during the study?
To ensure confidentiality of your personal data, your identity will be kept private by the student researcher and any study report will not contain your true name or identity, and that a pseudonym/code will be used instead. In the meeting you do not have to use your real name if you prefer but all participants of meetings will be asked to keep the discussions confidential.
Audio files will be stored on a secure university drive and any computerized participant data will be kept in a password-protected folder available only to the research team and will be identified solely by a participant number. Hard copies of information will be kept in a locked filing cabinet, only accessible to the research team

Your personal data and information will only be used as outlined in this Participant Information Sheet, unless you consent otherwise. Data management will follow the Data Protection Act 2018 (DPA 2018) and UK General Data Protection Regulation (UK GDPR), and the University of East Anglia's Research Data Management Policy.

The information you provide will be stored securely and your identity will be kept strictly confidential, except as required by law. Study findings may be published, but you will not be identified in these publications if you decide to participate in this study.
Study data may also be deposited with a repository to allow it to be made available for scholarly and educational purposes. The data will be kept for at least 10 years beyond the last date the data were accessed. The deposited data will not include your name or any identifiable information about you.

(10) What if I would like further information about the study?
When you have read this information, Ms Athar Alshammari (athar.alshammari@uea.ac.uk, 0506067581) will be available to discuss it with you further and answer any questions you may have.

(11) Will I be told the results of the study?
You are not able to receive feedback about the overall results.

(12) What if I have a complaint or any concerns about the study?
If there is a problem please let me know. Or You can contact the following address:

Mr Toby Smith
School of Health Sciences
University of East Anglia

University of East Anglia

NORWICH NR4 7TJ
toby.smith@uea.ac.uk

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the Associate Professor in Physiotherapy in School of Health Sciences Toby Smith via email; toby.smith@uea.ac.uk.

(13) How do I know that this study has been approved to take place?
To protect your safety, rights, wellbeing and dignity, all research in the University of East Anglia is reviewed by a Research Ethics Body. This research was approved by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee).

(14) What is the general data protection information I need to be informed about?
According to data protection legislation, we are required to inform you that the legal basis for processing your data as listed in Article 6(1) of the UK GDPR is because this allows us to process personal data when it is necessary to perform our public tasks as a University.

In addition to the specific information provided above about why your personal data is required and how it will be used, there is also some general information which needs to be provided for you:

- The data controller is the University of East Anglia.
- For further information, you can contact the University's Data Protection Officer at dataprotection@uea.ac.uk
- You can also find out more about your data protection rights at the Information Commissioner's Office (ICO).
- If you are unhappy with how your personal data has been used, please contact the University's Data Protection Officer at dataprotection@uea.ac.uk in the first instance.

(15) OK, I want to take part – what do I do next?
You need to fill in one copy of the consent form and after the consent we will start the interview Please keep the letter, information sheet and the second copy of the consent form for your information.

(16) Further information
This information was last updated on 11 May 2022.

If there are changes to the information provided, you will be notified by email, telephone number

This information sheet is for you to keep

Participant Information Sheet for Women (Arabic Version)

السيدة آثار الشمري
باحث

11 مايو 2022

كلية الطب والعلوم الصحية
كلية العلوم الصحية

جامعة إيست أنجليا
حديقة نورويتش للأبحاث
نورويتش NR4 7TJ
المملكة المتحدة

البريد الإلكتروني: athar.alshammari@uea.ac.uk
الهاتف: 0506067581
الويب: www.uea.ac.uk

وعي المرأة ومعرفتها بقضايا الصحة النفسية أثناء الحمل وفترة ما بعد الولادة في المملكة العربية السعودية

ورقة معلومات للمشاركين من أجل النساء

(1) ما هي هذه الدراسة؟

أنت مدعو للمشاركة في دراسة بحثية حول وعي المرأة ومعرفتها بقضايا الصحة العقلية أثناء الحمل وفترة ما بعد الولادة في مدينة حائل ، المملكة العربية السعودية. وبالتالي، فإن الدراسة الحالية باللغة الأهمية لأنها ستوفر معلومات كافية وقائمة على الأدلة ودقيقة من شأنها أن تسهم في تعزيز جودة تدخلات الصحة النفسية في المملكة العربية السعودية من خلال تقييم الاحتياجات وتقديم الحجج للخدمات اللازمة لتلبية هذه المتطلبات. ستقوم الدراسة الحالية بتقييم الجوانب الحرجة للقضايا بما في ذلك مستوى الوعي والمعرفة بقضايا الصحة النفسية بين الأمهات قبل أو بعد الولادة مباشرة في المملكة العربية السعودية ، والقضايا الرئيسية التي تعيق توفير خدمات الصحة النفسية عالية الجودة والاستراتيجيات التي يمكن تبنيها لمساعدة الأمهات الحوامل على منع أو التغلب على قضايا الصحة العقلية. تخبرك ورقة معلومات المشاركين هذه عن الدراسة البحثية. ستساعدك معرفة ما ينطوي عليه الأمر على تحديد ما إذا كنت ترغب في المشاركة في الدراسة. يرجى قراءة هذه الورقة بعناية وطرح أسئلة حول أي شيء لا تفهمه أو تريد معرفة المزيد عنه.

المشاركة في هذه الدراسة البحثية طوعية. من خلال إعطاء الموافقة على المشاركة في هذه الدراسة ، فإنك تخبرنا بأنك:

- ✓ افهم ما قرأته.
- ✓ الموافقة على المشاركة في الدراسة البحثية على النحو المبين أدناه.
- ✓ الموافقة على استخدام معلوماتك الشخصية على النحو الموضح.
- ✓ لقد تلقيت نسخة من ورقة معلومات المشارك هذه للاحتفاظ بها.

(2) من يدير الدراسة؟

ويقوم بإجراء الدراسة الباحث (الباحثون) التاليون: *السيدة آثار الشمري*. athar.alshammari@uea.ac.uk، الهاتف: 0506067581. سيتم ذلك تحت *إشراف البروفيسورة كيتدا كروزييه* K.Crozier@uea.ac.uk ، *أو الدكتورة ميغانا كامبل* M.Kamble@uea.ac.uk.

(3) ما الذي ستتضمنه الدراسة بالنسبة لي؟

أنت مدعوة للمشاركة في هذه الدراسة لأنك: فوق سن 18 عاما ، يمكنك قراءة والتحدث باللغة العربية ، حامل أو أنجبت (سبعة أيام بعد الولادة إلى 12 شهرا بعد الولادة). لم يكن لديك أي مضاعفات (ولادة جنين ميت أو ولادة مبكرة أو طفل مريض). أو إذا كنت لا تستطيع قراءة اللغة العربية أو التحدث بها ، فلا يمكنك الاستشهاد بها في هذه الدراسة.
مشاركتك في هذه الدراسة طوعية تماما. لن تتأثر حقوقك أو علاجك إذا لم تشارك ، وأنت حر في مغادرة الدراسة في أي وقت دون تفسير أو عواقب سلبية.

قبل الاجتماع ، سيطلب منك ملء استبيان قصير عن نفسك سيتم إرساله إليك. بعد ذلك سننظم وقتا وتاريخا للاجتماع ، ولن يستمر الاجتماع أكثر من 60 دقيقة. بعد المقابلة ، سيطلب منك ملء بعض الاستبيانات حول مشاعرك وعواطفك.
بعد المقابلة ، ستتاح لك الفرصة لطرح أي أسئلة لم تتم الإجابة عليها بالفعل فيما يتعلق بالدراسة.

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سيتم تسجيل صوتي.

ستتاح لك الفرصة لمراجعة المعلومات التي تم إنشاؤها عنك قبل النشر.

(4) كم من وقتي ستستغرق الدراسة؟

قبل الاجتماع ، سيطلب منك ملء استبيان قصير عن نفسك سيتم إرساله إليك. بعد ذلك سننظم وقتا وتاريخا للاجتماع ، ولن يستمر الاجتماع أكثر من 60 دقيقة. بعد المقابلة ، سيطلب منك ملء بعض الاستبيانات حول مشاعرك وعواطفك.
بعد المقابلة ، ستتاح لك الفرصة لطرح أي أسئلة لم تتم الإجابة عليها بالفعل فيما يتعلق بالدراسة.

(5) هل يجب أن أكون في الدراسة؟ هل يمكنني الانسحاب من الدراسة بمجرد أن أبدأ؟

التواجد في هذه الدراسة طوعي تماما وليس عليك المشاركة.
لن يؤثر قرارك بشأن المشاركة على علاقتك الحالية أو المستقبلية مع الباحثين أو أي شخص آخر في جامعة إيست أنجليا الآن أو في المستقبل.

إذا قررت المشاركة في الدراسة، يمكنك سحب موافقتك في أي وقت. يمكنك القيام بذلك من خلال أنت حر في مغادرة الدراسة في أي وقت دون تفسير أو عواقب سلبية.

(6) ما هي العواقب المترتبة على انسحابي من الدراسة؟

أنت حر في إيقاف المقابلة في أي وقت. ما لم تقل أنك تريد منا الاحتفاظ بها ، سيتم مسح أي تسجيلات ولن يتم تضمين المعلومات التي قدمتها في نتائج الدراسة. يمكنك أيضا رفض الإجابة على أي أسئلة لا ترغب في الإجابة عليها أثناء المقابلة. إذا قررت في وقت لاحق الانسحاب من الدراسة ، إزالة معلوماتك من سجلاتنا ولن يتم تضمينها في أي نتائج ، حتى النقطة التي نشرنا فيها النتائج.

(7) هل هناك أي مخاطر أو تكاليف مرتبطة بالتواجد في الدراسة؟

بصرف النظر عن التخلي عن وقتك ، لا نتوقع أن تكون هناك أي مخاطر أو تكاليف مرتبطة بالمشاركة في هذه الدراسة.

(8) هل هناك أي فوائد مرتبطة بالتواجد في الدراسة؟

لا توجد فوائد مباشرة في المشاركة. ومع ذلك ، فإن النتائج التي تقدمها ستساعدنا على الحصول على فهم أفضل لمستوى وعي ومعرفة النساء بمشاكل الصحة العقلية التي قد تؤثر على النساء الحوامل والأمهات الجدد. وهذا بدوره سيساعد على تحديد ما هو مطلوب لتعزيز وزيادة الوعي أثناء الحمل وفترة ما بعد الولادة لدعم المرأة بشكل فعال في مجال الصحة العقلية.
أعطى تصميم هذه الدراسة الأولوية لرعايتك ورفاهيتك. من المتوقع أن تكون الآثار الضارة طفيفة ، ومن غير المرجح أن تؤدي هذه الدراسة إلى أي آثار جانبية جسدية أو نفسية أو مخاطر أو مخاطر. ومع ذلك ، إذا واجهت أثناء المناقشة أي إزعاج عاطفي أو ترغب في الانسحاب في أي وقت أثناء الاجتماع ، فيرجى إخطار الباحث على الفور ، وسيتم إيقاف الدراسة. هناك أيضا تفاصيل الاتصال بشبكات الدعم المختلفة المقدمة في نهاية هذه الوثيقة إذا كنت بحاجة إلى أي مشورة أو معلومات أخرى حول الصحة العقلية أثناء الحمل أو في فترة ما بعد الولادة.

