

POSTNATAL MENTAL ILLNESS: TOWARDS
DESIGNING AN ASSESSMENT TOOL FOR
MALAYSIAN MOTHERS

BY

NUR LIYANA SHAHMI BINTI RUSLAN

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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A dissertation submitted in fulfilment of the requirement for
the degree of Master of Nursing Science

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ABSTRACT

Postnatal mental illness is a major public health concerns worldwide but commonly underdiagnosed within clinical practices. In Malaysia, there is a lack of fundamental knowledge and perception among healthcare practitioners and postnatal mothers regarding postnatal mental illness, which hinder development of relevant assessment tool. This study aims to explore the views of healthcare practitioners and postnatal mothers on the signs and symptom, causes, assessment, management and potential mechanism in assessing postnatal mental illnesses which contribute in recognizing the domains needed in an assessment tool. This qualitative study was conducted using semi-structured interviews involving 28 healthcare practitioners and 6 postnatal mothers across 18 maternal and child clinics and six government hospitals in the states of Pahang, Terengganu, Perak, Negeri Sembilan and Klang Valley. The data were analysed using thematic analysis. The healthcare practitioners' and mothers' views on postnatal mental illness were reflected in three themes, namely conceptualization of postnatal mental illness, perceived causes of postnatal mental illness, and lastly roles and challenges in assessing and managing postnatal mental illness. According to the respondents, they were able to describe signs and symptoms of postnatal mental illness although with different depth of understanding, similarly with the causes that contributes to the postnatal mental illness. However, healthcare professional generally agreed that there is a lack of fundamental knowledge in addressing postnatal mental illness and readily available assessment tools are less effective for use in Malaysia context. Thus, the introduction of a relevant assessment tools for addressing postnatal mental illness among Malaysian mothers is crucial in addressing this issue.

خلاصة البحث

يعد المرض العقلي بعد الولادة من أهم مخاوف الصحة العامة في جميع أنحاء العالم ولكن يتم تشخيصه بشكل شائع ضمن الممارسات السريرية. في ماليزيا ، هناك نقص في المعرفة والإدراك الأساسي بين ممارسي الرعاية الصحية والأمهات بعد الولادة فيما يتعلق بالأمراض العقلية بعد الولادة ، مما يعيق تطوير أداة التقييم ذات الصلة. تهدف هذه الدراسة إلى استكشاف آراء ممارسي الرعاية الصحية وأمهات ما بعد الولادة حول العلامات والأعراض والأسباب والتقييم الإدارة والآلية المحتملة في تقييم الأمراض العقلية بعد الولادة التي تساهم في التعرف على المجالات اللازمة في أداة التقييم. أجريت هذه الدراسة النوعية باستخدام مقابلات شبه منظمة شملت ممارسًا للرعاية الصحية و 6 أمهات بعد الولادة عبر 18 عيادة للأمهات والأطفال وست 28 مستشفيات حكومية في ولايات باهانج ، تيرينجانو ، بيرك ، نيجيري سيمبيلان ووادي كلانج. تم تحليل البيانات باستخدام التحليل المواضيعي. انعكست آراء ممارسي الرعاية الصحية والأمهات حول الأمراض العقلية بعد الولادة في ثلاثة مواضيع ، وهي تصور الأمراض العقلية بعد الولادة ، والأسباب المتصورة للأمراض العقلية بعد الولادة، وأخيرًا الأدوار والتحديات في تقييم وإدارة الأمراض العقلية بعد الولادة. وفقًا للمستجيبين ، كانوا قادرين على وصف علامات وأعراض المرض العقلي بعد الولادة على الرغم من عمق الفهم المختلف ، وبالمثل مع الأسباب التي تساهم في المرض العقلي بعد الولادة. ومع ذلك ، اتفق أخصائيي الرعاية الصحية بشكل عام على أن هناك نقصًا في المعرفة الأساسية في معالجة الأمراض العقلية بعد الولادة وأن أدوات التقييم المتاحة بسهولة أقل فعالية للاستخدام في سياق ماليزيا. وبالتالي ، فإن إدخال أدوات التقييم ذات الصلة لمعالجة الأمراض العقلية بعد الولادة بين الأمهات الماليزيات أمر حاسم في معالجة هذه القضية.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Nursing Science.



ASSOC. PROF. DR. SITI ROSHAIDAI MOHD ARIFIN
Department of Special Care Nursing
Siti Roshaidai Mohd Arifin
International Islamic University Malaysia
Supervisor

.....
Karimah Hanim Abd. Aziz
Co-Supervisor

.....
Ramli Musa
Co-Supervisor

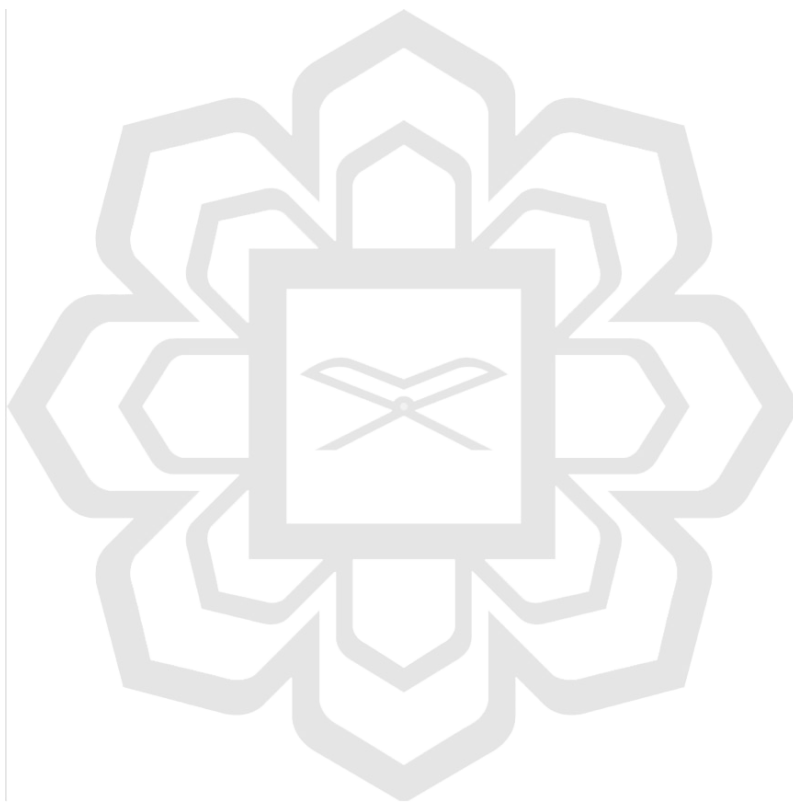
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Nursing Science.

.....
Lee Siew Pien
Internal Examiner

.....
Jalina Karim
External Examiner

This dissertation was submitted to the Kulliyah of Nursing and is accepted as a fulfilment of the requirement for the degree of Master of Nursing Science.

.....
Muhammad Kamil bin Che Hasan
Dean, Kulliyah of Nursing



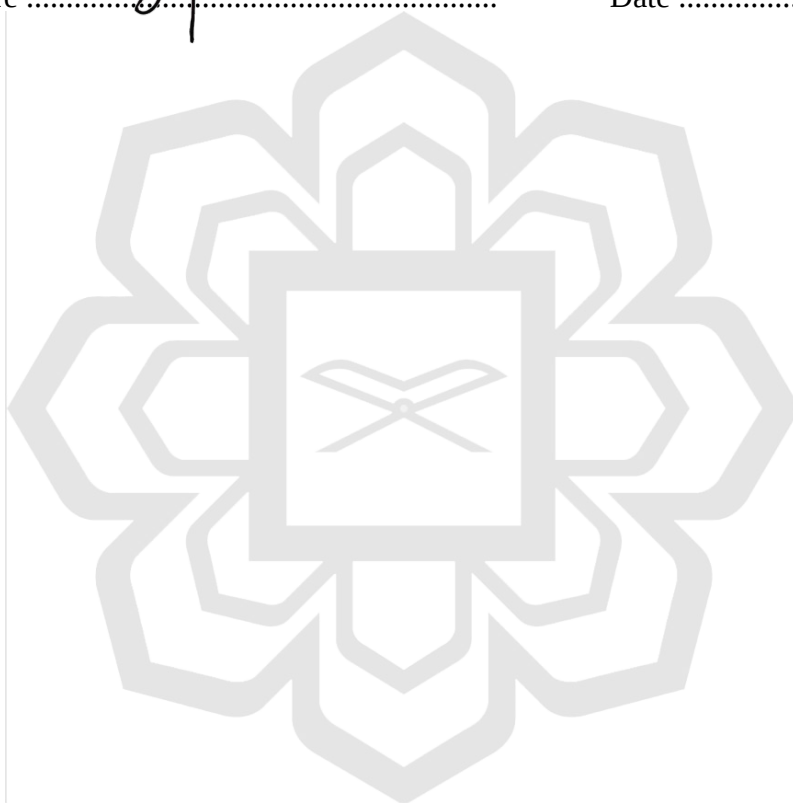
DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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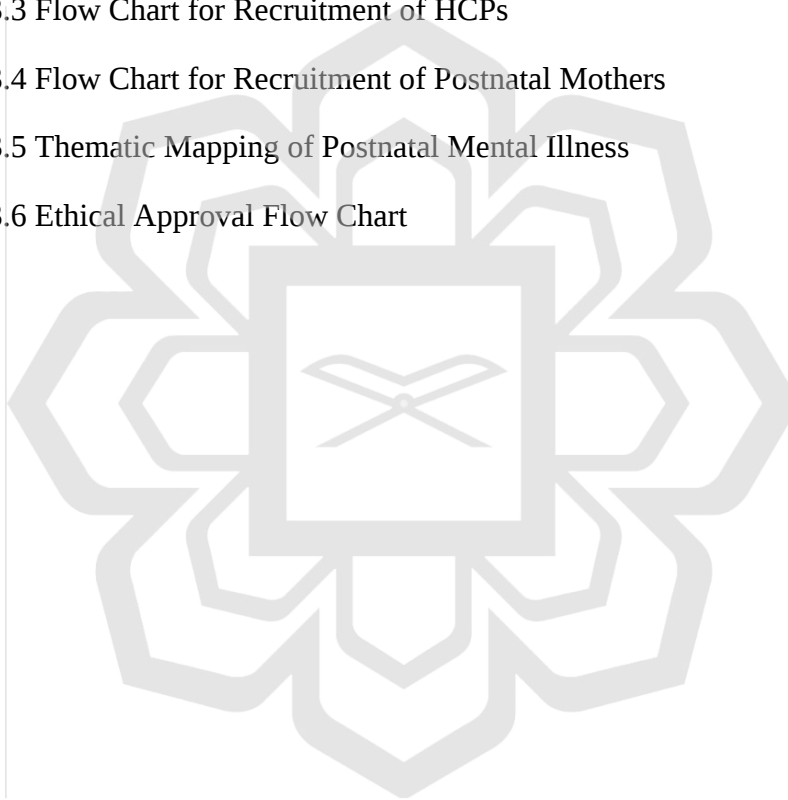
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LIST OF ABBREVIATIONS

ASI	Acculturative Stress Index
BAI	Beck Anxiety Inventory
BDI	Beck Depression Inventory
CES-D	Center for Epidemiological Studies Depression Scale
CME	Continuous Medical Education
CNE	Continuous Nursing Education
CPD	Continuing Professional Development
CPG	Clinical Practice Guideline
CSI	Childcare Stress Inventory
DASS 21	Depression, Anxiety, and Stress Scale
DEQ	Daily Experience Questionnaire
DSM-V	Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition
ECIR	Ethics Committee of International Islamic University Malaysia (IIUM)
EPDS	Edinburgh Postnatal Depression Scale
FMS	Family Medicine Specialists
GAD	Generalized Anxiety Disorder
GHQ 12	General Health Questionnaire
GPSQ	German Parental Stress Questionnaire
HADS	Hospital Anxiety and Depression Scale
HCPs	Healthcare Practitioners
HPSS	Hung Postpartum Stress Scale
ICD 10	International Classification of Disease 10 th Revision
K10/6	Kessler Psychological Distress Scale
KNPGRC	Kulliyah of Nursing Postgraduate and Research Committee
LEQ-M	Life Event Questionnaire – Modified
LSHS	Launay Slade Hallucination Scale
MBS	Maternity Blues Scale
MCH	Maternal and Child Health
MDD	Major Depressive Disorder
MOH	Ministry of Health
MREC	Medical Review & Ethics Committee
NMRR	National Medical Research Register
OCD	Obsessive-compulsive Disorder
PDEPS	Perinatal Depression Screening
PDI	Peter Delusion Inventory
PDMS	Postpartum Distress Measure Scale
PDSS	Postpartum Depression Screening Scale
PHQ	Patient Health Questionnaire
PMI	Postnatal Mental Illness
PSAS	Postpartum Specific Anxiety Scale
PSQ	Parental Stress Questionnaire
PSS	Perceived Stress Scale
SCL-90R	Hopkins Symptoms Checklist
SDGs	Sustainable Development Goals
SPSQ	Swedish Parental Stress Questionnaire
STAI	State Trait Anxiety Inventory

UN
WHO
ZAS

United Nations
World Health Organization
Zung Anxiety Scale



CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Postnatal period undeniably is one of the most transformative time in women's life. During this period, a woman may not only experience physical and physiological changes but also psychological and emotional changes. Although childbirth is viewed as joyous event filled with positive emotion, it may also cause a turmoil in the psychophysiological well-being due to the transition and adaptation of new demands and responsibilities (Dekel et al., 2019; Olza et al., 2018).