(9) ماذا سيحدث للمعلومات المقدمة من قبلي والبيانات التي تم جمعها أثناء الدراسة؟

لضمان سرية بياناتك الشخصية ، سيتم الحفاظ على خصوصية هويتك من قبل الطالب الباحث ولن يحتوي أي تقرير دراسي على اسمك الحقيقي أو هويتك ، وسيتم استخدام اسم مستعار / رمز بدلا من ذلك. في الاجتماع ، لا يتعين عليك استخدام اسمك الحقيقي إذا كنت تفضل ذلك ، ولكن سيطلب من جميع المشاركين في الاجتماعات الحفاظ على سرية المناقشات.
سيتم تخزين الملفات الصوتية على محرك أقراص جامعي آمن وسيتم الاحتفاظ بأي بيانات مشارك محوسبة في مجلد محمي بكلمة مرور متاح فقط لفريق البحث وسيتم تحديده فقط بواسطة رقم مشارك. سيتم الاحتفاظ بنسخ مطبوعة من المعلومات في خزانة ملفات مقفلة ، ولا يمكن الوصول إليها إلا من قبل فريق البحث

سيتم استخدام بياناتك ومعلوماتك الشخصية فقط كما هو موضح في ورقة معلومات المشارك هذه ، ما لم توافق على خلاف ذلك. ستتبع إدارة البيانات قانون حماية البيانات لعام 2018 (DPA 2018) واللائحة العامة لحماية البيانات في المملكة المتحدة (UK GDPR) ، وسياسة إدارة بيانات الأبحاث بجامعة إيست أنجليا.

سيتم تخزين المعلومات التي تقدمها بشكل آمن وسيتم الاحتفاظ بهويتك بسرية تامة ، باستثناء ما يقتضيه القانون. قد يتم نشر نتائج الدراسة ، ولكن لن يتم تحديد هويتك في هذه المنشورات إذا قررت المشاركة في هذه الدراسة.

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ويمكن أيضا إيداع بيانات الدراسة في مستودع للسماح بإتاحتها للأغراض العلمية والتعليمية. سيتم الاحتفاظ بالبيانات لمدة 10 سنوات على الأقل بعد آخر تاريخ تم فيه الوصول إلى البيانات. لن تتضمن البيانات المودعة اسمك أو أي معلومات تعريفية عنك.

(10) ماذا لو كنت أرغب في الحصول على مزيد من المعلومات حول الدراسة؟
عندما تقرأ هذه المعلومات ، ستكون السيدة آثار الشمري (athar.alshammari@uea.ac.uk ، 0506067581) متاحة لمناقشة الأمر معك بشكل أكبر والإجابة على أي أسئلة قد تكون لديكم.

(11) هل سيتم إبلاغي بنتائج الدراسة؟
لا يمكنك تلقي ملاحظات حول النتائج الإجمالية.

(12) ماذا لو كان لدي شكوى أو أي مخاوف بشأن الدراسة؟
إذا كانت هناك مشكلة يرجى إعلامي. أو يمكنك الاتصال على العنوان التالي:

السيد **توبي سميث**
كلية العلوم الصحية
جامعة إيست أنجليا
نورويتش NR4 7TJ
toby.smith@uea.ac.uk
إذا كنت قلقا بشأن الطريقة التي يتم بها إجراء هذه الدراسة أو كنت ترغب في تقديم شكوى إلى شخص مستقل عن الدراسة ، فيرجى الاتصال بالأستاذ المشارك في العلاج الطبيعي في كلية العلوم الصحية توبي سميث عبر البريد الإلكتروني toby.smith@uea.ac.uk.

(13) كيف أعرف أن هذه الدراسة قد تمت الموافقة على إجرائها؟
لحماية سلامتك وحقوقك ورفاهيتك وكرامتك ، تتم مراجعة جميع الأبحاث في University of East Anglia من قبل هيئة أخلاقيات البحث. تمت الموافقة على هذا البحث من قبل FMH S-REC (اللجنة الفرعية لأخلاقيات البحوث في كلية الطب والعلوم الصحية).

(14) ما هي معلومات حماية البيانات العامة التي أحتاج إلى إبلاغي بها؟
وفقا لتشريعات حماية البيانات ، يتعين علينا إبلاغك بأن الأساس القانوني لمعالجة بياناتك كما هو مدرج في المادة 6 (1) من اللائحة العامة لحماية البيانات في المملكة المتحدة هو أن هذا يسمح لنا بمعالجة البيانات الشخصية عندما يكون ذلك ضروريا لأداء مهامنا العامة كجامعة.
بالإضافة إلى المعلومات المحددة المقدمة أعلاه حول سبب الحاجة إلى بياناتك الشخصية وكيفية استخدامها ، هناك أيضا بعض المعلومات العامة التي يجب توفيرها لك:

- وحدة التحكم في البيانات هي جامعة إيست أنجليا.
- لمزيد من المعلومات، يمكنك الاتصال بمسؤول حماية البيانات في الجامعة على dataprotection@uea.ac.uk
- يمكنك أيضا معرفة المزيد عن حقوق حماية البيانات الخاصة بك في مكتب مفوض المعلومات (ICO).
- إذا كنت غير راض عن كيفية استخدام بياناتك الشخصية ، فيرجى الاتصال بمسؤول حماية البيانات في الجامعة على dataprotection@uea.ac.uk في المقام الأول.

(15) حسنا ، أريد المشاركة - ماذا أفعل بعد ذلك؟
تحتاج إلى ملء نسخة واحدة من نموذج الموافقة وبعد الموافقة سنبدأ المقابلة يرجى الاحتفاظ بالرسالة وورقة المعلومات والنسخة الثانية من نموذج الموافقة لمعلوماتك.

(16) مزيد من المعلومات
آخر تحديث لهذه المعلومات في 11 مايو 2022.
إذا كانت هناك تغييرات على المعلومات المقدمة ، إعلامك عن طريق البريد الإلكتروني ورقم الهاتف

ورقة المعلومات هذه مخصصة لك للاحتفاظ بها

Participant Information Sheet for HCPs

Ms Athar Alshammari
investigator

11 May 2022

Faculty of Medicine & Health Sciences
School of Health Sciences

University of East Anglia
Norwich Research Park
Norwich NR4 7TJ
United Kingdom

Email: athar.alshammari@uea.ac.uk
Tel: 0506067581
Web: www.uea.ac.uk

Women's Awareness and Knowledge of Mental health Issues during Pregnancy and the Postpartum Period in Hail City, Kingdom of Saudi Arabia

PARTICIPANT INFORMATION SHEET FOR HEALTHCARE PROFESSIONALS (INTERVIEW)

(1) What is this study about?

You are invited to take part in a research study about Women's Awareness and Knowledge of Mental health Issues during Pregnancy and the Postpartum Period in Hail City, Kingdom of Saudi Arabia You have been invited to participate in this study because examine the level of awareness of mental health problems that healthcare professionals have. The study will also explore how can we rise the awareness in mental health problems in pregnancy and postpartum period. This Participant Information Sheet tells you about the research study. Knowing what is involved will help you decide if you want to take part in the study. Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

Participation in this research study is voluntary. By giving consent to take part in this study you are telling us that you:

- ✓ Understand what you have read.
- ✓ Agree to take part in the research study as outlined below.
- ✓ Agree to the use of your personal information as described.
- ✓ You have received a copy of this Participant Information Sheet to keep.

(2) Who is running the study?

The study is being carried out by the following researcher(s): Ms Athar Alshammari.athar.alshammari@uea.ac.uk, telephone: 050606758.
This will take place under the supervision of Prof Kenda Crozier K.Crozier@uea.ac.uk , or Dr Meghana Kamble M.Kamble@uea.ac.uk.

(3) What will the study involve for me?

Thank you for participating in this research project. This interview aims to assess to assess health care providers knowledge and awareness of mental health problems in antenatal and postnatal period in Hail, KSA. Before the meeting you will be asked to fill a short questionnaire about yourself which will sent to you. After that we will organise a time and date to meet, the meeting will last no more than 60 minuets.
Following interview, you will have the opportunity to ask any questions that have not already been answered regarding the study.

An audio recording will be taken.

You will have the opportunity to review information generated about you prior to publication.

-

(4) How much of my time will the study take?

This survey aims to assess to assess health care providers knowledge and awareness of mental health problems in antenatal and postnatal period in Hail, KSA. This interview will take no more than 60 minutes. All the given information will be kept as anonymous and confidential, and it will be used only for the study purposes

(5) Do I have to be in the study? Can I withdraw from the study once I have started?

Being in this study is completely voluntary and you do not have to take part.

Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at the University of East Anglia now or in the future.

If you decide to take part in the study, you can withdraw your consent at any point. You can do this by your participation in this study is entirely voluntary. Your are free to leave the study at any time without explanation or negative consequences

(6) What are the consequences if I withdraw from the study?

If you decide to take part in the study and then change your mind, you are free to withdraw at any time and your data will not be included in any publications, up to ONE MONTH after the interview finished.

(7) Are there any risks or costs associated with being in the study?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

(8) Are there any benefits associated with being in the study?

There are no direct benefits in taking part. However, the results that you provide will help us to have a better understanding of the level of awareness and knowledge of HCP about mental health problems that might affect pregnant women and new mothers. This in turn will help to identify what is needed to promote and raise the awareness in pregnancy and the postpartum period to effectively support women's in mental health.

There are no direct benefits in taking part. However, the results that you provide will help us to have a better understanding of the level of awareness and knowledge of HCP about mental health problems that might affect pregnant women and new mothers. This in turn will help to identify what is needed to promote and raise the awareness in pregnancy and the postpartum period to effectively support women's in mental health.

(9) What will happen to information provided by me and data collected during the study?

To ensure confidentiality of your personal data, your identity will be kept private by the student researcher and any study report will not contain your true name or identity, and that a pseudonym/code will be used instead. In the meeting you do not have to use your real name if you prefer but all participants of meetings will be asked to keep the discussions confidential.

Audio files will be stored on a secure university drive and any computerized participant data will be kept in a password-protected folder available only to the research team and will be identified solely by a participant number. Hard copies of information will be kept in a locked filing cabinet, only accessible to the research team.

Your personal data and information will only be used as outlined in this Participant Information Sheet, unless you consent otherwise. Data Protection Act 2018 (DPA 2018) and UK General Data Protection Regulation (UK GDPR), and the University of East Anglia's Research Data Management Policy.

The information you provide will be stored securely and your identity will be kept strictly confidential, except as required by law. Study findings may be published, but you will not be identified in these publications if you decide to participate in this study.
Study data may also be deposited with a repository to allow it to be made available for scholarly and educational purposes. The data will be kept for at least 10 years beyond the last date the data were accessed. The deposited data will not include your name or any identifiable information about you.

(10) What if I would like further information about the study?
When you have read this information, Ms Athar Alshammari (athar.alshammari@uea.ac.uk, 0506067581) will be available to discuss it with you further and answer any questions you may have.

(11) Will I be told the results of the study?
You are not able to receive feedback about the overall results.

(12) What if I have a complaint or any concerns about the study?
If there is a problem please let me know. Or You can contact the following address:

Mr Toby Smith
School of Health Sciences
University of East Anglia
NORWICH NR4 7TJ
toby.smith@uea.ac.uk

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the Associate Professor in Physiotherapy in School of Health Sciences Toby Smith via email; toby.smith@uea.ac.uk.

(13) How do I know that this study has been approved to take place?
To protect your safety, rights, wellbeing and dignity, all research in the University of East Anglia is reviewed by a Research Ethics Body. This research was approved by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee).