The World Health Organization (WHO) (2013) describes postnatal mental health as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community within postnatal period”. Thus, postnatal mental illness (PMI) can be defined as significant changes in thought, emotion and/or behaviour resulting from distress with inability to function in social, work, community or family activities within postnatal period. This includes postnatal blues, postnatal stress, postnatal anxiety, postnatal depression and postnatal psychosis.

The WHO (2008) reported about 10% of childbearing women in developed countries, and 20% to 33% in developing countries, have a significant mental health problem during perinatal period. Globally, 10% to 20% of postnatal mothers experience mental disorders (Kaseke et al., 2019). The United Nations (UN) had formulated 17 Sustainable Development Goals (SDGs) and one of them is SDG 3: Good health and wellbeing. The aim of this goal is to ensure healthy lives and promote well-being for all, including postnatal mothers. In order to achieve this goal, Government of Malaysia had made few planned such as understand vulnerable and unreached population through conducting baseline studies and establishing monitoring mechanism, refocusing on preventive approach, implementing fully existing plans and policies and enhancing frontline staff capabilities to handle cross-cutting issues (Government of Malaysia, 2017).

Recent evidences show that perinatal mental illnesses such as depression and anxiety are not only associated with children's behaviour problems and emotional negativity (Netsi et al., 2018; Prenoveau et al., 2017) but also contributing to increased risk of suicide, suicide attempt, suicidal ideation and thought of self-harm. Suicide is considered as one of the leading factors of maternal mortality in the first year of postnatal period (Orsolini et al., 2016; Weng et al., 2016). Despite these negative consequences, postnatal mental illness is largely underdiagnosed within clinical practices.

The WHO has made recommendation that healthcare practitioners (HCPs) working within perinatal care provision should be able to assess mental illnesses in women attending for antenatal and postnatal healthcare. As such, HCPs in Malaysia should have appropriate knowledge, skills and relevant assessment tool to detect perinatal mental illnesses. Studies have shown that availability of assessment tools increased HCPs' confidence in dealing with perinatal mental illness, whereas the absence of such tools limit the management of the illnesses (Agapidaki et al., 2014; Belle & Willis, 2013). However, up to this date there is no specific tool designed for the diverse ethnic and cultural contexts in Malaysia. While there are assessment tools available to assess postnatal mental illnesses such as Edinburgh Postnatal Depression Scale (EPDS), Postpartum Depression Screening Scale (PDSS), Patient Health Questionnaire (PHQ 9), Depression, Anxiety, and Stress Scale (DASS 21), and General Health Questionnaire (GHQ 12), they were developed based on the western women's experience of PMI (Ali et al., 2016; Rai et al., 2015)

1.2 PROBLEM STATEMENT

The knowledge and perceptions of the HCPs on assessment or screening of postnatal mental illness is not fully studied, and their views on signs and symptoms to be the indicator for postnatal mental illness are not fully explored (Arifin et al., 2019). HCPs working within postnatal care provision should be able to assess PMI in women attending for antenatal and postnatal healthcare. To do so, they require appropriate knowledge, skills and relevant screening and assessment tools to detect early symptoms of perinatal mental illness. Such skills could be enhanced through the presence of mechanism that promoting the assessment of mental illness within their clinical settings.

In Malaysia, the assessment and detection of PMI cannot be made accurately due to unavailability of a culturally appropriate and relevant assessment tool. This means PMI is under-recognised and under-treated within Malaysian healthcare settings (Rai et al., 2015).

In Malaysian National Health and Morbidity Survey (2016) report, there were three recommendations were made regarding perinatal mental illness screening. First, it was recommended that the promotion of mental health should be enhanced to antenatal and postnatal mothers. Second, the healthcare practitioners should increase their knowledge and skills of perinatal mental health. Third, screening opportunities for postnatal mental illness in health care should be explored. Despite these recommendations, there is a lack of fundamental knowledge to enable successful development of such screening opportunities.

As mention in previous section (see Section 1.1) the items generated to assess PMI in assessment tools were based on the western women's experience. The experience of PMI is not a fully shared experience that is similarly expressed by woman across the world, possibly due to the influence of an interpretive lens resulting in postnatal mental illness being interpreted differently from one person to another (Walsh & Evans, 2014). For instance, cultural and tradition was reported as the factors contributing to postnatal depression among Asian women due to the lack of the empowerment to reject traditional rituals that are imposed on them by their female caregivers (Arifin et al., 2020; Maigun et al., 2015). There are some features of these traditional rituals which may be the cause of tension, stress and emotional distress. Thus, using the western-oriented assessment tools to detect PMI among Malaysian mothers may not be equally valid.

The impetus of this research is derived from the consideration that a culturally appropriate assessment tool that is effective and appropriate to the geography, ethnic and cultural diversity of Malaysia is urgently required as recommended by the Malaysian National Health and Morbidity Survey 2016. The aims of this study were to (i) provide fundamental understanding of perceptions of HCPs and Malaysian postnatal mothers pertaining to postnatal mental illness (ii) provide essential understanding of signs and symptoms to be the indicators for postnatal mental illness (iii) provide

fundamental views on the cause of postnatal mental illness and (iv) provide potential mechanism to assess postnatal mental illness in Malaysia.

1.3 SIGNIFICANCE OF THE STUDY

The findings of this study will give positive impact in supporting the economic development, improving healthcare services as well as enhancing promotion of mental health in postnatal mother.

1.3.1 Supporting Positive Economic Development in Malaysia

This study is relevant to Malaysia's mission in supporting and implementing the 2030 Agenda for Sustainable Development and its 17 SDGs. While one of the key areas under the SDGs had been discuss in previous section (see Section 1.1) which is improving the well-being of the people (SDG 3), it also recognises the role of women through promotion of the rights of women and girls (SDG 5). In Malaysia, the female labour force participation rate has increased to 54%. Various measures have been taken by the government to encourage women to return to the workplace including career comeback programmes, grants for establishing child care centres at workplaces, increasing maternity leave and making flexible work arrangements (Government of Malaysia, 2017). Given this high percentage of women involvement in Malaysia's workforce, their physical and psychological well-being needs to be maintained at the optimal level to get better output in labour force.

Thus, this study will help to improve women's well-being by providing better understanding on mental health status and early detection of any postnatal mental illness among postnatal mothers. Indirectly, it will prevent the complications of PMI in women, reducing healthcare cost, hospital stay, or medical leave related to PMI, as well as facilitating productive women in the labour sector. It also will help the women to maintain their health and able to return to the workplace at earlier time postnatally. Therefore, it will contribute in generating positive economic development in Malaysia.

1.3.2 Improving Healthcare Services

One of the mechanisms to achieve the well-being of Malaysians is through improving quality health services. This study is directly relevant to the purpose of promoting welfare and wellbeing of individuals and vulnerable population groups in Malaysia.

Postnatal mental illness has a significant impact on mothers, infants, families and societies. Without the right kind of support and treatment, it can develop long-term negative impacts on the mother's health and wellbeing. PMI is associated with poor child cognitive, behavioural, and social development. The prevalence of PMI in Malaysia varies between 7% to 27%, and the prevalence of other mental illnesses associated with childbirth are unknown (Arifin et al., 2018). Despite this, there are a lack of availability of trained health care professionals that can identify and detect PMI, therefore it remains underrecognized and undertreated (Hanafiah & Van Bortel, 2015; Legere et al., 2017).

There is inequality of access to adequately trained and skilled mental health professionals and specialist medical facilities across the region. For example, east Malaysia – Sabah and Sarawak, is less well equipped and more understaffed than Peninsular Malaysia, due to the lack of basic infrastructure and medical personnel (Ministry of Health Malaysia, 2017; Safurah et al., 2013). However, across Malaysia access to psychiatric services in the community are limited. From 60 general hospitals only 25 of them are equipped with community-based mental health services (MENTARI) (Noor Hisham, 2019). This study aims to improve postnatal mental health among postnatal mothers in Malaysia by undertaking research projects that comprehended and enhanced early detection of PMI.

1.4 RESEARCH QUESTION

- i. How healthcare practitioners and postnatal mothers perceived signs and symptoms of postnatal mental illness?
- ii. How healthcare practitioners and postnatal mothers perceived causes of postnatal mental illness?

- iii. How does healthcare practitioners in Malaysia assess and manage postnatal mental illness among postnatal mothers?
- iv. What is the potential mechanism to assess postnatal mental illness in Malaysia?

1.5 RESEARCH OBJECTIVES

1.5.1 General Objective

The general objective of this study was to:

- i. Explore healthcare practitioners' and postnatal mothers' views on the postnatal mental illness assessment among Malaysian women.

1.5.2 Specific Objectives

The specific objectives of this study were to:

- i. Understand the views of healthcare practitioners and postnatal mothers on signs and symptoms of postnatal mental illness.
- ii. Explore the perceptions of healthcare practitioners and postnatal mothers on causes of postnatal mental illness.
- iii. Explore how healthcare practitioners in Malaysia assess and manage postnatal mental illness among postnatal mothers.
- iv. Explore the potential mechanism to assess postnatal mental illness in Malaysia.

1.6 DEFINITIONS OF TERMS

1.6.1 Postnatal Mother

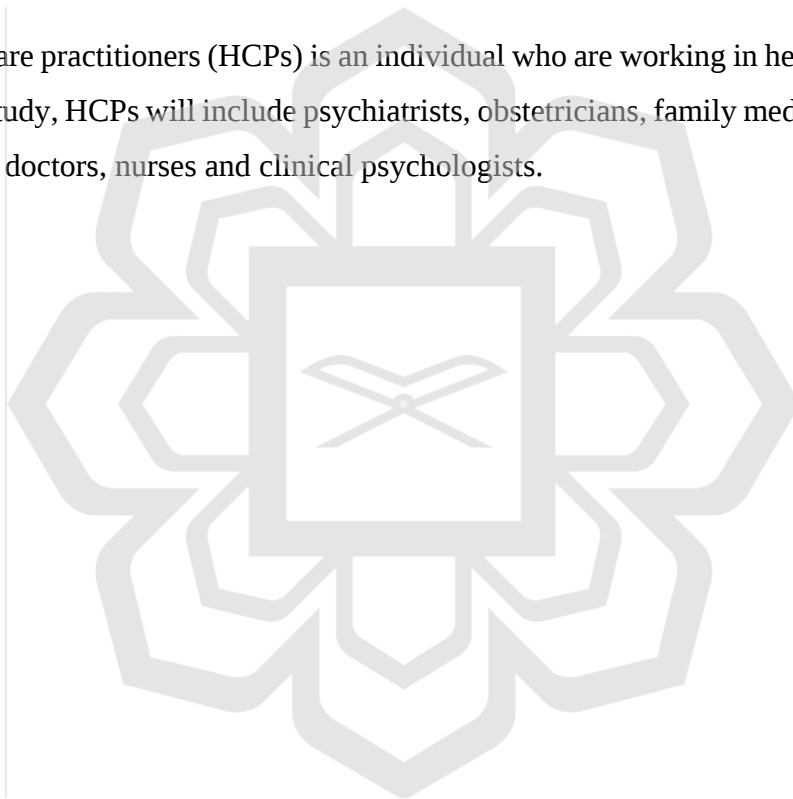
In this study, postnatal mother is a childbearing woman in the first 12 month (0-12 month) after childbirth who was experiencing childbirth and having an alive and healthy infant. It was used interchangeably with postnatal women in this study.