(14) What is the general data protection information I need to be informed about?
According to data protection legislation, we are required to inform you that the legal basis for processing your data as listed in Article 6(1) of the UK GDPR is because this allows us to process personal data when it is necessary to perform our public tasks as a University.

In addition to the specific information provided above about why your personal data is required and how it will be used, there is also some general information which needs to be provided for you:

- The data controller is the University of East Anglia.
- For further information, you can contact the University's Data Protection Officer at dataprotection@uea.ac.uk
- You can also find out more about your data protection rights at the Information Commissioner's Office (ICO).

- If you are unhappy with how your personal data has been used, please contact the University's Data Protection Officer at dataprotection@uea.ac.uk in the first instance.

(15) OK, I want to take part – what do I do next?
You need to fill in one copy of the consent form and after that will start the survey Please keep the letter, information sheet and the second copy of the consent form for your information.

(16) Further information
This information was last updated on 11 May 2022.

If there are changes to the information provided, you will be notified by email, telephone

This information sheet is for you to keep

ETH2122-1494
PIS for healthcare professionals (interview) (Version 2- 11/05/2022)

Participant Information Sheet for HCPs (Arabic Version)

السيدة آثار الشمري
باحث

11 مايو 2022

كلية الطب والعلوم الصحية
كلية العلوم الصحية

جامعة إيست أنجليا
حديقة نورويتش للأبحاث
نورويتش NR4 7TJ
المملكة المتحدة

البريد الإلكتروني: athar.alshammari@uea.ac.uk
الهاتف: 0506067581
الويب: www.uea.ac.uk

وعي المرأة ومعرفتها بقضايا الصحة النفسية أثناء الحمل وفترة ما بعد الولادة في مدينة حائل، المملكة العربية السعودية

ورقة معلومات المشاركين لأخصائيي الرعاية الصحية (مقابلة)

(1) ما هي هذه الدراسة؟
أنت مدعو للمشاركة في دراسة بحثية حول وعي المرأة ومعرفتها بقضايا الصحة النفسية أثناء الحمل وفترة ما بعد الولادة في مدينة حائل ، المملكة العربية السعودية لقد تمت دعوتك للمشاركة في هذه الدراسة لأنها تفحص مستوى الوعي بمشاكل الصحة العقلية التي يعاني منها أخصائيي الرعاية الصحية. وستستكشف الدراسة أيضا كيف يمكننا زيادة الوعي بمشاكل الصحة العقلية أثناء الحمل وفترة ما بعد الولادة. تخبرك ورقة معلومات المشاركين هذه عن الدراسة البحثية. ستساعدك معرفة ما ينطوي عليه الأمر على تحديد ما إذا كنت ترغب في المشاركة في الدراسة. يرجى قراءة هذه الورقة بعناية وطرح أسئلة حول أي شيء لا تفهمه أو تريد معرفة المزيد عنه.

المشاركة في هذه الدراسة البحثية طوعية. من خلال إعطاء الموافقة على المشاركة في هذه الدراسة ، فإنك تخبرنا بأنك:

- ✓ افهم ما قرأته.
- ✓ الموافقة على المشاركة في الدراسة البحثية على النحو المبين أدناه.
- ✓ الموافقة على استخدام معلوماتك الشخصية على النحو الموضح.
- ✓ لقد تلقيت نسخة من ورقة معلومات المشارك هذه للاحتفاظ بها.

(2) من هو الذي يدير الدراسة؟
ويقوم بإجراء الدراسة الباحث (الباحثون) التاليون: *السيدة آثار الشمري*، athar.alshammari@uea.ac.uk، الهاتف: 050606758.
سيتم ذلك تحت إشراف البروفيسور كيندا كروزييه K.Crozier@uea.ac.uk ، *أو الدكتورة ميغانا كامبل* M.Kamble@uea.ac.uk.

(3) ما الذي ستتضمنه الدراسة بالنسبة لي؟
شكرا لك على المشاركة في هذا المشروع البحثي. تهدف هذه المقابلة إلى تقييم معرفة مقدمي الرعاية الصحية ووعيهم بمشاكل الصحة العقلية في فترة ما قبل الولادة وبعدها في حائل، المملكة العربية السعودية. قبل الاجتماع ، سيطلب منك ملء استبيان قصير عن نفسك سيتم إرساله إليك. بعد ذلك سننظم وقتا وتاريخا للاجتماع ، ولن يستمر الاجتماع أكثر من 60 دقيقة.
بعد المقابلة ، ستتاح لك الفرصة لطرح أي أسئلة لم تتم الإجابة عليها بالفعل فيما يتعلق بالدراسة.

سيتم تسجيل صوتي.

ستتاح لك الفرصة لمراجعة المعلومات التي تم إنشاؤها عنك قبل النشر.

.

(4) كم من وقتي ستستغرق الدراسة؟
يهدف هذا المسح إلى تقييم معرفة مقدمي الرعاية الصحية ووعيهم بمشاكل الصحة العقلية في فترة ما قبل الولادة وبعدها في حائل، المملكة العربية السعودية. لن تستغرق هذه المقابلة أكثر من 60 دقيقة. سيتم الاحتفاظ بجميع المعلومات المقدمة على أنها مجهولة المصدر وسرية ، وسيتم استخدامها فقط لأغراض الدراسة

(5) هل يجب أن أكون في الدراسة؟ هل يمكنني الانسحاب من الدراسة بمجرد أن أبدأ؟
التواجد في هذه الدراسة طوعي تماما وليس عليك المشاركة.

لن يؤثر قرارك بشأن المشاركة على علاقتك الحالية أو المستقبلية مع الباحثين أو أي شخص آخر في جامعة إيست أنجليا الآن أو في المستقبل.

إذا قررت المشاركة في الدراسة، يمكنك سحب موافقتك في أي وقت. يمكنك القيام بذلك من خلال مشاركتك في هذه الدراسة طوعية تماما. أنت حر في ترك الدراسة في أي وقت دون تفسير أو عواقب سلبية

(6) ما هي العواقب المترتبة على انسحابي من الدراسة؟
إذا قررت المشاركة في الدراسة ثم غيرت رأيك ، فأنت حر في الانسحاب في أي وقت ولن يتم تضمين بياناتك في أي منشورات ، حتى النقطة التي نشرنا فيها النتائج.

(7) هل هناك أي مخاطر أو تكاليف مرتبطة بالتواجد في الدراسة؟
بصرف النظر عن التخلي عن وقتك ، لا نتوقع أن تكون هناك أي مخاطر أو تكاليف مرتبطة بالمشاركة في هذه الدراسة.

(8) هل هناك أي فوائد مرتبطة بالتواجد في الدراسة؟
لا توجد فوائد مباشرة في المشاركة. ومع ذلك ، فإن النتائج التي تقدمها ستساعدنا على الحصول على فهم أفضل لمستوى الوعي والمعرفة لدى HCP حول مشاكل الصحة العقلية التي قد تؤثر على النساء الحوامل والأمهات الجدد. وهذا بدوره سيساعد على تحديد ما هو مطلوب لتعزيز وزيادة الوعي أثناء الحمل وفترة ما بعد الولادة لدعم المرأة بشكل فعال في مجال الصحة العقلية.
لا توجد فوائد مباشرة في المشاركة. ومع ذلك ، فإن النتائج التي تقدمها ستساعدنا على الحصول على فهم أفضل لمستوى الوعي والمعرفة لدى HCP حول مشاكل الصحة العقلية التي قد تؤثر على النساء الحوامل والأمهات الجدد. وهذا بدوره سيساعد على تحديد ما هو مطلوب لتعزيز وزيادة الوعي أثناء الحمل وفترة ما بعد الولادة لدعم المرأة بشكل فعال في مجال الصحة العقلية.

(9) ماذا سيحدث للمعلومات المقدمة من قبلي والبيانات التي تم جمعها أثناء الدراسة؟
لضمان سرية بياناتك الشخصية ، سيتم الحفاظ على خصوصية هويتك من قبل الطالب الباحث ولن يحتوي أي تقرير دراسي على اسمك الحقيقي أو هويتك ، وسيتم استخدام اسم مستعار / رمز بدلا من ذلك. في الاجتماع ، لا يتعين عليك استخدام اسمك الحقيقي إذا كنت تفضل ذلك ، ولكن سيطلب من جميع المشاركين في الاجتماعات الحفاظ على سرية المناقشات.
سيتم تخزين الملفات الصوتية على محرك أقراص جامعي آمن وسيتم الاحتفاظ بأي بيانات مشارك محوسبة في مجلد محمي بكلمة مرور متاح فقط لفريق البحث وسيتم تحديده فقط بواسطة رقم مشارك. سيتم الاحتفاظ بنسخ مطبوعة من المعلومات في خزانة ملفات مقفلة ، لا يمكن الوصول إليها إلا من قبل فريق البحث.

سيتم استخدام بياناتك ومعلوماتك الشخصية فقط كما هو موضح في ورقة معلومات المشارك هذه ، ما لم توافق على خلاف ذلك. قانون حماية البيانات لعام 2018 (DPA 2018) واللائحة العامة لحماية البيانات في المملكة المتحدة (UK GDPR) ، وسياسة إدارة بيانات الأبحاث بجامعة إيست أنجليا.

سيتم تخزين المعلومات التي تقدمها بشكل آمن وسيتم الاحتفاظ بهويتك بسرية تامة ، باستثناء ما يقتضيه القانون. قد يتم نشر نتائج الدراسة ، ولكن لن يتم تحديد هويتك في هذه المنشورات إذا قررت المشاركة في هذه الدراسة.
ويمكن أيضا إيداع بيانات الدراسة في مستودع للسماح بإتاحتها للأغراض العلمية والتعليمية. سيتم الاحتفاظ بالبيانات لمدة 10 سنوات على الأقل بعد آخر تاريخ تم فيه الوصول إلى البيانات. لن تتضمن البيانات المودعة اسمك أو أي معلومات تعريفية عنك.

(10) ماذا لو كنت أرغب في الحصول على مزيد من المعلومات حول الدراسة؟
عندما تقرأ هذه المعلومات، ستكون السيدة آثار الشمري (athar.alshammari@uea.ac.uk، 0506067581) متاحة لمناقشة هذه المعلومات معك بشكل أكبر والإجابة على أي أسئلة قد تكون لديكم.

(11) هل سيتم إبلاغي بنتائج الدراسة؟
لا يمكنك تلقي ملاحظات حول النتائج الإجمالية.

(12) ماذا لو كان لدي شكوى أو أي مخاوف بشأن الدراسة؟
إذا كانت هناك مشكلة يرجى إعلامي. أو يمكنك الاتصال على العنوان التالي:

السيد **تويبي سميث**
كلية العلوم الصحية
جامعة إيست أنجليا
نورويتش NR4 7TJ

ETH2122-1494

PIS لأخصائيي الرعاية الصحية (مقابلة) (الإصدار 2- 2022/05/11)

toby.smith@uea.ac.uk

إذا كنت قلقا بشأن الطريقة التي يتم بها إجراء هذه الدراسة أو كنت ترغب في تقديم شكوى إلى شخص مستقل عن الدراسة ، فيرجى الاتصال بالأستاذ المشارك في العلاج الطبيعي في كلية العلوم الصحية توبي سميث عبر البريد الإلكتروني ؛ toby.smith@uea.ac.uk.