1.6.2 Postnatal Mental Illness

Postnatal mental illness is defined as significant changes in thinking, emotion and/or behaviour resulting from distress with inability of functioning in social, work, community or family activities within postnatal period (World Health Organization, 2013). In this study, postnatal mental illness refers to common mental disorder in the first year of postnatal period which include postnatal blues, postnatal stress, postnatal anxiety, postnatal depression and postnatal psychosis.

1.6.3 Healthcare Practitioners

Healthcare practitioners (HCPs) is an individual who are working in health care sectors. In this study, HCPs will include psychiatrists, obstetricians, family medicine specialists, medical doctors, nurses and clinical psychologists.



CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter includes an overview on postnatal mental illness (PMI) in a context of Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-V) and International Classification of Disease 10th Revision (ICD 10). An elaboration of each types of common PMI and its' characteristics were presented to provide better understanding of this issue. This is followed with a scoping review on the availability, validity and reliability of current assessment tools that was used to measure PMI. Then, the domains for current assessment tools were identified. Subsequently, a glance on previous studies about the views on PMI was discussed. This chapter then provides some information on the current practices and assessment tool used to detect PMI in Malaysia that is relevant to the focus of this study.

2.2 COMMON POSTNATAL MENTAL ILLNESS

Traditionally, postnatal mental illness (PMI) are divided into three main categories which are postnatal blues, postnatal depression and postnatal psychosis. However, both The Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-V) and International Classification of Disease 10th Revision (ICD 10) has broadened the definition of mental health problems by characterizing the emotion of transient mood lability, irritability, tearfulness, agitation, delusion, confusion, and delirium (Leddy et al., 2011; Rai et al., 2015). DSM-V and ICD 10 are the most common diagnostic criteria use to classify medical condition worldwide.

DSM-V has allow the psychiatrist to use the “with peripartum onset” specifier to describe the following mental disorders if symptoms appear during pregnancy or within the first four (4) weeks after delivery : Most recent / current major depressive, manic or mixed episode with psychotic features in Major Depressive Disorder, Bipolar I, Bipolar II, and Brief Psychotic Disorder (Leddy et al., 2011; Rai et al., 2015). In ICD 10, mental disorder related to postnatal are coded according to the presenting psychiatric

disorder. The ICD 10 permits a special code (F53) to classified a mental dan behavioural disorder related to postnatal if the onset appears within six (6) weeks after delivery and it cannot be classified elsewhere (Rai et al., 2015). Common mental health disorders defined in ICD 10 as affective disorder and neurotic, stress-related and somatoform disorder which include manic, bipolar, depressive, anxiety, obsessive-compulsive disorder, reaction to severe stress and adjustment disorder. Based on the definition of PMI by DSM-V and ICD 10, this study will include five (5) common types of mental illnesses which are postnatal blues, postnatal stress, postnatal anxiety, postnatal depression and postnatal psychosis. Each of the PMI will be further elaborated in this subsection to distinguish its criteria.

While DSM-V and ICD 10 has described the ‘time limit’ of postnatal period is within four (4) and six (6) weeks respectively, the postnatal time-frame is still debatable. According to the World Health Organization (2015) postnatal period usually considered to be the first six (6) weeks after delivery, nevertheless, some researchers recommend to extend the definition up to one (1) year due to many changes persist beyond the first month or six (6) weeks after the childbirth (Dias & Jones, 2016; Meltzer-Brody et al., 2018; Rai et al., 2015). Thus, in this study, postnatal period begins immediately after the birth until one year after delivery.

Mental health practitioners generally use DSM-V or ICD-10 to guide their clinical diagnosis pertaining to mental health disorders. Within psychiatric setting in Malaysia, DSM-V has been used widely. Both of these international guidelines had alerted the practitioners about potential health hazards associated with socioeconomic and psychosocial conditions such as problem related to education, employment and primary support group because it may be the focus of clinical attention during the assessment and diagnosis of mental disorders. However, DSM-V goes further in this matter by alerting the practitioners to consider cultural variables prior diagnosing the patient with mental disorders whilst ICD-10 has muted in considering the impact of this context when diagnosing mental disorders (Paniagua, 2018).

Culture is defined as a system of knowledge, concepts, and practices that are learned and transmitted across generations and may change over time. It includes religion and spirituality, language, rituals, customs, family structure, life-cycle stages, moral and legal systems (American Psychiatric Association, 2013). For instance, DSM-

V has alerted the practitioners to pay attention to the way of patient expressing symptoms of depression in somatic terms. Patient might complaints different somatic terms such as ‘nerves’ and headache (Latino and Mediterranean), weakness, tiredness, or ‘imbalance’ (Chinese and Asian), or heart problems (Middle Eastern) to express their conditions (American Psychiatric Association, 2013). In addition, a study conducted by Arifin (2016) in Malaysia found that Chinese and Indian women likely to explain their symptoms based on emotional changes such as ‘loss of excitement’, ‘getting easily irritated’, and ‘being not normal’ Malay women were reported as more likely to describe their symptoms using a combination of emotional and behavioural changes such as ‘aggressive behaviour’ and ‘uncontrollable crying’ (Arifin, 2016). Thus, unfamiliarity with how the particular culture explains the features of illness may lead to underdiagnosed and undertreated it. Therefore, the definition and characteristics of each PMI in this study will be guide by DSM-V guidelines.

2.2.1 Postnatal Blues

Postnatal blues is a brief period of mild mood disturbance after the childbirth. It is the most frequent mood disorder that will appear in postnatal mother. It affects 26% to 85% of women between 1st and 14th day after childbirth, with the characteristic peak at 3rd to 5th day of postnatal period. Postnatal blues or known as “baby blues” is characterised by dysphoria, frequent crying, mood lability, irritability, anxiety, insomnia, and loss of appetite (Balaram & Marwaha, 2023). Postnatal blues is considered as a common reaction due to the hormonal changes and will gradually diminished within two weeks after the childbirth, therefore treatment is not required. However, postnatal mothers are vulnerable to a more severe form of mental illnesses if it is persisted more than two weeks of postnatal period (Heinisch et al., 2019; Kaźmierczak et al., 2017; Leddy et al., 2011; O’Hara & Wisner, 2014; Pop et al., 2015; Rai et al., 2015).

2.2.2 Postnatal Stress

Hung (2001) has defined postnatal stress as a constraining force, produced by postnatal stressors. The stressors can be social or non-social (physical) which happened within six (6) weeks post-delivery. Postnatal stress can be characterised by tension, chronic

arousal and a degree of impaired functioning, as conceptualised by Lovibond and Lovibond (1995) in the Depression, Anxiety, Stress Scales-21 (DASS-21). Nevertheless, DSM-V has described the sign and symptoms of stress (not specified to postnatal) as per Table 2.1 (American Psychiatric Association, 2013; Center for Behavioral Health Statistics and Quality, 2016).

Table 2.1 Characteristic of Acute Stress Disorder in DSM-V

Disorder Class: Trauma and Stressor-Related	
	• Presence of nine or more of the following symptoms from any of the five categories of intrusion, negative mood, dissociation, avoidance, and arousal, beginning or worsening after the traumatic event • The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. • Duration of the disturbance is persistent for at least 3 days to 1 month after trauma exposure
Intrusion Symptoms	1. Recurrent, involuntary, and intrusive distressing memories of the traumatic event 2. Recurrent distressing dreams in which the content and/or effect of the dream are related to the event 3. Dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring. 4. Intense or prolonged psychological distress or marked physiological reactions in response to internal or external cues that symbolize or resemble an aspect of the traumatic event(s).
Negative Mood	5. Persistent inability to experience positive emotions

Dissociative Symptoms 6. An altered sense of the reality of one's surroundings or oneself 7. Inability to remember an important aspect of the traumatic event(s)	
Avoidance Symptoms 8. Efforts to avoid distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s). 9. Efforts to avoid external reminders that arouse distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s).	
Arousal Symptoms 10. Sleep disturbance 11. Irritable behaviour and angry outbursts 12. Hypervigilance. 13. Problems with concentration. 14. Exaggerated startle response	

Mathew et al. (2017) conducted a descriptive study to assess level of stress among 100 postnatal mothers in India and found that 63% of them having mild stress, 33% moderate stress and 4% severe stress. None of them are experiencing eustress or extremely severe stress. In this study, different levels of stress are related to maternal role attainment, negative body changes and social support factors. Another study conducted by Deltsidou et al. (2018) in Greece involving 320 postnatal mothers showed that 14% had mild stress, 19% had moderate stress, 17% had severe stress and 19% had extremely severe stress. This study also found that there is a moderate correlation between maternal role attainment, negative body changes and social support with postnatal stress. However, various studies showed that there is a very strong positive correlation between postnatal stress and depression (Hutchens & Kearney, 2020; Nurbaeti et al., 2019) as well as anxiety (Deltsidou et al., 2018; Zakeri et al., 2022).

Currently, there are still a lack of research pertaining to postnatal stress and no known studies were found to be conducted in Malaysia which determine level of stress among postnatal mother. Findings presented above have suggested that many women experiencing PMI including stress are possibly ignored when criteria only for depression is used. These studies suggested that it is improper to conclude that women functional well-being based on depression symptoms. This view is mainly important when there are potential adverse consequences of untreated stress in postnatal mothers.

2.2.3 Postnatal Anxiety

Postnatal anxiety is one of the most common mental health problems in postnatal mothers, characterized by trembling, pains, feeling faint, feeling fear, constant worrying and sleep disruption. Major anxiety disorder includes Panic Attacks, Generalized Anxiety Disorder (GAD), Obsessive-compulsive Disorder (OCD) and Social Anxiety Disorders (O'Hara & Wisner, 2014; Riaz et al., 2015). The signs and symptoms of anxiety are described as Table 2.2 (American Psychiatric Association, 2013; Center for Behavioral Health Statistics and Quality, 2016).

Table 2.2 Characteristics of Anxiety Disorder in DSM-V

Disorder Class: Anxiety Disorder	
• The anxiety and worry are associated with three or more of the following six symptoms with at least some symptoms present for more days than not for the past 6 months. • The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning	
1. Restlessness or feeling keyed up or on edge	
2. Being easily fatigued	
3. Difficulty concentrating or mind going blank	

4. Irritability
5. Muscle tension
6. Sleep disturbance (difficulty falling or staying asleep, or restless unsatisfying sleep)

A meta-analysis of 102 studies from 34 countries reported that the prevalence rate of anxiety symptoms in the first year of postnatal period is between 15% to 17.8% and the prevalence of any anxiety disorder to be diagnosed in postnatal women within first year of postnatal period is range from 9.3% to 9.9% which almost the same with prevalence rate of postnatal depression (Dennis et al., 2017). Another meta-analysis study by (Falah-Hassani et al., 2017) found that the prevalence rate of comorbid depressive and anxiety symptomatology between 1st and 24th weeks of postnatal period was 8.2%. However, studies conducted in postnatal women population in Canada and Croatia showed a higher prevalence rate of comorbidity between postnatal depression and anxiety which is between 20 % to 22%. It might be due to the sample population of this study was restricted to a specific ethnic group (Dennis et al., 2018; Tadinac & Herman, 2018). In addition, another studies done in Nigeria shows a prevalence rate for anxiety was 30% with co-morbidity rate with depression was 22% (Odinka et al., 2019).

Limited attention has been given to postnatal anxiety. This is clinically important since women with comorbidity may experience more complex and severe symptoms with serious negative consequences compared to women with depression or anxiety alone (Clout & Brown, 2015; Dennis et al., 2017; Kobra Falah-Hassani et al., 2016). Till now, there are no known studies conducted to assess postnatal anxiety or comorbidity postnatal anxiety with depression had been done in Malaysia setting.

2.2.4 Postnatal Depression

Postnatal depression is the most common mental health problems in postnatal mothers. It usually characterized by feeling of sadness, low mood, tearfulness, lack of enjoyment, lack of energy, loss of interest or pleasure and impaired concentration which also known

as depressive symptoms. These symptoms frequently begin two to three weeks after the childbirth and may be lasted for a year. It must be presented for more than two weeks to be distinguished from postnatal blues (Dias & Jones, 2016). Table 2.3 describe the characteristics of depressive mood disorder in the DSM-V (American Psychiatric Association, 2013; Center for Behavioral Health Statistics and Quality, 2016).

Table 2.3 Characteristics of Depressive Disorder DSM-V

Disorder Class: Depressive Disorder	
• Presence of five or more of the following symptoms in the same 2-week period • At least one of the symptoms is either depressed mood or loss of interest or pleasure. • The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.	
1. Depressed mood most of the day, as indicated by either subjective report (e.g., feels sad, empty, hopeless) or observation made by others (e.g., appears tearful). 2. Loss of interest or pleasure in all, or almost all, activities most of the day 3. Significant weight loss when not dieting or weight gain – a change of more than 5% of body weight in a month 4. Insomnia or hypersomnia 5. Psychomotor agitation or retardation severe enough to be observable by others 6. Fatigue, loss of energy, tiredness, or decreased efficiency with which routine tasks are completed. 7. Feelings of worthlessness or excessive, inappropriate or delusional guilt 8. Impaired ability to think or concentrate, or indecisiveness – indicated by subjective report or observation by others 9. Recurrent thoughts of death (not just fear of dying), suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide	

Previous studies had shown a wide variation of prevalence across the countries. Although O'Hara & Swain (1996) had stated that 10% to 15% of women might be affected by postnatal depression, a recent review done by Arifin et al. (2018) found that it might not represent the actual magnitude of postnatal depression globally. In this study, the prevalence of postnatal depression was range between 4.0% to 48.3% in Asia, 5.0% to 63.9% in America, 4.4% to 22.5% in Europe, 7.2% to 50.3% in Africa, 6.0% to 32.8% in Australia and 7.6% to 30.9% in New Zealand. This study also found that the prevalence rate of postnatal depression in Malaysia was ranged from 6.8% to 27.3%. The variety of the prevalence rate might be due to the difference in setting, design, instruments, samples sizes and time of assessment. This could also due to cross-cultural differences and how women comprehend and interpret the items in the instruments (Arifin et al., 2018).

Postnatal depression requires treatment either self-help strategies (e.g. exercise, guided self-help), counselling, psychological therapy (e.g. CBT) or medication (Dias & Jones, 2016). Women with postnatal depression generally do not exhibit psychotic symptoms (refer section 2.2.5), but, if it is accompanied with these symptoms, postnatal psychosis should be considered.

2.2.5 Postnatal Psychosis

Postnatal psychosis is considered as the most severe form of postnatal mental illness. It can occur immediately after the childbirth up to first month postnatal period. The most frequently cited prevalence of postnatal psychosis is 1 to 2 in 1000 childbirth (Işık, 2018; Osborne, 2018). The recent systematic review done by VanderKruik et al. (2017) shows the incidence of postnatal psychosis is ranging from 0.89 to 2.6 in 1000 childbirth. While the prevalence rate is much lower than the other PMI, postnatal psychosis requires immediate assessment and intervention as it may cause serious negative consequences such as suicide and infanticide (I. Jones et al., 2014).

It is estimated that 4% of women with postnatal psychosis commit infanticide and 5% commit suicide (Spinelli, 2009). Nowadays, maternal suicide is considered as one of the leading causes of maternal mortality in the first year of postnatal period (Meltzer-Brody et al., 2018; Orsolini et al., 2016). The sign and symptom of psychosis

according to DSM-V is summarized as per table 2.4 below (American Psychiatric Association, 2013; Center for Behavioral Health Statistics and Quality, 2016).

Table 2.4 Characteristics of Psychotic Disorder in DSM-V

Disorder Class: Schizophrenia Spectrum and Other Psychotic Disorders	
Two or more of the following, each present for a significant portion of time during a month period (or less if successfully treated).	
1. delusions	
2. hallucinations	
3. disorganized speech (e.g., frequent derailment or incoherence)	
4. grossly disorganized or catatonic behaviour	
5. negative symptoms (i.e., diminished emotional expression or avolition)	

Thus, a broader classification of assessment for postnatal mental illness which include not only depression, but also stress, anxiety and psychosis is beneficial.

2.3 ASSESSMENT TOOLS USED TO MEASURE POSTNATAL MENTAL ILLNESS

The usage of self-reported assessment tool to detect PMI at either primary or tertiary healthcare setting is essential. This is because the majority of the HCPs have neither time nor training to administer complex diagnostic interviews to all individuals at risk of mental illnesses (Ali et al., 2016). However, these assessment tools need to be test for its reliability and validity before implementing in the particular setting because cross-cultural differences in understanding of the physical symptoms appear due to psychological condition and expression on the mental distress might be different. It may lead to under-recognition or misinterpretation of mental illnesses (Ali et al., 2016; Kumar et al., 2015).

The researcher had conducted a scoping review to examine assessment tools used in prior studies to measure postnatal mental illnesses. It was undertaken in two stages: the initial review and more recent updated review. The sections below describe on the search strategies, study selection, charting the data, collating, summarising and reporting the results of availability, reliability and validity of the assessment tools reviewed in both stages.

2.3.1 Search Strategy

This review was done to outline the different types of evidences available in this area of interest and to fill in the gaps for further research. It was guided by the framework proposed by Arksey & O'Malley (2005) and Joanna Briggs Institute (2015) which recommend to follow five steps: i) identifying the research questions, ii) identifying relevant studies, iii) study selection, iv) charting the data, and v) collating, summarising, and reporting the result which will be further explained in next section.

2.3.1.1 Identifying the Research Question

The main research question for this review was “what are the assessment tools used to assess PMI?” and the research sub-questions were i) “what are the common assessment tools used to assess PMI?”, ii) “what are the types of PMI were assessed?” iii) where were these assessment tools were used?” and iv) what is the reliability and validity of these assessment tools?”. After identifying the research question, the researcher moves to identify relevant studies as stated below.

2.3.1.2 Identifying Relevant Studies

The following online database were searched: PubMed, Scopus and Science Direct from the years 2010 – 2020 in the initial review and later on from the years 2020 – 2023 in the recent review to reflect the most updated literature. The keywords was used in various combination of Boolean search of AND and/or OR with the following MESH term: postnatal or postpartum or maternal mental health, postnatal or postpartum or maternal mental illness, postnatal or postpartum psychiatric disorder, postnatal or

postpartum blues, postnatal or postpartum stress, postnatal or postpartum anxiety, postnatal or postpartum depression, postnatal or postpartum psychosis, AND screening tool, assessment tool, instrument, OR questionnaire, AND psychometric properties, reliability, OR validity to identify relevant papers. The reference lists of the articles were inspected to ensure that only relevant articles were included in this review. Then, the researcher done a study selection from founded articles.

2.3.1.3 Study Selection

In this step, the researcher aimed to identify the studies that would be included in the review by screening through the eligibility criteria. The eligibility of the criteria would ensure that the content of the included studies was relevant with the aim and research questions of the review. The inclusion and exclusion criteria of both reviews were stated as below.

2.3.1.3.1 Inclusion Criteria

The inclusion criteria included in this review were:

- i. Peer reviewed articles
- ii. Published from 2010 to 2020 (initial review), from 2020 to 2023 (recent review)
- iii. Studies reported psychometric properties of reliability or validity of the assessment tool used for any postnatal mental illnesses
- iv. Respondent were postnatal mothers within the first year of childbirth as the respondent
- v. English or Malay language publication

2.3.1.3.2 Exclusion Criteria

The exclusion criteria in this review were:

- i. Review papers

ii. Postnatal women were not the focus group of the study

All articles found in the database were then transferred to the reference manager database and duplicates were removed. The titles and abstracts were screened and the articles that did not meet the eligibility criteria were excluded and full articles that fulfilled the eligibility criteria were retrieved. A sample of retrieved articles were then screened by the supervisors to ensure consistent application of the eligibility criteria. The results were reviewed by the researcher and supervisors. Disagreements were discussed until a consensus was reached. This process of study selection was reported by using a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart (Figure 2.1 and 2.2).

In initial review, a total of 6028 articles were identified, 31 duplicates were removed, then another 5695 articles were removed as the title were not related or were not published between 2010-2020, 302 abstracts were screened, and 207 articles retrieved for full-text review. Further elimination was done if the articles did not report on psychometric properties, reliability or validity of the assessment tools, not conducted within the first year after childbirth, were not focused on postnatal mothers, not in English/Malay, or published as review papers, which left us with 59 articles.

Additionally, in recent review of articles from 2020, another 5530 articles were identified, 17 duplicates were removed, then 5390 articles were removed as the title were not related, 123 abstracts were screened, and 57 articles retrieved for full-text review. Further elimination was done if the articles were not met the inclusion and exclusion criteria, which only left with 7 articles.

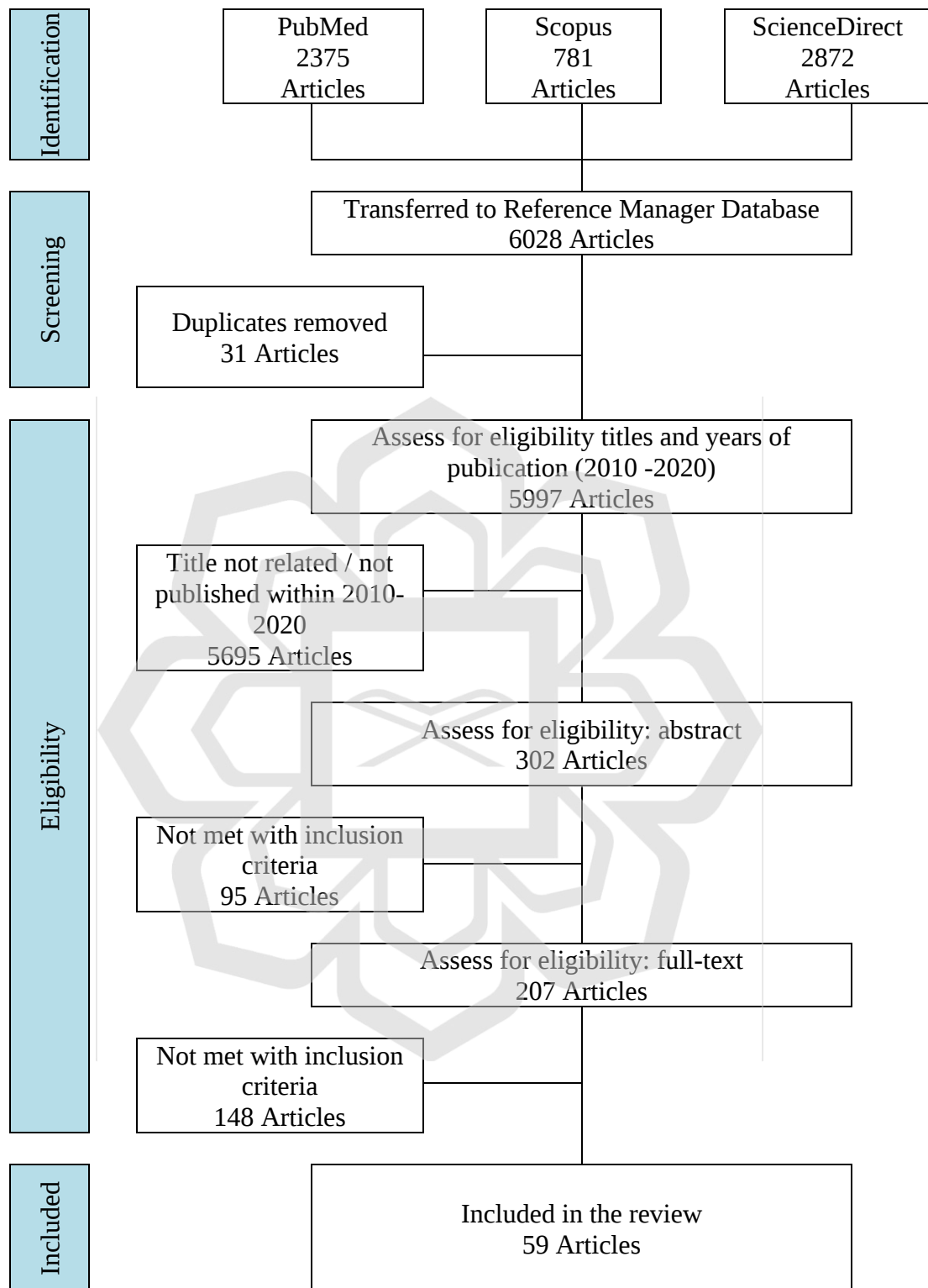


Figure 2.1 Flow Diagram on Search Strategy for Assessment Tools Used for Postnatal Mental Illness (Initial Review)