(13) كيف أعرف أن هذه الدراسة قد تمت الموافقة على إجرائها؟
لحماية سلامتك وحقوقك ورفاهيتك وكرامتك ، تتم مراجعة جميع الأبحاث في University of East Anglia من قبل هيئة أخلاقيات البحث. تمت الموافقة على هذا البحث من قبل FMH S-REC (اللجنة الفرعية لأخلاقيات البحوث في كلية الطب والعلوم الصحية).

(14) ما هي معلومات حماية البيانات العامة التي أحتاج إلى إبلاغي بها؟
وفقا لتشريعات حماية البيانات ، يتعين علينا إبلاغك بأن الأساس القانوني لمعالجة بياناتك كما هو مدرج في المادة 6 (1) من اللائحة العامة لحماية البيانات في المملكة المتحدة هو أن هذا يسمح لنا بمعالجة البيانات الشخصية عندما يكون ذلك ضروريا لأداء مهامنا العامة كجامعة.

بالإضافة إلى المعلومات المحددة المقدمة أعلاه حول سبب الحاجة إلى بياناتك الشخصية وكيفية استخدامها ، هناك أيضا بعض المعلومات العامة التي يجب توفيرها لك:

- وحدة التحكم في البيانات هي جامعة إيست أنجليا.
- لمزيد من المعلومات، يمكنك الاتصال بمسؤول حماية البيانات في الجامعة على dataprotection@uea.ac.uk
- يمكنك أيضا معرفة المزيد عن حقوق حماية البيانات الخاصة بك في مكتب مفوض المعلومات (ICO).
- إذا كنت غير راض عن كيفية استخدام بياناتك الشخصية ، فيرجى الاتصال بمسؤول حماية البيانات في الجامعة على dataprotection@uea.ac.uk في المقام الأول.

(15) حسنا ، أريد المشاركة - ماذا أفعل بعد ذلك؟
تحتاج إلى ملء نسخة واحدة من نموذج الموافقة وبعد ذلك ستبدأ الدراسة الاستقصائية يرجى الاحتفاظ بالرسالة وورقة المعلومات والنسخة الثانية من نموذج الموافقة لمعلوماتك.

(16) مزيد من المعلومات
آخر تحديث لهذه المعلومات في 11 مايو 2022.

إذا كانت هناك تغييرات على المعلومات المقدمة ، إعلامك عن طريق البريد الإلكتروني أو الهاتف

ورقة المعلومات هذه مخصصة لك للاحتفاظ بها

ETH2122-1494

PIS لأخصائيي الرعاية الصحية (مقابلة) (الإصدار 2- 2022/05/11)

Appendix F

Consent Form Phase 1

PARTICIPANT CONSENT FORM (First Copy to Researcher)

I, ... [PRINT NAME], am willing to participate in this research study.

In giving my consent I state that:

- I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.
- I have read the Participant Information Sheet, which I may keep, for my records, and have been able to discuss my involvement in the study with the researchers if I wished to do so.
- The researchers have answered any questions that I had about the study and I am happy with the answers.
- I understand that being in this study is completely voluntary and I do not have to take part. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the University of East Anglia now or in the future.
- I understand that I may stop the interview at any time if I do not wish to continue, and that unless I indicate otherwise any recordings will then be erased and the information provided will not be included in the study results. I also understand that I may refuse to answer any questions I don't wish to answer.
- I understand that the results of this study may be published but that any publications will not contain my name or any identifiable information about me.
- I understand that personal information about me that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to. I understand that information about me will only be told to others with my permission, except as required by law.

I consent to:

Completing a questionnaire	YES	☐	NO	☐
Audio-recording	YES	☐	NO	☐

.....
Signature

.....
PRINT name

.....
Date

Consent Form (Arabic Version)

نموذج موافقة المشارك (النسخة الأولى للباحث)

أنا..... [PRINT NAME] ، أنا على استعداد للمشاركة في هذه الدراسة البحثية.

وبإعطاء موافقتي أقول ما يلي:

- أفهم الغرض من الدراسة ، وما سيطلب مني القيام به ، وأي مخاطر / فوائد تنطوي عليها.
- لقد قرأت ورقة معلومات المشاركين ، والتي قد أحتفظ بها ، لسجلاتي ، وتمكنت من مناقشة مشاركتي في الدراسة مع الباحثين إذا كنت أرغب في القيام بذلك.
- لقد أجاب الباحثون على أي أسئلة كانت لدي حول الدراسة وأنا سعيد بالإجابات.
- أفهم أن التواجد في هذه الدراسة طوعي تماما وليس علي المشاركة. قراري بشأن المشاركة في الدراسة لن يؤثر على علاقتي مع الباحثين أو أي شخص آخر في جامعة إيست أنجليا الآن أو في المستقبل.
- أفهم أنه يمكنني إيقاف المقابلة في أي وقت إذا كنت لا أرغب في الاستمرار ، وأنه ما لم أشر إلى خلاف ذلك ، سيتم مسح أي تسجيلات ولن يتم تضمين المعلومات المقدمة في نتائج الدراسة. أفهم أيضا أنني قد أرفض الإجابة على أي أسئلة لا أرغب في الإجابة عليها.
- *أفهم أنه قد يتم نشر نتائج هذه الدراسة ولكن أي منشورات لن تحتوي على اسمي أو أي معلومات تعريفية عني.*
- *أفهم أن المعلومات الشخصية عني التي يتم جمعها على مدار هذا المشروع سيتم تخزينها بشكل آمن ولن يتم استخدامها إلا للأغراض التي وافقت عليها. أفهم أن المعلومات الخاصة بي لن يتم إخبارها إلا للآخرين بإذن مني ، باستثناء ما يقتضيه القانون.*

أوافق على:

إكمال استبيان	**YES ☐**	**NO ☐**
تسجيل صوتي	**YES ☐**	**NO ☐**

.....

توقيع

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طباعة الاسم

.....

تاريخ

Appendix G

Participant Demographic Information - Phase 1

Participant Demographic Information - Women

–interview with women (English)

Thank you for participating in this research project. This interview aims to assess knowledge and awareness of mental health issues during pregnancy and the postnatal period *in Hail, KSA. This interview will take no longer than 60 minutes. All the given information will be kept as anonymous and confidential, and it will be used only for the study purposes.*

Section A: Socio-demographic details

Please fill in the blank or tick (V) whichever is appropriate:

1. Your age ---------- years.

2. Your current marital status:

□ Married □ Divorced □ Widow/ widower

3. Your highest educational level:

□ Not educated □ Primary school □ High school
□University

4. Your work status

□ Working □ Not working

5. Your monthly household income

□ Less than 2000 R.S. □ 2000 – 4999 R.S.

□ 5000 – 9999 R.S. □ greater than 10000 R.S.

6. Number of children you have:

□ None □ 1 □ 2 □ 3

□ 4 □ 5 or more

Women interview (Version 2- 11/05/2022)

7. Spacing between children (years):

□ None □ <2 □ ≥2

8. 10. Do you have a previous history of mental health problems?

□ Yes □ No

9. Do your family have a history of mental health problems?

□ Yes □ No

10. have you been diagnosed before with any mental health problems such as depression or anxiety in prenatal or postnatal period?

□ Yes □ No What is the condition: ----------.

11. Have you ever received mental health education before?

□ Yes □ No (If No, this is the end of the questionnaire).

12. What was the mode of delivery of the health education?

□ Individual face-to-face health education

□ Group health education

□ Online health education

13. What was the duration of the health education?

----------.

14. Who provided the mental health education?

□ Obstetrics & Gynaecology doctor

□ Nurses

Women interview (Version 2- 11/05/2022)

□ Self learning

□ Family/Friends

The End
Thanks for your time

Women interview (Version 2- 11/05/2022)

Participant Demographic Information - HCPs

– For health care professionals (Interview)

Thank you for participating in this research project. This interview aims to assess health care providers knowledge and awareness of mental health problems in antenatal and postnatal period in Hail, KSA. This survey will take no longer than 60 minutes. All the given information will be kept as anonymous and confidential, and it will be used only for the study purposes.

Section A: Socio-demographic details (HCP)

Please fill in the blank or tick (V) whichever is appropriate:

1. Your gender

□ Male □ Female

2. Your nationality

□ Saudi □ Non Saudi

3. Your age:

□ 20-29 □ 30-39. □ 40-49 □ 50-59

□ 60-69 □ 70 and above

4. Your current job:

□ Physician □ Nurse □ Midwife. □ Other please specify: ----------.

5. Your highest educational level:

□ Diploma □ Bachelor □ Masters □ PhD

6. Years of experience (years):

□ ≤5 □ 6-10. □ 11≤

7. 6. Years of experience in antenatal, postnatal clinics (years):

□ ≤1 □ 2-5. □ 6≤

8. Ever heard of pregnancy-related mental health problems:

□ Yes □ No

9. Can you tell me what tools used to assess/ detect mental health issues if you are using a tool?

specify: ----------.

Healthcare professionals survey (Version 2- 11/05/2022)

Appendix H

Semi-Structured Interview Guide - Phase 1

Semi-Structured Interview Guide - Women

2) interview scenario for antenatal women

1) *Warm up*

- *Introduction to the project. Introduction about the researcher*
- Could you introduce yourself…?

2) *Main topic*

- Read the scenario then ask:

> Sara is a married and healthy 30 year-old mother of two children aged 5 and 3 years old. . Sara got married six years ago, and lives with her husband and children. Sara is 29 weeks pregnant with her third child. She has a healthy pregnancy and her baby is developing well.
>
> Since the past month, Sara began to exhibit unusual behaviour. She stopped speaking to anyone at home, feels sad, having sleep disturbances, losing appetite, losing interest in her daily activities and ceasing to care for her children. She stopped going outside the home. The rest of the people in her family, however, were busy with their own lives and seemed indifferent to her condition.
>
> Her husband has noticed that the home is untidy and that Sara is not very interested in talking to him in the evenings. He tells his mother that he thinks something is wrong.

1. Do you think normal to feel like what Sara feeling? Why?
    - Probe: are these signs and symptoms expected in her case?
2. What you think Sara can do about the feelings that she has?
3. Do you think Sara should speak to someone like her family or doctor about how she is feeling? Why/Why not?
    i. Why do you think Sara has not spoken to her family or doctor about her feelings?
4. If you know Sara (your sister or friend) and you notice her situation what you will do for her?
5. What is your advice to Sara in these circumstance that she is facing or going through?
6. Please tell me what services should be offered to Sara or other women in this situation who might be experiencing such feelings during pregnancy or afterbirth?

3) *Wrap up*

- Anything else you would like to add to the discussion which we have not covered.

Pregnant women interview (Version 2- 11/05/2022)

1) interview scenario for postnatal women

1) *Warm up*

- *Introduction to the project. Introduction about the researcher*
- Could you introduce yourself…?

2) *Main topic*

- Read the scenario then ask:

> Fatimah was a 30 year-old mother of three children who had been married for six years. She lives with her husband. She had given birth to her third child two months previously. Her pregnancy and labour had been uneventful. Fatimah did not receive any postnatal care.
>
> For a month after the birth, Fatimah felt normal, but then she began to exhibit unusual behaviour. She stopped speaking to anyone at home, feels sad, having sleep disturbances, losing appetite, losing interest in her daily activities and ceasing to care for her children. She stopped going outside the home. The rest of the people in her family, however, were busy with their own lives and seemed indifferent to her condition.
>
> Her husband has noticed that the home is untidy and that Fatimah is not very interested in talking to him in the evenings. He tells his mother that he thinks something is wrong.

1. Do you think normal to feel like what Fatimah feeling? Why?
    - Probe: are these signs and symptoms expected in her case?
2. What you think Fatimah can do about the feelings that she has?
3. Do you think Fatima should speak to someone like her family or doctor about how she is feeling? Why/Why not?
    i. Why do you think Fatimah has not spoken to her family or doctor about her feelings?
4. If you know Fatimah (your sister or friend) and you notice her situation what you will do for her?
5. What is your advice to Fatimah in these circumstance that she is facing or going through?
6. Please tell me what services should be offered to Fatimah or other women in this situation who might be experiencing such feelings during pregnancy or afterbirth?

3) *Wrap up*

- Anything else you would like to add to the discussion which we have not covered.

Semi-Structured Interview Guide - HCPs

HCP interview questions

Objective 1: to understand views and processes relating to starting a discussion on mental health concerns

Question 1. Tell me about your views on opening up a discussion about mental health concerns with the pregnant/ postnatal woman?(Ransing, et al., 2020)

Probe: Is it part of the initial consultation?

Probe: How do you start this discussion?

Probe: do you ask all women or just women that concerned you?

Probe: how you identify who needs speaking to regarding the issues?

Objective 2: To understand what is done professionally once the concerns around mental health are identified

Question 2: Tell me about how you support a women pregnant/postnatal women who shares information about her mental health difficulties during the consultation

Probe: do you refer them via any onward referral process?

Probe: do you guide them to some support groups?

Objective 3: To understand the existing professional skill/knowledge set

Question 3: Can you tell me what education, skills, or knowledge that professionals such as you have regarding the identification of mental health conditions in antenatal and postnatal women? (Noonan et al., 2018).

Probe: can you tell me more about this?

Objective 4: To understand the perceived level of professional competence to support perinatal or postnatal women with mental health conditions

Question 4: Do you think physicians or nurses in KSA are well equipped to support women with perinatal or postnatal mental health conditions? Why?(Noonan et al., 2018).

Probe/ can you tell me more about this?

Objective 5: To understand about existing institutional policies for onward referrals and support mechanisms

Question 5: Can you tell me about policies or protocols in your organisation for referring women with mental health conditions? (Higgins et al., 2017).

Probe/ how women do access these services?

Probe: What is your thinking on how effective are these policies

Objective 6: To understand the barriers to provision

Question 6; Can you tell me about the barriers to the provision of maternal mental health services? (McCauley et al., 2019).

Probe/ can you tell me more about this?

Appendix I

Local Counselling & Support Services

Further support and advice

The researcher will be sensitive, non-judgmental, and supportive and reassuring throughout the study. The researcher, on the other hand, is unqualified to give professional advice or diagnose or treat any problems that the participants may have. For this reason, a list of relevant local and national agencies that can provide expert advice and assistance has been created.

Ministry Of Health (MOH) provides health care to citizens, free of charge, in its medical facilities, in accordance with the National Transformation Program in the health sector, which works to meet the sector's needs. The Services provided include:

1- The National Committee For Mental Health Promotion (NCMHP)

The Minister of Health, chairs the National Committee for Mental Health Promotion (NCMHP), which aims to promote mental health in the community. It does that by spreading information and raising awareness on mental illnesses, their causes, and the ways to deal with them. It also aims to assist mental patients and their families to obtain curative and rehabilitation services and promotes access to a better life. The Ministry has also supported the Saudi National Survey of Mental Health.

NCMH Telephone: 0118800865 Fax: 0118800864

Psychiatric Consultation Service: 920033360

Fax: 0118800864

Website: www.ncmh.org.sa

Email: info@ncmn.org.sa

Call center for psychiatric consultation The National Committee For Mental Health Promotion (NCMHP))

The National Committee for Mental Health Promotion provides Psychiatric Consultations by phone to support patients and their families in coping with mental health disorders and/or difficulties, under the supervision mental health specialists. The call center operates on a daily 12-hour schedule from 8:00 AM to 8:00 PM (and from 1:00 PM to 8:00 PM on Saturdays).

NCMH Telephone: 0118800865 Fax: 0118800864

Psychiatric Consultation Service: 920033360

Fax: 0118800864

Website: www.ncmh.org.sa

Email: info@ncmn.org.sa

2- «Mawid» Service:

The Central Appointment System «Mawid» is an e-service provided by MOH, to enable patients to book, cancel or reschedule their appointments at primary health care centers, as well as managing their referral appointments.

Phone: 937

Website: https://mawidstf.moh.gov.sa

Apple store: https://www.moh.gov.sa/en/eServices/Pages/cassystem.aspx

Google paly: https://play.google.com/store/apps/details?id=moh.gov.sa.mawid

3- «Seha» App:

It provides innovative and sustainable solutions to enable individuals to receive health and preventive care at their homes and to enjoy a better health services through audio-video medical consultations by MOH's specialists, and through artificial intelligence technologies, which enable you to receive safe medical information and provide you with health tips electronically.t provides medical consultations remotely through video call, SMS, or voice messages.

Website: https://www.seha.sa

Apple store: https://apps.apple.com/sa/app/[illegible]/id1205814003

Google paly: https://play.google.com/store/apps/details?id=com.ubieva.caas.userapp.droid

4- 937-Service :

The Ministry of Health (MOH) is honored and pleased to receive your call and fulfill your health needs on (937) service center 24/7.It provides medical consultations via voice call.

5- Psychological and Mental Counseling (Qareboon)

A service provided by the National Center for Mental Health Promotion, providing psychological and mental counseling supervised by a specialized work staff, through the application of (Qareboon). The application represents an integrated library that contains countless information on mental health with the latest modern means and methods, such as text materials, infographics, and visual content.

Apple store: https://apps.apple.com/sa/app/qrybwn/id687335501

Google paly: https://play.google.com/store/apps/details?id=com.qareeboon

Phone: 011 212 5555 – 937

Mail: 937@moh.gov.sa

Customer Support Hours: 07:30 AM - 02:30 PM

6- Eradah Mental Health Complex Hospital in Hail:

Hospital specialist in mental health and addiction treatment services. It has also outpatient clinics department with its both specialist and consultation clinics operate seven day a week.

Phone: 0165327755

Website: http://www.hailhealth.gov.sa/

Twitter: https://twitter.com/eradah_m_complx?lang=ar

7- Mental health clinic at Maternity and Child Hospital in Hail:

Phone: 0112544885

Twitter: https://twitter.com/mchhail?lang=ar

Non-profit organizations

1- charitable health society for patients care (ENAYAH)

Non-profit organization providing awareness and education for mental health and medical care.

Phone: 920021228 / 0114969060 / 0114915030

Fax: 0114968338

Website: www.enayah.org.sa

Email: info@enayah.org.sa

2- Mawaddah charitable association

Non-profit organization providing family, social, psychological and legal consultations

Phone: 0503771586 / 0114542301 / 920011432

Fax: 0114534662

Website: www.mawaddah.org.sa

Email: info@mawaddah.org.sa

3- Jeddah Support Group (JSG)

a nonprofit self-help group also called peer support group that is dedicated to providing a supportive, understanding, and accepting safe space for others to share their experiences and feelings regarding their struggles with depression or anxiety.

https://www.instagram.com/JeddahSupportGroup/

https://twitter.com/jeddah_sg?lang=en

Local Counselling & Support Services (Arabic Version)

مزيد من الدعم والمشورة

سيكون الباحث حساسا وغير حكمي وداعما ومطمئنا طوال فترة الدراسة. من ناحية أخرى ، فإن الباحث غير مؤهل لتقديم المشورة المهنية أو تشخيص أو علاج أي مشاكل قد يواجهها المشاركون. ولهذا السبب، وضعت قائمة بالوكالات المحلية والوطنية ذات الصلة التي يمكنها تقديم مشورة الخبراء ومساعدتهم.

تقدم وزارة الصحة الرعاية الصحية للمواطنين مجانا في منشآتها الطبية، وفقا لبرنامج التحول الوطني في القطاع الصحي، الذي يعمل على تلبية احتياجات القطاع. تشمل الخدمات المقدمة ما يلي:

1- اللجنة الوطنية لتعزيز الصحة النفسية

وزير الصحة، يرأس اللجنة الوطنية لتعزيز الصحة النفسية (NCMHP)، التي تهدف إلى تعزيز الصحة النفسية في المجتمع. وهي تفعل ذلك من خلال نشر المعلومات وزيادة الوعي حول الأمراض العقلية وأسبابها وطرق التعامل معها. كما يهدف إلى مساعدة المرضى العقليين وأسرهم على الحصول على خدمات العلاج وإعادة التأهيل وتعزيز الوصول إلى حياة أفضل. كما دعمت الوزارة المسح الوطني السعودي للصحة النفسية.

NCMH الهاتف: 0118800865 الفاكس: 0118800864

خدمة الاستشارات النفسية: 920033360

فاكس: 0118800864

الموقع الإلكتروني: www.ncmh.org.sa

البريد الإلكتروني: info@ncmn.org.sa

مركز الاتصال للاستشارات النفسية اللجنة الوطنية لتعزيز الصحة النفسية (NCMHP)

تقدم اللجنة الوطنية لتعزيز الصحة النفسية استشارات نفسية عبر الهاتف لدعم المرضى وأسرهم في التعامل مع اضطرابات و / أو صعوبات الصحة العقلية ، تحت إشراف أخصائيي الصحة النفسية. يعمل مركز الاتصال وفقا لجدول يومي مدته 12 ساعة من الساعة 8:00 صباحا إلى الساعة 8:00 مساء (ومن الساعة 1:00 ظهرا إلى الساعة 8:00 مساء أيام السبت).

NCMH الهاتف: 0118800865 الفاكس: 0118800864

خدمة الاستشارات النفسية: 920033360

فاكس: 0118800864

الموقع الإلكتروني: www.ncmh.org.sa

البريد الإلكتروني: info@ncmn.org.sa

2- خدمة «معين»:

نظام المواعيد المركزي «معين» هو خدمة إلكترونية تقدمها وزارة الصحة، لتمكين المرضى من حجز أو إلغاء أو إعادة جدولة مواعيدهم في مراكز الرعاية الصحية الأولية، وكذلك إدارة مواعيد الإحالة الخاصة بهم.

هاتف: 937

الموقع الإلكتروني: https://mawidstf.moh.gov.sa

متجر أبل: https://www.moh.gov.sa/en/eServices/Pages/cassystem.aspx

جوجل بالي: https://play.google.com/store/apps/details?id=moh.gov.sa.mawid

3- تطبيق «صحة»:

تقدم تكنولوجيا المعلومات حلولا مبتكرة ومستدامة لتمكين الأفراد من تلقي الرعاية الصحية والوقائية في منازلهم والتمتع بخدمات صحية أفضل من خلال الاستشارات الطبية السمعية والبصرية من قبل المتخصصين في وزارة الصحة، ومن خلال تقنيات الذكاء الاصطناعي

التي تمكنك من الحصول على معلومات طبية آمنة وتوفر لك النصائح الصحية إلكترونيا.ع تقدم الاستشارات الطبية عن بعد من خلال مكالمة فيديو، الرسائل القصيرة أو الرسائل الصوتية.