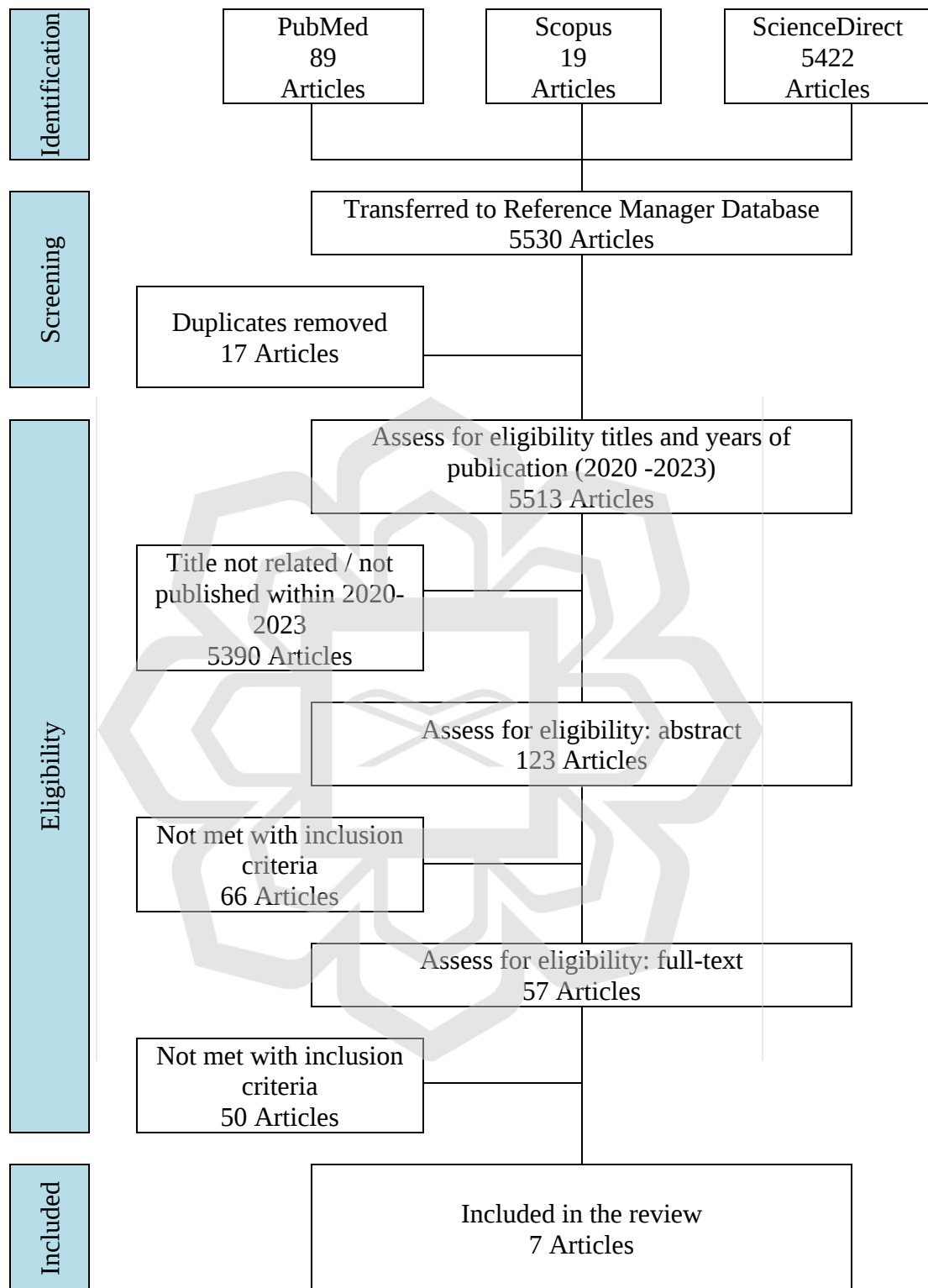


Figure 2.2 Flow Diagram on Search Strategy for Assessment Tools Used for Postnatal Mental Illness (Recent Review)

2.3.1.4 Charting the Data

After that, a data charting was used to record relevant information from each of the included studies and extracted data were entered into the database programme Excel as follows (See Appendix A):

- i. Author(s), title, year of publication, country of origin
- ii. Sample size, assessment time (week of postnatal period), study method
- iii. Types and characteristics of assessment tools used to measure PMI
- iv. Reliability and validity of assessment tools

2.3.1.4.1 Collating, Summarising and Reporting Result

Subsequently, a report was produced to summarise the extracted data from both reviews which provide information on the types of PMI assess by the tools, types of assessment tools used, location and language used in the assessment tools and their reliability and validity, these results were in relation to the research questions and in the context of overall study purpose. Gap identification highlighted the most common assessment tools uses to measure PMI.

2.3.2 Findings

There were wide variations in the type of assessment tools used for screening of each PMI. Several studies had validated multiple tools. Thus, the 66 included articles from both reviews correspond to 105 assessment tools used to assess postnatal mental illnesses. From these articles, 2 validated tools were for postnatal blues, 11 for postnatal stress, 16 for postnatal anxiety, 56 for postnatal depression, 4 for postnatal psychosis, 6 for combination of postnatal depression and postnatal anxiety, and 10 for postnatal psychological disorder.

Out of these 105 tools eligible for inclusion in this review: 7 were utilized in Africa, 26 in Asia, 7 in Australia, 42 in Europe, 21 in North America, and 2 in South America. This implies more researches on psychometric properties in assessment tools for PMI were conducted in western countries compared to eastern countries.

2.3.2.1 Reliability and Validity of the Assessment Tools

Based on this review, there was inconsistency in assessing the validity of the data across the measures such as concurrent validity, convergent validity, divergent validity, predictive validity, etc., thus, a validity coding scheme is impossible to be implemented across the assessment tools. Therefore, a summary on any evidence of validity presented in the original psychometric papers is attached in appendix A.

For reliability data, it can be categorized as adequate, good and excellent reliabilities based on the criteria set forth by Hunsley & Mash (2008). These criteria are reviewed in Table 2.5.

Table 2.5 Criteria at a Glance: Reliability

Types of Reliability	Criteria	Preponderance of Evidence
Internal Consistency Cronbach Alpha (α)	Adequate	0.70 – 0.79
	Good	0.80 – 0.89
	Excellent	≥ 0.90
Inter-rater Reliability Kappa (κ) Intraclass correlation (ICC) Pearson correlation (p)	Adequate	κ values of 0.60 – 0.74 ICC or p values 0.70 – 0.79
	Good	κ values of 0.75 – 0.84 ICC or p values 0.80 – 0.79
	Excellent	κ values of ≥ 0.85 ICC or p values ≥ 0.90
Test-retest Reliability	Adequate	0.70 over a period of several days to several weeks
	Good	0.70 over a period of several months
	Excellent	0.70 over a period of a year or longer

2.3.2.2 Postnatal Blues

2.3.2.2.1 Daily Experience Questionnaire (DEQ)

The DEQ was adapted from 27 items in Kennerly Maternity Blues Questionnaire with combination of 10 items in Positive and Negative Affect Schedule and one item to assess loss appetite to measure postnatal blues. Each item was rated on a 1 to 5 Likert-type scale ranging from 1 (very slightly or not at all) to 5 (extremely), reflecting the mother's affective experience on that day. This study conducted in United States of America (USA). It has good to excellent reliabilities with the range of Cronbach's alpha (α) 0.88 to 0.94 of each group of items (Buttner et al., 2012).

2.3.2.2.2 Maternity Blues Scale (MBS)

The MBS is a 28 items scale developed by Kennerley and Gath (1989) which include 7 clusters: primary blues, decreased alertness, hypersensitivity, decreased self-confidence, depression, despondency, and reservation. This study was conducted in Netherland by using MBS (Dutch version) and was rated on a 1 to 5 Likert-type scale referring to symptoms during first postnatal week. It has good reliability with total α is 0.88 (Pop et al., 2015).

2.3.2.3 Postnatal Stress

2.3.2.3.1 Acculturative Stress Index (ASI)

The Acculturative Stress Index (ASI) is a 36 items scale that measures acculturative stress in relation to social isolation, socioeconomic adjustment, sense of marginality, changes in family relationship, and concerns with children and intergenerational transitions within the family (Noh & Avison, 1996). It was rated on a 1 (never) to 4 (very often) Likert-type scale. The total score ranging from 0 to 144. Higher scores indicate severity of the stress. A study done in Canada show ASI had an excellent reliability with α value 0.93 (Dennis et al., 2018).

2.3.2.3.2 Childcare Stress Inventory (CSI)

The Childcare Stress Inventory (CSI) was developed by Cutrona (1983) and is designed to measure stressful postnatal events of parenthood, specifically related to childcare. The CSI contains 20 items. It was rated on a 0 (not upsetting) to 100 (extremely upsetting) scale. The total possible score ranges from 0 to 2,000. Higher score indicates a higher childcare stress. A study done by Nurbaeti et al. (2019) in Indonesia showed an adequate reliability with α value 0.74.

2.3.2.3.3 Parental Stress Questionnaire (PSQ)

The PSQ is a well validated clinical and research test instrument which assesses stress associated with parenting. A study done by Gray et al. (2013) was using Parenting Stress Index-Short Form (PSI-SF) which consists of 36 items. Higher scores indicate greater levels of parenting stress. The measure yields a Total Stress score indicating the overall level of parenting stress with three subscales: i) Parental Distress which measures the level of distress due to personal factors; ii) Parent-child Dysfunctional Interaction which reflects how the child meets the expectations of the parent; iii) Difficult Child which measures the behavioural characteristics of the child that make him/her either easy or difficult to manage. It has an excellent reliability with α value 0.91

A study conducted in German by Anding et al. (2016) also used PSI but had been modified according to the setting. It is known as German Parental Stress Questionnaire (GPSQ) which comprises of 38 items under four subscales which are parental stress, role restriction, social support, and relationship satisfaction.

Another study by Andersson & Hildingsson (2016) was using another modified PSI known as Swedish Parental Stress Questionnaire (SPSQ). It has a good reliability with α value 0.81. This tool contains 34 items divided into five subscales which are i) Incompetence focuses on feelings of inadequacy in the parents' role and emotions related to manage their children, and it concerns the experience of parenthood as difficult, ii) Role restriction includes barriers to activities and interests on the basis of their parents' responsibility, iii) Social Isolation describes social contacts outside the family, iv) Spouse Relationship Problems focuses on relation within the family and v) Health Problems contains questions about parental physical health with a focus on

health aspects related to parenthood, such as infections, physical fitness and fatigue. The items were assessed on Likert scales and rated from 1 to 5, where 5 indicates the highest level of parenting stress. It can be concluded that PSI had good to excellent reliabilities with Cronbach alpha values for these assessment tools were range from 0.81 – 0.91.