الموقع الإلكتروني: https://www.seha.sa

متجر أبل: https://apps.apple.com/sa/app/صحة/id1205814003

جوجل بالي: https://play.google.com/store/apps/details?id=com.ubieva.caas.userapp.droid

4- 937-الخدمة :

تتشرف وزارة الصحة وتتشرف بتلقي مكالمتك وتلبية احتياجاتك الصحية على مركز خدمة (937) 7/24.ويقدم الاستشارات الطبية عبر مكالمة صوتية.

5- الإرشاد النفسي والعقلي (قريون)

خدمة يقدمها المركز الوطني لتعزيز الصحة النفسية، تقدم الاستشارات النفسية والعقلية تحت إشراف كادر عمل متخصص، من خلال تطبيق (قريون). يمثل التطبيق مكتبة متكاملة تحتوي على معلومات لا حصر لها عن الصحة النفسية بأحدث الوسائل والأساليب الحديثة، مثل المواد النصية والرسوم البيانية والمحتوى المرئي.

متجر أبل: https://apps.apple.com/sa/app/qrybwn/id687335501

جوجل بالي: https://play.google.com/store/apps/details?id=com.qareeboon

الهاتف: 937 – 5555 212 011

البريد: moh.gov.sa@937

ساعات دعم العملاء: 07:30 ص - 02:30 م

6- مستشفى مجمع إرادة للصحة النفسية بحائل:

مستشفى متخصص في خدمات الصحة النفسية وعلاج الإدمان. كما أن لديها قسم العيادات الخارجية مع كل من العيادات المتخصصة والاستشارية التي تعمل سبعة أيام في الأسبوع.

الهاتف: 0165327755

الموقع الإلكتروني: http://www.hailhealth.gov.sa/

تويتر: https://twitter.com/eradah_m_complx?lang=ar

7- عيادة الصحة النفسية بمستشفى الولادة والطفولة بحائل:

الهاتف: 0112544885

تويتر: https://twitter.com/mchhail?lang=ar

المنظمات غير الربحية

1- الجمعية الصحية الخيرية لرعاية المرضى (عناية)

منظمة غير ربحية تقدم التوعية والتعليم للصحة النفسية والرعاية الطبية.

الهاتف: 920021228 / 0114969060 / 0114915030

فاكس: 0114968338

الموقع الإلكتروني: www.enayah.org.sa

البريد الإلكتروني: info@enayah.org.sa

2- جمعية مودة الخيرية

منظمة غير ربحية تقدم الاستشارات الأسرية والاجتماعية والنفسية والقانونية

الهاتف: 920011432 / 0114542301 / 0503771586

فاكس: 0114534662

الموقع الإلكتروني: www.mawaddah.org.sa

البريد الإلكتروني: info@mawaddah.org.sa

3- مجموعة دعم جدة (JSC)

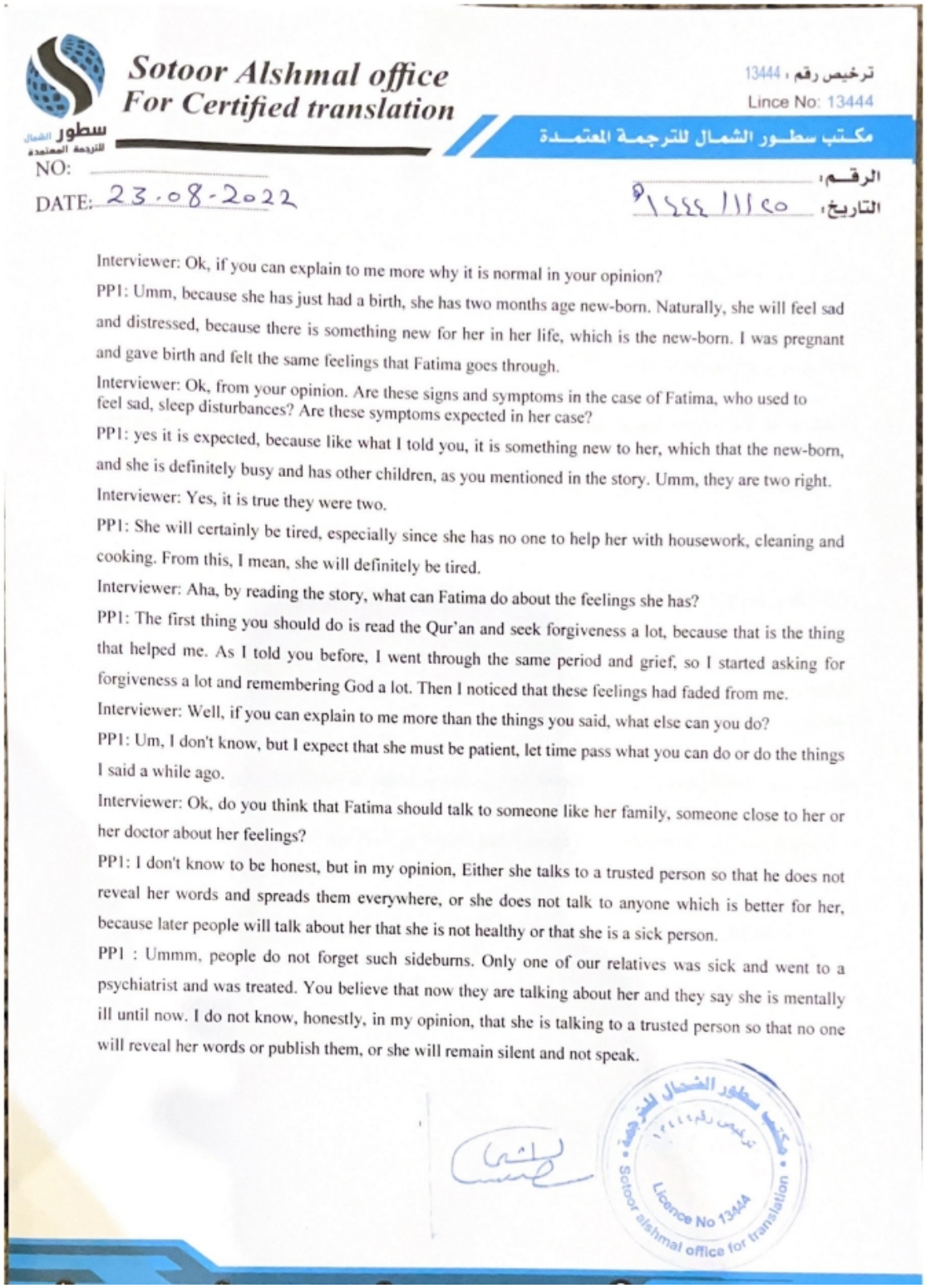
مجموعة مساعدة ذاتية غير ربحية تسمى أيضا مجموعة دعم الأقران المكرسة لتوفير مساحة آمنة داعمة ومتفهمة ومقبولة للآخرين لمشاركة تجاربهم ومشاعرهم فيما يتعلق بصراعاتهم مع الاكتئاب أو القلق.

https://www.instagram.com/JeddahSupportGroup/

https://twitter.com/jeddah_sg?lang=en

Appendix J

Translation Checker



Sotoor Alshmal office
For Certified translation

سطور الشمال للترجمة المعتمدة

ترخيص رقم ، 13444
Lince No: 13444

مكتب سطور الشمال للترجمة المعتمدة

NO:
DATE: 23-08-2022

الرقم:
التاريخ: ١٤٤٤/١١/٥

Interviewer: Ok, if you can explain to me more why it is normal in your opinion?

PP1: Umm, because she has just had a birth, she has two months age new-born. Naturally, she will feel sad and distressed, because there is something new for her in her life, which is the new-born. I was pregnant and gave birth and felt the same feelings that Fatima goes through.

Interviewer: Ok, from your opinion. Are these signs and symptoms in the case of Fatima, who used to feel sad, sleep disturbances? Are these symptoms expected in her case?

PP1: yes it is expected, because like what I told you, it is something new to her, which that the new-born, and she is definitely busy and has other children, as you mentioned in the story. Umm, they are two right.

Interviewer: Yes, it is true they were two.

PP1: She will certainly be tired, especially since she has no one to help her with housework, cleaning and cooking. From this, I mean, she will definitely be tired.

Interviewer: Aha, by reading the story, what can Fatima do about the feelings she has?

PP1: The first thing you should do is read the Qur'an and seek forgiveness a lot, because that is the thing that helped me. As I told you before, I went through the same period and grief, so I started asking for forgiveness a lot and remembering God a lot. Then I noticed that these feelings had faded from me.

Interviewer: Well, if you can explain to me more than the things you said, what else can you do?

PP1: Um, I don't know, but I expect that she must be patient, let time pass what you can do or do the things I said a while ago.

Interviewer: Ok, do you think that Fatima should talk to someone like her family, someone close to her or her doctor about her feelings?

PP1: I don't know to be honest, but in my opinion, Either she talks to a trusted person so that he does not reveal her words and spreads them everywhere, or she does not talk to anyone which is better for her, because later people will talk about her that she is not healthy or that she is a sick person.

PP1 : Ummm, people do not forget such sideburns. Only one of our relatives was sick and went to a psychiatrist and was treated. You believe that now they are talking about her and they say she is mentally ill until now. I do not know, honestly, in my opinion, that she is talking to a trusted person so that no one will reveal her words or publish them, or she will remain silent and not speak.

مكتب سطور الشمال للترجمة • ترخيص رقم ١٣٤٤ • Sotoor alshmal office for translation Licence No 1344

Appendix K

Screening Tools (EPDS & PHQ-9)

NSW GOVERNMENT Health

Facility:

FAMILY NAME | MRN

GIVEN NAME | ☐ MALE ☐ FEMALE

D.O.B._____/_____/_____ | M.O.

ADDRESS

LOCATION

COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE

SMR060460

The Edinburgh Postnatal Depression Scale

Cox JL, Holden JM Sagovsky R (1987) Detection of postnatal depression: development of the 10-item Edinburgh postnatal depression scale. Brit J Psychiatry150 782-86. Reproduced with permission.

As you recently had a baby we would like to know how you are feeling now. Please tick the box of the answer which comes closest to how you have felt IN THE PAST 7 DAYS, not just how you feel today. Here is an example, already completed:

I have felt happy

☐ Yes, all the time
☑ Yes, most of the time
☐ No, not very often
☐ No, not at all

This would mean:"I have felt happy most of the time" during the past week. Complete the other questions in the same way.

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:

☐ Yes, most of the time
☐ Yes, some of the time
☐ Not very often
☐ No, never

4. I have been anxious or worried for no good reason:

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

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

☐ Yes, quite a lot
☐ Yes, sometimes
☐ No, not much
☐ No, not at all

6. Things have been getting on top of me:

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

7. I have been so unhappy that I have had difficulty sleeping:

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

8. I have felt sad or miserable:

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

9. I have been so unhappy that I have been crying:

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

10. The thought of harming myself has occurred to me:

☐ Yes, quite often
☐ Sometimes
☐ Hardly ever
☐ Never

Date Completed: _____ **Total Score:**___/ 30 **Total Score for Question 10:**_____/ 3

Holes Punched as per AS2828.1: 2012

BINDING MARGIN - NO WRITING

NH606528 180313

EDINBURGH DEPRESSION SCALE (ANTENATAL) SMR060.460

NSW GOVERNMENT **Health**

Facility:

The Edinburgh Postnatal Depression Scale

Cox JL, Holden JM Sagovsky R (1987) Detection of postnatal depression: development of the 10-item Edinburgh postnatal depression scale. Brit J Psychiatry150 782-86. Reproduced with permission

FAMILY NAME	MRN
GIVEN NAME	MALE FEMALE
D.O.B: / /	M.O.
ADDRESS:	
LOCATION:	
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE	

ARABIC

EDINBURGH DEPRESSION SCALE (POSTNATAL) SMR060.460

بما أنك أنجبت طفلاً مؤخرًا، نود أن نعرف شعورك الآن. يرجى وضع علامة في خانة الإجابة التي تعبر بشكل أفضل عما شعرت به في الأيام السبعة الماضية، وليس فقط عما تشعرين به اليوم. إليك هذا المثال للتوضيح.