2.3.2.3.4 Hung Postpartum Stress Scale (HPSS)

The HPSS includes 62 Likert rated questions ranging from 1 (none) to 5 (always), which assess the feelings and thoughts of women after birth and the total score of the questions ranks from 62 to 310. The higher a woman's score is, the higher the psychological stress she is experiencing during her postnatal period. The scale includes three individual dimensions of stress during the postnatal period which are i) maternal role attainment, consisting of 32 questions, ii) negative body changes, with 13 questions and iii) social support, that includes 17 questions. A study conducted in Turkey by Uğurlu et al. (2012) and in Greece by Deltsidou et al. (2018) showed HPSS had an excellent reliability with α value 0.93 to 0.95.

2.3.2.3.5 Life Event Questionnaire – Modified (LEQ-M)

The Life Events Questionnaire (LEQ) measures degree of life stress including health status and relationship conditions. Norbeck (1984) added five items to the original 10-item LEQ to make it suitable for use in a postnatal context. The LEQ-modified contains 15 items with Likert responses from 0 (no effect) to 3 (great effect). The total score can therefore range from 0 to 45; a higher total score indicates greater life stress. A study done by Nurbaeti et al. (2019) in Indonesia showed a good reliability with α value 0.83.

2.3.2.3.6 Perceived Stress Scale (PSS)

The PSS was developed by Cohen et al. (1983) to assess the degree to which individuals experience stress in their daily lives. The PSS assesses current levels of experienced stress, feelings, and thoughts during the last month and how often they felt a certain way on a 5-point Likert scale (0 = never to 4 = very often). It has two types of subscales which

are negative subscale which intended to assess perceived distress and positive subscale which meant to measure the ability to cope with the stressors. There are two studies conducted in Switzerland and Canada each assessing psychometric properties of PSS in this review. It was presented with good reliabilities with α values 0.82 and 0.89 respectively (Benediktsson et al., 2017; Razurel et al., 2013).

2.3.2.4 Postnatal Anxiety

2.3.2.4.1 Edinburgh Postpartum Depression Scale (EPDS-3A)

The EPDS-3A is a subscale derived from the original EPDS (Cox et.al, 1987) to measure postnatal anxiety. It consists of 3 items from the original EPDS which are item 3,4, and 5. There are two studies which conducted in different countries – England and Israel, that measure EPDS-3A reliability. EPDS-3A presented poor to adequate reliability with α values ranging from 0.60 to 0.78 (Bina & Harrington, 2017; Martin & Redshaw, 2018).

2.3.2.4.2 Generalized Anxiety Disorder (GAD 7)

The GAD 7 is a 7 items scale develop by Spitzer et.al (2006) to screen Generalized Anxiety Disorder in primary care population. It was rated on 0 (not at all) to 3 (nearly every day) Likert-type scale. Total scores range from 0 to 21 with higher score indicates severity of anxiety. There are only a few researches using GAD 7 had been done in postnatal group and only two studies eligible in this review. This study was conducted in USA and Italy. It was presented with good reliability with α value 0.84 -0.85 (Bobevski et al., 2015; Spinoni et al., 2023).

2.3.2.4.3 Generalized Anxiety Disorder-Question-IV (GAD-Q-IV)

The GAD-Q-IV (Newman et al., 2002) is a 9 items scale that encompasses the entire clinical syndrome of Generalized Anxiety Disorder. It was developed due to the changes in the GAD criteria between the DSM–III–R and the DSM–IV TR. GAD-Q-IV had been used in one of the studies in postnatal mothers conducted in England. It shows a good reliability with α values range from 0.82 to 0.87 (Pierson et al., 2017).

2.3.2.4.4 Hopkins Symptoms Checklist (SCL-90R)

Hopkins Symptoms Checklist (SCL-90R) (Derogatis, 1992), evaluating the degree of distress experienced during the previous two weeks rated on 0 to 4 Likert-type scale (none=0; extreme=4). A study by Nieto et al. (2019) only used the anxiety subscale, which consists of 10 items and evaluates the symptoms and behaviours clinically associated with an extreme manifestation of anxiety such as restlessness, nervousness, tension and panic attacks. The reliability of SCL-90R anxiety subscale in this study is $\alpha=0.82$ (good reliability).

2.3.2.4.5 Postpartum Specific Anxiety Scale (PSAS)

The PSAS is a new assessment tool developed by Fallon et al. (2016). It consists of 51 items scale generated from interviews conducted with a group of postnatal women which then reviewed and refined by a diverse expert panel. This new scale is used to measure specific anxieties in postnatal mothers. The studies that were conducted in United Kingdom, India and Spain had presented an excellent reliability with α value range from 0.93 to 0.95 and an adequate test-retest reliability after few weeks which is 0.88 to 0.98. (Chandra & Smitha, 2023; Costas-Ramón et al., 2023)

2.3.2.4.6 State Trait Anxiety Inventory (STAI)

STAI is the most common assessment tool used to measure postnatal anxiety developed by Spielberger (1983). It consists of 2 scales which are i) STAI-S which measure anxiety state as a temporary condition which include subjective feelings of apprehension, tension, nervousness, worry, and activation of the autonomic nervous system and ii) STAI-T which measure anxiety as a general characteristic which include general states of calmness, confidence, and security. Each scale comprises of 20 questions and rated on 1 to 4 Likert type scale. Three studies were conducted in Canada, 1 in Germany, 1 in Switzerland and 1 in Spain presented STAI with adequate to excellent reliabilities with α value range from 0.70 (Spain) to 0.95 (Switzerland) (Bayrampour et al., 2014; Benediktsson et al., 2017; Costas-Ramón et al., 2023; Dennis et al., 2018; Matthies et al., 2017; Razurel et al., 2013).

2.3.2.4.7 Zung Anxiety Scale

The Zung Anxiety Scale (Zung, 1971) consists of 20 items which measure autonomic, motor, cognitive and other anxiety symptoms. It used 4-point Likert type scale: a little of the time, some of the time, good part of the time, and most of the time. A study conducted in Vietnam shows Zung Anxiety Scale had an adequate reliability which is $\alpha=0.76$ (Tran et al., 2011).

2.3.2.5 Postnatal Depression

2.3.2.5.1 Center for Epidemiological Studies Depression Scale (CES-D)

The CES-D scale assesses the symptoms of depression. It is a 20 items questionnaire which measure emotional, psychological and physical symptoms that occurred during the previous week. Responses vary between "rarely or never" to "most often or always". The overall score ranges from 0 to 60. Higher score indicates more common symptoms of depression. There were two studies conducted in Greece and Netherlands which used CES-D as an assessment tool to measure postnatal depression. It has an excellent reliabilities in both studies which range from 0.90 to 0.91 (Deltsidou et al., 2018; Walker et al., 2021).

2.3.2.5.2 Edinburgh Postpartum Depression Scale (EPDS)

In this review, 39 out of 56 assessment tools used to assess postnatal depression were EPDS. The study was conducted in various countries around the world including Africa, Australia, Brazil, Canada, China, Denmark, England, Ethiopia, France, Germany, Hungary, Indonesia, Iran, Ireland, Israel, Italy, Japan, Kenya, Malaysia, Nepal, Serbia, Spain, Switzerland, Taiwan, Thailand, United Kingdom, United States of America, as well as Vietnam. It is the most common and diverse assessment tools used to assess postnatal mental illnesses especially anxiety and/or depression.

There are two (2) version of EPDS to assess postnatal depression which are EPDS (original) and EPDS 7. The EPDS (original) was develop by Cox et. Al. (1987). It consists of 10 items that asked participants to rate how they felt during the previous 7 days. This assessment tool comprises three dimension which are anxiety (items 3, 4,

and 5), depression (items 6, 7, 8, 9, and 10), and anhedonia (items 1 and 2). Item 10 was used to assess suicidal ideation of postnatal mother. Response categories were scored 0, 1, 2, or 3 for each item according to increased severity of the symptoms. EPDS 7 is a shortened version of EPDS (original) which consist of 7 items (item 1,2,6,7,8,9, and 10). It still uses same scoring method with EPDS (original). The cut-off points for EPDS is varies from 4 to 13 depending on the number of items, study setting and population. From this review, EPDS presented a poor to excellent reliability with preponderance of evidence were range from 0.59 (Thailand) to 0.92 (Australia). A total of 2 poor, 11 adequate, 26 good, and 2 excellent reliabilities criteria were found in this review.

2.3.2.5.3 Patient Health Questionnaire (PHQ)

The PHQ was developed by Spitzer et al. (1999). The PHQ-9 consist of 9 questions regarding depression: 8 questions assess symptoms and 1 question assesses functional impairment. The questions are scored on a scale of 0 to 3. The PHQ-2 is the 2-item version utilizing only the first two questions of the PHQ-9. The two items include 'loss of interest' and 'low mood' for the past 2 weeks, scored by simple linear scoring using a threshold of 2 or higher. These items are adequate for the first step of assessing depression in primary care. In this review, the studies which were conducted in USA, Kenya and Mexico had presented an adequate to good reliabilities with Cronbach alpha values range from 0.73 (USA) to 0.85 (USA) (Bobevski et al., 2015; Coffman et al., 2020; Flynn et al., 2011; Green et al., 2018; Nieto et al., 2019).

2.3.2.5.4 Perinatal Depression Screening (PDEPS)

PDEPS is a 60-items new assessment tool which consist of EPDS, PHQ 9 and new items generated from the qualitative data of the focus group discussions. This tool was developed in Kenya by using Kiswahili language with the aim of developing more useful alternative for assessment which blends western psychiatric concepts and local idioms of distress. This new tool has adequate reliabilities which is 0.77 (Green et al., 2018).

2.3.2.5.5 Postpartum Depression Screening Scale (PDSS)

The PDSS is a 35-item Likert-type scale designed to measure 7 dimensions of postnatal depression: sleeping/eating disturbances, anxiety/insecurities, emotional lability, cognitive impairment, loss of self, guilt/shame, and contemplating harming oneself during the past 2 weeks. The scale was based on qualitative data collected by Beck on postnatal depression symptoms among postnatal mothers. Items are scored on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). It also has a shortened version which is PDSS 21 and PDSS 7 containing either 21 or 7 items out of 35 from the original version. Current review on eight (8) studies conducted in Portugal, Brazil, China, Mexico and USA shows reliabilities for PDSS was adequate to excellent with α values 0.78 (Brazil) to 0.96 (Portugal).

2.3.2.5.6 Beck Depression Inventory - II (BDI-II)

BDI- II is a 21-item Likert-type scale designed and revised to fit with DSM-IV characteristic and was used to assess general aspect of depression. It consists of two factors which are cognitive-affective and somatic-motivational factors. Each response was scored between 0 to 3 with higher score indicates severity of the symptoms. In this review, only 1 study was conducted in Spain by using BDI as an assessment tool to measure depression. It had a good reliability which is $\alpha=0.87$ (Costas-Ramón et al., 2023)

2.3.2.6 Postnatal Depression and Anxiety

2.3.2.6.1 Edinburgh Postpartum Depression Scale (EPDS)

As mention in 2.3.2.3.1 and 2.3.2.4.2, EPDS can been used to measure postnatal anxiety or postnatal depression. There are few studies conducted in Australia, Hungary, Israel, and England had used EPDS to measure both postnatal anxiety and depression. These studies show an adequate to good reliabilities with α value range from 0.75 (Hungary) to 0.87 (Australia). Thus, this tool was considered to be used in assessing both postnatal anxiety and depression.

2.3.2.6.2 Hospital Anxiety and Depression Scale (HADS)

The HADS is a validated self-assessment tool consists of 14 items subdivided into an anxiety and a depression subscale (Zigmond and Snaith, 1983). The instrument has been used in hospitals and in community and in a survey during postnatal period. HADS items are scored on a 4-point scale, with zero points for the most positive and three for the most negative answer, leading to a score range from 0 to 42. Higher scores correspond to a higher probability of anxiety and depressive disorder. A study done by Grylka-Baeschlin et al. (2015) conducted in Germany, HADS shows and adequate internal consistency during first week after childbirth which is 0.75 for the anxiety subscale and 0.73 for the depression subscale. However, seven weeks after childbirth, internal consistency for anxiety subscale almost the same with $\alpha = 0.76$ but declining to poor criteria with $\alpha = 0.65$ for the depression subscale.

2.3.2.6.3 Patient Health Questionnaire 4 (PHQ 4)

As mention in 2.3.2.5.3, PHQ-2 and PHQ-9 were used to measure postnatal depression. However, PHQ-4 was used to measure postnatal depression and anxiety. It is a brief tool consists of four (4) items combining 2 items from PHQ-2 to measure depression and 2 items from GAD-2 to measure anxiety. Each item was scored between 0 to 3 with cut-off point more than 3 for each dimension indicating positive symptoms. There was only 1 study in this review conducted in USA and had good reliability with $\alpha = 0.85$ (Feinberg et al., 2022).

2.3.2.7 Postnatal Psychosis

2.3.2.7.1 Launay Slade Hallucination Scale (LSHS)

The LSHS is a scale which measures hallucination consist of 12 items with 4 subscales; vivid thoughts, vivid day dreams, auditory hallucinations and visual hallucinations. The original version uses binary scale with 0 = False and 1 = True, while the revised version uses a 5-point Likert scale from 0 (certainly applies to me) to 4 (certainly does not apply to me). Total score can be ranged from 0 to 48 with higher scores indicate worse hallucination. There are only 2 studies which utilize this scale and both of them were conducted in United Kingdom. The reliabilities presented by this tool is poor to

adequate with α value range from 0.66 to 0.72 (Holt et al., 2018; Mannion & Slade, 2014).

2.3.2.7.2 *Peter Delusion Inventory (PDI)*

The PDI is used to measure delusional ideation by using 21 binary items. Total scores can be ranged from 0 to 21 with higher scores indicate worse delusions. It asks regarding on participants' experiences during their lifetime, specifically during postnatal period in this review. There are only 2 studies which utilize this scale and both of them were conducted in United Kingdom. The reliabilities presented by this tool is adequate with $\alpha = 0.73$ in both studies (Holt et al., 2018; Mannion & Slade, 2014).

2.3.2.8 *Postnatal Psychological Disorder*

2.3.2.8.1 *Depression, Anxiety, Stress Scale (DASS)*

DASS (Lovibond & Lovibond 1995) is a 21-items scale which subdivide into three subclasses of seven questions, which assess depression, anxiety and stress over the previous week. It was rated on a 0 to 3 Likert-type scale ranging from 0 (did not apply to me at all), 1 (for me to a certain extent, or for some time), 2 (for me to a particular degree, or quite some time) to 3 (It's for me to a great extent or for most of the time) referring to the feeling and thoughts of women during postnatal period. Higher score indicates severity of depression, anxiety and stress. There were four studies conducted in Australia, India, Greece and Iran that used DASS as an assessment tool for screening of postnatal mental illness and presented adequate to excellent reliabilities. The α values of DASS for depression subscale are 0.86 – 0.93, for anxiety subscale are 0.77 – 0.90 and for stress subscale are 0.76 – 0.91 (Clout & Brown, 2015; Deltsidou et al., 2018; Meena et al., 2016; Shokuhi et al., 2020).

2.3.2.8.2 *General Health Questionnaire (GHQ)*

General Health Questionnaire (GHQ 12) has been used as an assessment tool to measure common psychological disorders. The GHQ 12 consists of 12 items rated on a 4-point scale. Scores range from 0 to 12 using a bi-modal (0-0-1-1) scoring method. The higher

the score, the more distressed the respondent. The usage of GHQ 12 has been validated for psychiatric disorder in perinatal period. In this review, the studies that was conducted in Vietnam, United Kingdom and Hong Kong presented a poor to excellent internal consistency with $\alpha = 0.64$ (Vietnam) - $\alpha = 0.92$ (United Kingdom) (Ngai & Ngu, 2015; Spiteri et al., 2013; Tran et al., 2011).

2.3.2.8.3 Kessler Psychological Distress Scale (K10/6)

The Kessler Psychological Distress Scale (Kessler et al., 2003) is a short tool that was used to measure psychological disorder. This scale is a self-report measure which involves 10 questions (K10) or 6 questions out of 10 (K6) that ask participants' experience on the frequency of symptoms in the last 30 days by using a 5-point Likert-type response scale; None of the time (1); A little of the time (2); Some of the time (3); Most of the time (4), and All of the time (5). Hence scores may range from 10 to 50. A score under 20 indicates the respondent is likely to be well, a score between 20 to 24 indicate mild mental illness, a score between 25 to 29 indicates moderate mental illness, and a score over 30 indicates a severe mental illness. In this review, a study conducted in Ethiopia use both K10 and K6 to assess common postnatal mental illness and presented a good to excellent reliabilities with α values range from 0.86 – 0.90 (Tesfaye et al., 2010).

2.3.2.8.4 Postpartum Distress Measure (PDM) Scale

PDM was develop and validated by Allison et.al. (2011). This scale measures the symptoms of postnatal distress. This is the first postnatal assessment tool, which is specific for simultaneous screening of anxiety and depression symptoms. With this scale, symptoms of generalized distress and obsessive-compulsive disorder are assessed reliably. The use of this PDM Scale increases the possibility of diagnosing any significant clinical symptoms, including clinical history of depression, generalized anxiety disorder, and obsessive-compulsive disorder. A study conducted in Iran shows PDM scale has an adequate internal consistency which is 0.75

In summary, Table 2.6 presents the types of assessment tools use to screen PMI, in which country and language it was conducted, the reliabilities of each assessment tools as well as number of articles used the stated assessment tools.

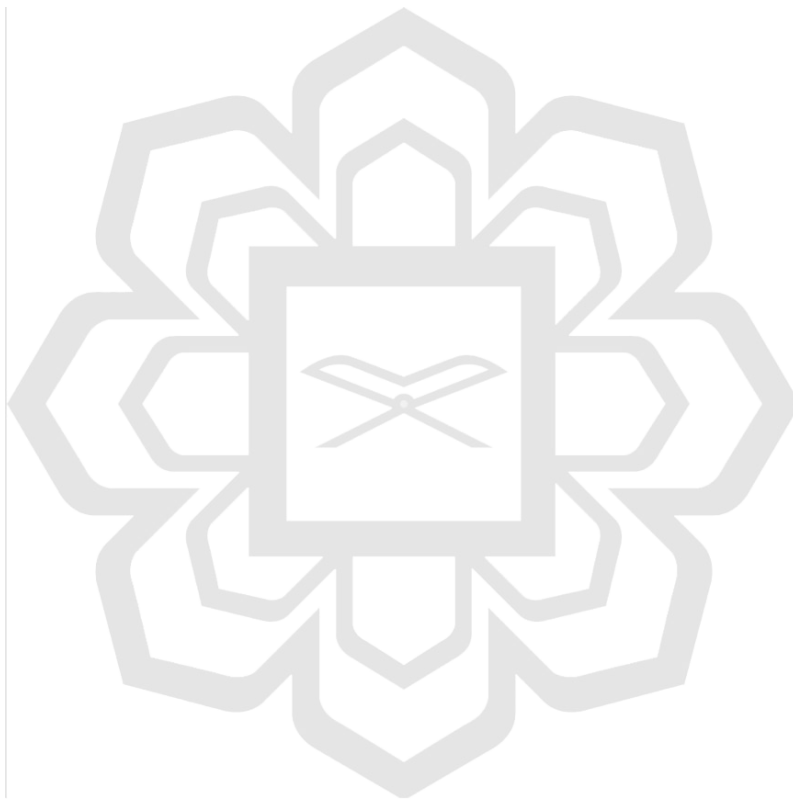


Table 2.6 Summary on Types of Assessment Tools Used to Assess Postnatal Mental Illness

INSTRUMENT	AUTHOR (YEAR)		COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
POSTNATAL BLUES								2
Daily Experiences Questionnaire	Buttner (2012)	et al.	USA	English	Cronbach's Alpha (α)	0.88 – 0.94	Good – Excellent	1
Maternity Blues Scale	Pop et al.	(2015)	Netherland	Dutch	(α)	0.76 – 0.87	Adequate – Good	1
POSTNATAL STRESS								11
Acculturative Stress Index	Dennis (2018)	et al.	Canada	English	(α)	0.93	Excellent	1
Childcare Stress Inventory	Nurbaeti (2019)	et al.	Indonesia	Indonesian	(α)	0.74	Adequate	1
Parenting Stress Index (PSI) -Short Form	Gray et al.	(2012)	Australia	English	(α)	0.91	Excellent	1

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
German Parental Stress Questionnaire (GPSQ) – Modified PSI	Anding et al. (2016)	Germany	German	(α)	0.85	Good	2
Swedish Parental Stress Questionnaire (SPSQ) - Modified PSI	Andersson & Hildingsson (2016)	Sweden	Swedish	(α)	0.81	Good	
Hung Postpartum Stress Scale	Uğurlu et al. (2012)	Turkey	Turkish	(α)	0.93	Excellent	2
	Deltsidou et al. (2018)	Greece	Greek	(α)	0.95	Excellent	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Life Event Questionnaire- Modified	Nurbaeti et al. (2019)	Indonesia	Indonesian	(α)	0.83	Good	1
Perceived Stress Scale (PSS)	Razurel et al. (2013)	Switzerland	French	(α)	0.86	Good	2
	Benediktsson et al. (2017)	Canada	English	(α)	0.88 – 0.89	Good	
Postnatal Perceived Stress Inventory	Razurel et al. (2013)	Switzerland	French	(α)	0.82	Good	1

POSTNATAL ANXIETY							16
Edinburgh Postnatal Depression Scale (EPDS)	Bina & Harrington (2017)	Israel	Hebrew	(α)	0.60	Poor	2
	Martin & Redshaw (2018)	England	English	(α)	0.74 – 0.78	Adequate	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Generalised Anxiety Disorder 7 (GAD 7)	Bobevski et al. (2015)	USA	English	(α)	0.85	Good	2
	Spinoni et al. (2023)	Italy	Italian	(α)	0.84	Good	
Generalised Anxiety Disorder Questionnaire IV	Pierson et al. (2017)	England	English	(α)	0.82 – 0.87	Good	1
Hopkins Symptoms Checklist-90-Revised	Nieto et al. (2019)	Mexico	Not mention	(α)	0.82	Good	1
Postpartum Specific Anxiety Scale (PSAS)	Fallon et al. (2016)	UK	English	(α) Test - Retest	0.96 0.88	Excellent	2
	Chandra & Smitha (2023)	India	Not mention	Test - Retest	0.98	Adequate	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Postpartum Specific Anxiety Scale (PSAS)	Costas-Ramón et al. (2023)	Spain	Spanish	(α)	0.93	Excellent	1
State - Trait Anxiety Inventory (STAI)	Razurel et al. (2013)	Switzerland	French	(α)	0.95	Excellent	6
	Bayrampour et al. (2014)	Canada	English	(α)	0.84 – 0.93	Good – Excellent	
	Benediktsson et al. (2017)	Canada	English	(α)	0.93	Excellent	
	Matthies et al., (2017)	Germany	German	(α)	0.91	Excellent	
	Dennis et al. (2018)	Canada	Not mention	(α)	0.92	Excellent	
	Costas-Ramón et al. (2023)	Spain	Spanish	(α)	0.70	Adequate	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Zung Anxiety Scale	Tran et al. (2011)	Vietnam	Vietnamese	(α)	0.76	Adequate	1