شعرت بأنني سعيدة

- ☐ نعم، في جميع الأوقات
- ☑ نعم، في معظم الأوقات
- ☐ كلا، ليس كثيراً
- ☐ كلا، أبداً

وهذا يعني: "شعرت بأنني سعيدة معظم الوقت خلال الأسبوع الماضي". نرجو منك أن تكملي الأسئلة الأخرى بالطريقة ذاتها.

1. استطعت الشعور بالفرح والسعادة:

- ☐ بالمقدار نفسه الذي استطعته من قبل
- ☐ ليس تماماً بالمقدار نفسه الآن
- ☐ ليس بالمقدار نفسه الآن
- ☐ كلا مطلقاً

2. تطلعت إلى الأمور بتشوّق:

- ☐ بالمقدار نفسه مثل أي وقت مضى
- ☐ أقل نوعاً ما مما اعتدته
- ☐ أقل بكثير مما اعتدته
- ☐ نادراً

3. لمت نفسي بدون لزوم عندما سارت الأمور على غير ما يرام:

- ☐ نعم، في معظم الأحيان
- ☐ نعم، في بعض الأحيان
- ☐ ليس في أحوال كثيرة
- ☐ كلا، أبداً

4. كنت قلقة ومشغولة البال بدون سبب وجيه:

- ☐ كلا، أبداً
- ☐ نادراً
- ☐ نعم، في بعض الأحيان
- ☐ نعم، في كثير من الأحيان

5. شعرت بالخوف والذعر بدون سبب وجيه:

- ☐ نعم، كثيراً في كثير من الأحيان
- ☐ نعم، في بعض الأحيان
- ☐ كلا، ليس كثيراً
- ☐ كلا، مطلقاً

6. تراكمت الأعمال عليّ فلم أستطع القيام بها كلها:

- ☐ نعم، في معظم الأحيان لم أستطع القيام بها أبداً
- ☐ نعم، في بعض الأحيان لم أستطع القيام بها كالمعتاد
- ☐ كلا، لقد استطعت القيام بها في بعض الأحيان
- ☐ كلا، لقد استطعت القيام بها كالمعتاد

7. كنت تعيسة لدرجة أنني واجهت صعوبة في النوم:

- ☐ نعم، في معظم الأحيان
- ☐ نعم، في بعض الأحيان
- ☐ كلا، ليس كثيراً
- ☐ كلا، أبداً

8. شعرت بأنني تعيسة وبائسة:

- ☐ نعم، في معظم الأحيان
- ☐ نعم، في أحيان كثيرة
- ☐ ليس كثيراً
- ☐ كلا، مطلقاً

9. شعرت بالتعاسة لدرجة البكاء:

- ☐ نعم، في معظم الأحيان
- ☐ نعم، في كثير من الأحيان
- ☐ من وقت لآخر فقط
- ☐ كلا، مطلقاً

10. خطرت لي فكرة إلحاق الأذى بنفسي:

- ☐ نعم، في أحيان كثيرة
- ☐ أحياناً
- ☐ نادراً
- ☐ كلا، مطلقاً

Date Completed: _____ **Total Score:**_____/ 30 **Total Score for Question 10:** ___/ 3

Holes Punched as per AS2828.1: 2012
BINDING MARGIN - NO WRITING

NH606528 180313

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

ID #: _____ **DATE:**_____

Over the last *2 weeks,* how often have you been bothered by any of the following problems?
(use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite — being so figety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself	0	1	2	3
		add columns	+	+

(Healthcare professional: For interpretation of TOTAL, please refer to accompanying scoring card). TOTAL:

10. If you checked off *any problems,* how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all _____
- Somewhat difficult _____
- Very difficult _____
- Extremely difficult _____

A2663B 10-04-2005

استبيان صحة المريض – اضطراب الاكتئاب
(PHQ9)

يشكل هذا الاستبيان جزءاً مهما من عملية تقديم أفضل رعاية صحية ممكنة لك، وستساعد إجاباتك في فهم المشكلات التي قد تعاني منها.
الرجاء الإجابة عن كل سؤال بأكبر قدر من الصراحة إلا إذا طُلب منك تخطي السؤال.

الاسم:_____ العمر:_____ الجنس: ☐ ذكر ☐ أنثى تاريخ اليوم:_____

ما مدى تكرار انزعاجك من أي مشكلة من المشكلات التالية خلال الأسبوعين الأخيرين؟	أبداً 0	عدة أيام 1	أكثر من نصف الأيام 2	كل يوم تقريبا 3
أ- قلة الاهتمام أو المتعة عند القيام بالأشياء.	☐	☐	☐	☐
ب- الشعور بالضيقة أو الاكتئاب أو اليأس.	☐	☐	☐	☐
ج- صعوبات في النوم أو في الاستمرار في النوم أو كثرة النوم.	☐	☐	☐	☐
د- الشعور بالتعب أو قلة النشاط.	☐	☐	☐	☐
هـ- قلة الشهية أو شراهة الأكل.	☐	☐	☐	☐
و- الشعور بعدم الرضا عن نفسك أو الشعور بأنك إنسان فاشل أو بأنك خذلت نفسك أو عائلتك.	☐	☐	☐	☐
ز- صعوبات في التركيز على الأشياء كقراءة الجريدة أو مشاهدة التلفاز.	☐	☐	☐	☐
ح- التحرك أو التحدث ببطء شديد لدرجة ملحوظة، أو العكس: التململ وعدم القدرة على الاستقرار لدرجة التحرك من مكان لآخر أكثر من المعتاد.	☐	☐	☐	☐
ط- التفكير بأنه من الأفضل لك الموت أو التفكير بإيذاء نفسك بطريقة ما.	☐	☐	☐	☐

المجموع = ( )

ما مدى الصعوبة التي سببتها لك هذه المشكلة عند أدائك لعملك أو دراستك أو القيام بمسؤولياتك في منزلك أو الانسجام مع الناس؟

لا توجد أي صعوبة أبدًا	صعبة إلى حد ما	صعبة جدًا	صعبة بشكل لا يطاق
☐	☐	☐	☐

AlHadi AN, AlAteeq DA, Al-Sharif E, Bawazeer HM, Alanazi H, AlShomrani AT, et al. An Arabic translation, reliability, and validation of Patient Health Questionnaire in a Saudi sample. Ann Gen Psychiatry. 2017 Sep;16(1):32. Available from: https://doi.org/10.1186/s12991-017-0155-1

Appendix L Recruitment Invitation Letters - Phase 2

Recruitment Invitation Letter for HCPs (Survey)

Letter of invitation

Dear Healthcare professional,

My name is Athar Alshammari. I am a doctoral student at East of Anglia University's Nursing Program. I am kindly requesting your participation in a doctoral research study that I am conducting titled: Women's Awareness and Knowledge of Mental health Issues during Pregnancy and the Postpartum Period in Kingdom of Saudi Arabia. The intention is to assess women's awareness of the mental health issues during pregnancy and the postnatal period. Also, to understand the level of awareness and knowledge of health care providers about mental health issues in pregnancy and postnatal period in Hail, KSA.

The study involves completing basic demographic information and survey.

Participation is completely voluntary and you may withdraw from the study at any time. The study is completely anonymous, therefore, it does not require you to provide your name or any other identifying information.

If you would like to participate in the study please contact me via email, phone, or just use the link below.

Your participation in the research will be of great importance to assist health care workers in better understanding the situation and identifying the gaps that need to be filled in order to provide women with more information and raise their awareness about mental health. Furthermore, this can help clinical practices provide better care by increasing knowledge and awareness of mental health issues that may arise in perinatal women during pregnancy and after childbirth.

Please click on the link to access the survey:

https://forms.office.com/r/ZxkZwAU8AM

Thank you for your time and participation

Sincerely,
Athar Alshammari, RN,MN
athar.alshammari@uea.ac.uk
0506067581

Invitation letter for healthcare professionals (survey) (Version 1- 07/04/2022)

Recruitment Invitation Letter for HCPs (Arabic Version)

Appendix M

Approval for the Use of the Questionnaire by the Author

From: Cindy Jones cjones@bond.edu.au
Subject: Re: Permission to use the survey
Date: 17 Nov 2021 at 11:16:53 AM
To: Athar Alshammari athar-88@hotmail.com, C.Jones@griffith.edu.au

Dear Athar

Permission is granted. Please include appropriate reference when using the scale and in any subsequent publications or presentations. Unfortunately, I am not aware of the scale being translated into other languages.

All the best with your study.

Regards
Cindy

Cindy Jones
Associate Professor of Behavioural Sciences
Health & Society Domain Co-Lead / MD Academic Co-Coordinator
Faculty of Health Sciences & Medicine

Affiliations:
Lead - Collaboration for Research in Understanding Stigma in Healthcare (CRUSH)
Adjunct Research Fellow - Menzies Health Institute Queensland
Team Member - Australian Aged Care Technologies Collaborative (AACTC)

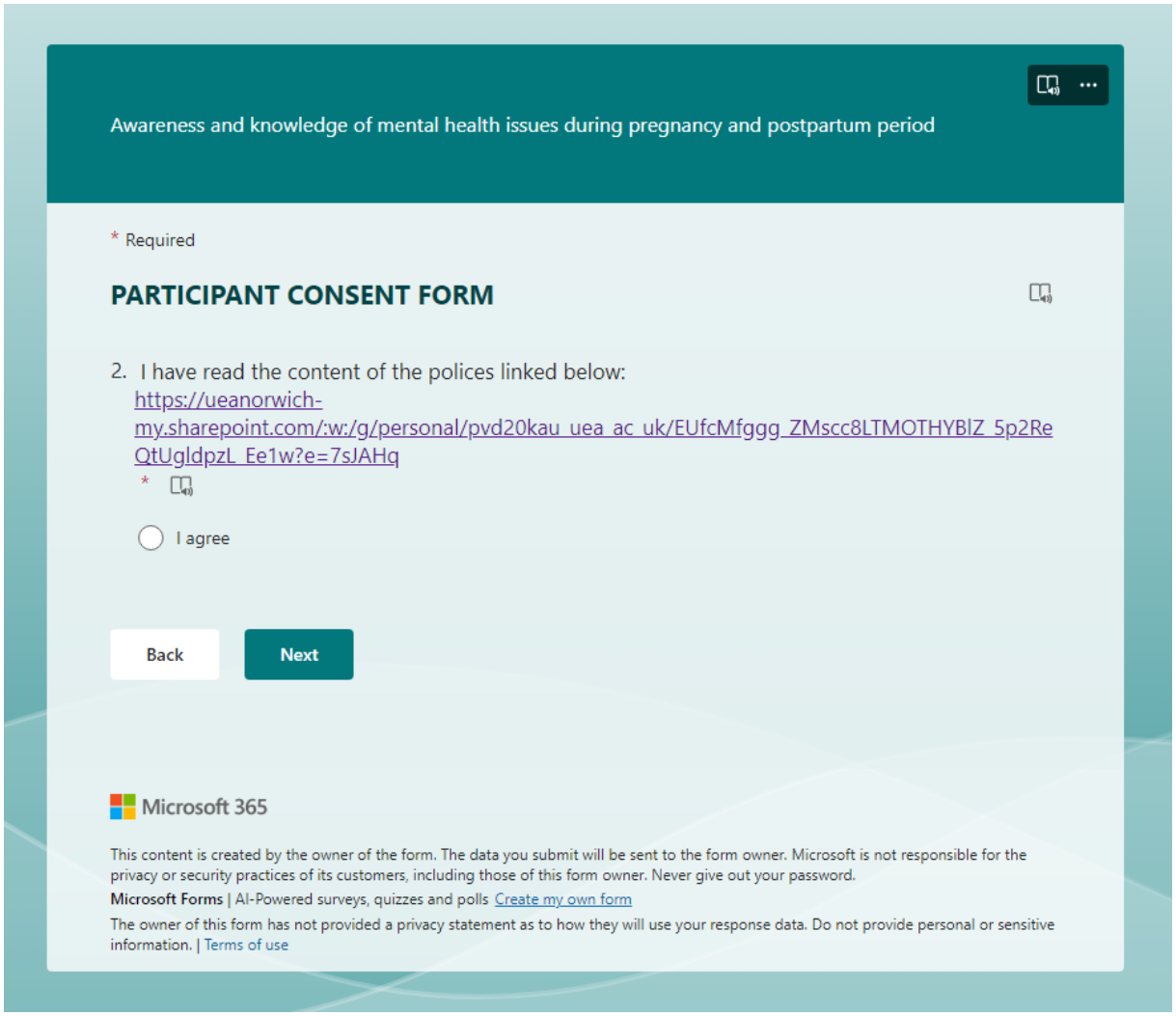
https://orcid.org/0000-0002-7249-2580

BOND UNIVERSITY

Phone: +61 7 5595 1152
Bond University | Gold Coast, Queensland, 4229, Australia
CRICOS Provider Code 00017B

Appendix N

Consent Form for the Survey - Phase 2



Appendix O Survey Questionnaire phase 2

– For health care professionals (survey)

Thank you for participating in this research project. This survey aims to assess to assess health care providers knowledge and awareness of mental health problems in antenatal and postnatal period in Hail, KSA. This survey will take 10-20 minutes. All the given information will be kept as anonymous and confidential, and it will be used only for the study purposes.

Section A: Socio-demographic details (HCP)

Please fill in the blank or tick (√) whichever is appropriate:

1. Your gender

□ Male □ Female

2. Your nationality

□ Saudi □ Non Saudi

3. Your age:

□ 20-29 □ 30-39. □ 40-49 □ 50-59

□ 60-69 □ 70 and above

4. Your current job:

□ Physician □ Nurse □ Midwife. □ Other please specify: ----------.

5. Your highest educational level:

□ Diploma □ Bachelor □ Masters □ PhD

6. Years of experience (years):

□ ≤5 □ 6-10. □ 11≤

7. Work sector:

□ Hospital □ Primary Health Care Centre □ Private

8. Work location:

□ Hail □ Village or Province

9. Have you been worked in antenatal, postnatal or birthing area before:

□ Yes □ No

10. Ever heard of pregnancy-related mental health problems:

□ Yes □ No

Healthcare professionals face to face (Version 2- 11/05/2022)

11. Can you tell me what tools used to assess/ detect mental health issues if you are using a tool?

specify: ----------.

Section B: Survey.

Please select the right answer:

1. Which statement is true?

   a. Psychological morbidity, specifically depression and anxiety, are commonly seen in both the antenatal and postpartum periods.
   b. Psychological morbidity, such as depression and anxiety, is not associated with personality disorder.
   c. Psychological morbidity, such as depression and anxiety, is not associated with drug and alcohol abuse.
   d. It is not essential to screen for, and differentiate between, depression and anxiety comorbidity in pregnant women.

2. The proportion of pregnant women who meet the diagnostic criteria for depression is approximately:

   a. 8-35%
   b. 5-10%
   c. 10-20%
   d. 30-50%

3. Which of the following is associated with depression during pregnancy?

   a. Gestational hypertension
   b. Preeclampsia
   c. Spontaneous abortion
   d. All of the above

4. What is the most common reason for depressed pregnant women not receiving adequate help?

   a. Lack of social support
   b. Lack of support from healthcare providers
   c. Lack of recognition of depression symptoms by healthcare providers
   d. Poor access to treatment for depression

5. The percentage of women suffering depression during pregnancy who subsequently attempt suicide is approximately:

   a. 1%
   b. 10%

Healthcare professionals face to face (Version 2- 11/05/2022)

c. 15%
d. 25%

6. Which of the following is not regarded as a risk factor for antenatal depression?
   a. Low socioeconomic background
   b. Substance and alcohol abuse
   c. History of abuse
   d. Miscarriage in previous pregnancy

7. Which of the following are common treatments for antenatal depression?
   a. Medication and counselling
   b. Self-help groups and counselling
   c. Admission to a psychiatric unit and counselling
   d. Naturotherapy and relaxation
   e.

8. Which of the following is the main symptom of antenatal depression?
   a. Irritability
   b. Attention seeking from families and friends
   c. Feelings of isolation and loneliness
   d. Reliving past experiences and events

9. Which of the following statements is true?
   a. Antenatal depression always continues into the postpartum period.
   b. Women with antenatal depression have a higher chance of developing postpartum depression.
   c. Women who are depressed antenatally do not require specific treat- ment.
   d. Antenatal depression will resolve with the birth of the baby.

10. The proportion of mothers who experience the "baby blues" is approximately:
   a. 1-2%
   b. 10-20%
   c. 20-30%
   d. 30-80%

11. What is the recommended management for the "baby blues"?
   a. Understanding, empathy and support
   b. Baby care assistance
   c. Psychotherapy
   d. Referral to a postpartum disorder support group

12. Which of the following is required for a diagnosis of postpartum depression?
   a. Grandiose future plans
   b. Frequent mood swings
   c. Preoccupation with cleanliness
   d. Persistent low mood for more than 2 months

Healthcare professionals face to face (Version 2- 11/05/2022)

13. Postpartum depression most commonly occurs after the birth:
    a. Within 2-5 days
    b. Within 10-14 days
    c. After 1 month
    d. After 3 months

14. The proportion of mothers who experience postpartum depression is approximately:
    a. 5%
    b. 15%
    c. 30%
    d. 50%

15. What is the recommended treatment for mild postpartum depression?
    a. Understanding and empathy
    b. Education about postpartum depression, supportive counselling, and peer support groups
    c. Psychotherapy and antidepressant medication
    a. Hospitalisation and medication

16. What is the recommended treatment for moderate to severe postpartum depression?
    a. Understanding and empathy
    b. Education about postpartum depression, supportive counselling, and peer support groups
    a. Psychotherapy and antidepressant medication
    b. Hospitalisation and medication

17. Which of the following statements is false about the Edinburgh Postnatal Depression Scale?
    a. It distinguishes well between moderate and severe depression symptoms.
    b. It measures depressive symptoms to give a probable diagnosis of depression.
    c. It fully assesses symptoms of psychotic depression.
    d. It can detect antenatal depressive symptoms.

18. Which of the following statements is true about antidepressant medication?
    a. Mothers may be able to breastfeed while taking antidepressants.
    b. The presence of antidepressants in breast milk has been well-studied.
    c. Antidepressants are habit-forming.
    d. Antidepressant medications are effective immediately.

19. Which of the following is a symptom of postpartum depression?
    a. Annoyance with your partner or other children
    b. Feeling a sense of frustration with present life
    c. Anxious about the baby
    d. All of the above

20. Which of the following statements is correct?

Healthcare professionals face to face (Version 2- 11/05/2022)

Appendix P Codes Comment Example

PP4: Yes, the gynecologist, not just one. **I went to more than one doctor and the same issue I talk to her about it even the Saudi women who are sitting with her** (she means nursing staff) **laugh, ok why are you laughing, I am sick, I mean, either you support me or you shut up.**	**- gynecologists ignore** **- incomprehension** **- unsupportive**
Interviewer: How many times have you visited here in the clinics?	**- unprofessional treatment**
PP4: Four times and all four visits I told them that I was tired, and I tried to understand them, but like that, I mean that they (in a tone of mockery، moving hands). other than the times they laugh at me and that this is pampering, and we all went through this, and why how many children did you have before, it's none of your business how many children I have. Now I'm on poor psychological state, my soul is now collapsed, but no one give me his attention.	- gynecologists ignore - incomprehension - unsupportive - no one understand - unprofessional treatment
Interviewer: You knew that there was a psychiatric clinic here	
PP4: **I absolutely did not know, I tell you that I asked them to refer me to a psychiatric hospital, she did not tell me there is no, but she told me this is pampering and from these words, if I knew that there is a psychiatric clinic here, I went and booked with them and went to the doctor.**	**- lack of definition of services** **- incomprehension** **- desire for treatment**
Interviewer: Well, do you think why Fatima did not tell anyone from her family who close to her, her mother or sister, about what she was going through	
PP4: may be no one can understand her. I mean, I was talking to the doctors, and they laugh at me, so what about she goes and talks to her family (disdainful tone)	- no one understand
Interviewer: Have you tried talking to someone in your family	
PP4: **I told my family, and I told my mother, they tell me everything is normal, they know and understand that I am afraid, but it is normal to feel like this that you are going to a Caesarean section,** I have something to say but I do not know how to translate it for you hahah	**- no one understand** **- fear** **- normal to feel of fear (L)**

Appendix Q How Codes and Themes was Generated

Part from conducted Interviews	Memo	Code	Possible Themes
1. "They told me that there are hormones after childbirth, I mean, such as depression and sadness, they told me that they are normal things and I do not know" PP1. 2. "I have read and read. I think I know about these things, and I am aware, but 90% do not know and are afraid of people views at them" PP3. 3. "Perhaps no one cared about her from the beginning. Perhaps she did not care about herself" P2. 4. "They are not educated, and they don't interest to start to understand what happened and to search maybe in Google, this Internet is free here everywhere you can push there Google very easily and to learn about your pregnancy about yourself" D2	Woman was feeling lost, neglected. Woman were confident while she talked. Women complain from husband, family. Seems to be conservative	Overlapping signs & symptoms Knowing Family knowledge responsibility lack of awareness and education	Awareness
1. "I try to lure her with words, and if she refuses to let her comfort me, this is up to her. It is possible that some women like to keep these things to themselves and do not want anyone to see these feelings" N2.	She tried her best.	Kept silent.	

2. “Not all women come back to follow up with the psychiatrist. They often not attend the appointment because they are afraid for their reputation, or because the parents refuse to bring her to the appointment because of their reputation and their names. Umm, they’re afraid of people's talks” N3. 3. “It is not effective, especially if the woman has problems for the first time. She may not go to the psychiatric clinic, or she is not able by virtue of society and its backwardness in accepting such matters” D5.	Struggled with women to understand the mental health issues.	Culture sensitivity Culture sensitivity	Stigma

Appendix R Example Coded Quotes and Possible Theme Development