POSTNATAL DEPRESSION							56
Centre for Epidemiological Studies Depression scale (CES-D)	Deltsidou et al. (2018)	Greece	Greek	(α)	0.91	Excellent	2
	Walker et al. (2021)	Netherlands	Dutch	(α)	0.90	Excellent	
Edinburgh Postnatal Depression Scale (EPDS)	Chibanda et al. (2010)	Africa	Shona	(α)	0.87	Good	2
	Lau et al. (2010)	China	Chinese	(α) Test - Retest	0.78 0.90	Adequate Excellent	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Edinburgh Postnatal Depression (EPDS) Scale	Tesfaye et al. (2010)	Ethiopia	Amharic	(α)	0.71	Adequate	9
	Banti et al. (2011)	Italy	Italian	(α)	0.75	Adequate	
	Flynn et al. (2011)	USA	English	(α)	0.84	Good	
	Leahy-Warren et al. (2011)	Ireland	English	(α)	0.88	Good	
	Tran et al. (2011)	Vietnam	Vietnamese	(α)	0.75	Adequate	
	Gray et al. (2012)	Australia	English	(α)	0.87	Good	
	Kuo et al. (2012)	Taiwan	Chinese	(α)	0.82	Good	
	Razurel et al. (2013)	Switzerland	French	(α)	0.72	Adequate	
	Bayrampour et al. (2014)	Canada	English	(α)	0.87	Good	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Edinburgh Postnatal Depression Scale (EPDS)	Gaillard et al., (2014)	France	French	(α)	0.85	Good	7
	Clout & Brown (2015)	Australia	English	(α)	0.89	Good	
	Figueiredo et al. (2015)	Brazil	Portuguese	(α)	0.86	Good	
	Giallo et al. (2015)	Australia	English	(α)	0.89	Good	
	Kernot et al. (2015)	Australia	English	Test -Retest	0.92	Excellent	
	Odalovic et al. (2015)	Serbia	Serbian	(α)	0.83	Good	
	Anding et al. (2016)	Germany	German	(α)	0.85	Good	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Edinburgh Postnatal Depression (EPDS)	Iwata et al. (2016)	Japan	Japanese	(α)	0.81 – 0.82	Good	8
	Bina & Harrington (2017)	Israel	Hebrew	(α)	0.71	Adequate	
	Gollan et al. (2017)	USA	English	(α)	0.87	Good	
	Ing et al. (2017)	Thailand	Burmese	(α)	0.82	Good	
	Ing et al. (2017)	Thailand	Karen	(α)	0.59	Poor	
	Kozinszky et al. (2017)	Hungary	Hungarian	(α)	0.82	Good	
	Matthies et al. (2017)	Germany	German	(α)	0.86	Good	
	Pierson et al. (2017)	England	English	(α)	0.87 – 0.91	Good – Excellent	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Edinburgh Postnatal Depression (EPDS) Scale	Bhusal & Bhandari (2018)	Nepal	Nepalese	(α)	0.74	Adequate	7
	Delavari et al., (2018)	Iran	Iran	(α)	0.77	Adequate	
	Dennis et al. (2017)	Canada	English	(α)	0.78	Adequate	
	Dennis et al. (2017)	UK	English	(α)	0.86	Good	
	Green et al. (2018)	Kenya	Kiswahili	(α)	0.78	Adequate	
	Martin & Redshaw (2018)	England	English	(α)	0.80 - 0.82	Good	
	Smith-Nielsen et al. (2018)	Denmark	Danish	(α)	0.82	Good	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Edinburgh Postnatal Depression Scale (EPDS)	Nurbaeti et al. (2019)	Indonesia	Indonesian	(α)	0.80	Good	6
	Nursazila Asikin et al. (2019)	Malaysia	Malay	(α)	0.62 – 0.78	Poor – Adequate	
	Shwartz et al. (2019)	Israel	Arabic / Hebrew	(α)	0.82	Good	
	Coffman et al. (2020)	USA	English	(α)	0.89	Good	
	Míguez & Vázquez (2023)	Spain	Spanish	(α)	0.86 – 0.88	Good	
	Tsai et al. (2023)	Taiwan	Chinese	(α)	0.83	Good	
Patients Health Questionnaire 9 (PHQ 9)	Flynn et al. (2011)	USA	English	(α)	0.85	Good	2
	Bobevski et al. (2015)	USA	English	(α)	0.73	Adequate	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Patients Health Questionnaire 9 (PHQ 9)	Green et al. (2018)	Kenya	Kiswahili	(α)	0.81	Good	3
	Nieto et al. (2019)	Mexico	Not mention	(α)	0.85	Good	
	Coffman et al. (2020)	USA	English	(α)	0.80	Good	
Perinatal Depression Screening (PDEPS)	Green et al. (2018)	Kenya	Kiswahili	(α)	0.77	Adequate	1
Postpartum Depression Screening Scale (PDSS)	Pereira et al. (2010)	Portugal	Portuguese	(α)	0.96	Excellent	4
	Zubaran et al. (2010)	Brazil	Portuguese	(α)	0.78	Good	
	Li et al. (2011)	China	Chinese	(α)	0.96	Excellent	
	Lara et al. (2013)	Mexico	Spanish	(α)	0.96	Excellent	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
Postpartum Depression Screening Scale (PDSS)	Lara et al. (2013)	Mexico	Spanish	(α)	0.77 – 0.80	Adequate – Good	4
	Pereira et al. (2013)	Portugal	Portuguese	(α)	0.85	Good	
	Pereira et al. (2013)	Portugal	Portuguese	(α)	0.92	Excellent	
	Blucker et al. (2014)	USA	English	(α)	0.95	Excellent	
Beck Depression Inventory II (BDI- II)	Costas-Ramón et al. (2023)	Spain	Spanish	(α)	0.87	Good	1

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
POSTNATAL DEPRESSION AND ANXIETY							6
Edinburgh Postnatal Depression Scale (EPDS)	Cunningham et al. (2014)	Australia	English	(α)	0.87	Good	4
	Toirreki et al. (2014)	Hungary	Hungarian	(α)	0.75	Adequate	
	Bina & Harrington (2017)	Israel	Hebrew	(α)	0.76	Adequate	
	Martin & Redshaw (2018)	England	English	(α)	0.84 – 0.85	Good	
Hospital Anxiety and Depression Scale	Grylka-Baeschlin et al. (2015)	Germany	German	(α)	A: 0.75 – 0.76	Adequate	1
					D: 0.65 – 0.75	Poor - Adequate	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
PHQ-4	Feinberg et al. (2022)	USA	English / Spanish	(α)	0.85	Good	1

POSTNATAL PSYCHOSIS							4
Launay Slade Hallucination Scale	Mannion & Slade (2014)	UK	English	(α)	0.72	Adequate	2
	Holt et al. (2018)	UK	English	(α)	0.66	Poor	
Peters Delusion Inventory	Mannion & Slade (2014)	UK	English	(α)	0.73	Adequate	2
	Holt et al. (2018)	UK	English	(α)	0.73	Adequate	

INSTRUMENT	AUTHOR (YEAR)		COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
POSTNATAL PSYCHOLOGICAL DISORDER								10
Depression Anxiety Stress Scale (DASS)	Clout & Brown (2015)		Australia	English	(α)	D: 0.86 A: 0.79 S: 0.76	D: Good A: Adequate S: Adequate	4
	Meena et al. (2016)		India	Not mention	(α)	D: 0.91 A: 0.80 S: 0.90	D: Excellent A: Good S: Excellent	
	Deltsidou et al. (2018)		Greece	Greek	(α)	D: 0.91 A: 0.77 S: 0.82	D: Excellent A: Adequate S: Good	
	Shokuhi et al. (2020)		Iran	Persian	(α)	D: 0.93 A: 0.90 S: 0.91	D: Excellent A: Excellent S: Excellent	

INSTRUMENT	AUTHOR (YEAR)		COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO OF ARTICLE
General Health Questionnaire (GHQ)	Tran et al. (2011)		Vietnam	Vietnamese	(α)	0.64	Poor	3
	Spiteri (2013)	et al.	United Kingdom	Maltese	(α) Test – Retest	0.92 0.80	Excellent Good	
	Ngai & (2015)	Ngu	Hong Kong	Chinese	(α)	0.74 – 0.83	Adequate – Good	
Kessler	Tesfaye (2010)	et al.	Ethiopia	Amharic	(α)	0.90	Excellent	2
	Tesfaye (2010)	et al.	Ethiopia	Amharic	(α)	0.86	Good	
Postpartum Distress Measure Scale	Shokuhi (2020)	et al.	Iran	Persian	(α)	0.75	Adequate	1

2.3.3 Discussion

2.3.3.1 Postnatal Blues

In this review, only two articles discussed the assessment tools to screen postnatal blues; DEQ and MBS, and both of them were conducted in western countries. DEQ and MBS had measure positive affect (e.g.: happy, proud, confident, calm, enthusiastic) and negative affect (e.g.: anxious, depress, tired, irritable, unable to concentrate) experienced by the mother during postnatal blues. Although both assessment tools had an adequate to excellent reliability, it remains inconclusive if this tool is appropriate for Malaysian mothers as it has not yet been tested. Previous study using this assessment tool reported that some adjustment is required to make it suitable for their study setting.

2.3.3.2 Postnatal Stress

A total of 11 studies were found assessing postnatal stress with the highest mode of tools are Parenteral Stress Questionnaire (PSQ) with 4 articles, followed by Hung Postpartum Stress Scale (HPSS) and Perceived Stress Scale (PSS) with 2 articles each. In comparison of these three most common tools, HPSS shows the highest reliabilities with excellent Cronbach's alpha range (0.93 – 0.95). Both PSQ and HPSS had subscale on i) maternal role attainment, ii) social support/relationship satisfaction and iii) physical health status. While PSS had measure negative emotion and coping capability generally. Based on current assessment tools used to measure postnatal stress in this review, it can be concluded that these dimensions might be important when developing an assessment tool to measure postnatal stress later on.

2.3.3.3 Postnatal Anxiety

Pertaining to postnatal anxiety, 11 studies fulfilled the inclusion criteria. 9 out of 11 were conducted in western countries and 2 in the eastern countries. The reliabilities criteria of these assessment tools were adequate to excellent in western countries compared to poor to adequate in the eastern countries. The most common tool used to measure postnatal anxiety was STAI with 6 articles. All studies were conducted in western countries with good to excellent reliability. The main subscale in STAI are

STAI-S which measures anxiety state as a temporary condition of a subjective feelings and STAI-T which measure anxiety as a general characteristic.

2.3.3.4 Postnatal Depression

Postnatal depression is the most common types of PMI worldwide. A total of 56 studies were included in this review and 39 of them used EPDS to measure postnatal depression. From this figure, 4 out of 6 used it to measure both postnatal anxiety and postnatal depression. It is the most diverse assessment tools used among postnatal mothers with reliability criteria ranging from poor to excellent. In this review western countries showed adequate to excellent reliability but in eastern countries it shows poor to good reliability. The EPDS has 3 main subscales or dimensions which are anhedonia, anxiety and depression with one question on suicidal ideation/self-harming. Second most popular assessment tool use for postnatal depression is PDSS. PDSS also has same subscales that had been included in the EPDS but using different points Likert scale and few more subscales. PDSS shows more studies with excellent reliability criteria compared to EPDS. The third most common assessment tool used is PHQ 9. It only measures symptoms of depression with a question on self-harming possibility and it was designed for general use only rather than specifically for postpartum population. In short, the same dimensions found in the EPDS, PDSS and PHQ 9 can be considered as important when developing an assessment tool to measure postnatal depression.

In Malaysia, the most recent study done by Nursazila Asikin et al. (2019) found that the internal consistency of EPDS (with cut-off point 12) was adequate during the first month of postnatal period (group 1) with α value of 0.78, however it was declining to 0.62 during the period of 1 to 3 month postnatally (group 2). Nevertheless, when item 2, a question asking about looking forward with enjoyment of things was deleted from the tools, internal consistency of group 1 increase to 0.85 (good) and group 2 to 0.71 (adequate). This is the only study found conducted in Malaysia in this review and the finding would be considered when developing an assessment tool appropriate to the Malaysian mothers.

2.3.3.5 Postnatal Psychosis

The only study found to measure psychotic-like experience (PLE) for postnatal psychosis was conducted by Holt et al. (2018) in United Kingdom. It had 2 assessment tools which are Launay Slade Hallucination Scale (LSHS) and Peters Delusion Inventory (PDI) which measure characteristics of psychotic disorder. However, LSHS has poor reliability criteria and PDI had adequate. It was not used in any Malaysian setting yet but these items might be needed to measure postnatal psychosis which is one of the postnatal mental illnesses.

2.3.3.6 Postnatal Psychological Disorder

This review found six types of assessment tools that had been used to measure multi-domain of postnatal psychological which are DASS, GHQ 12, Kessler, EPDS, HADS and a new scale known as PDMS. These types of assessment tools aim to measure common postnatal mental illnesses including postnatal stress, postnatal anxiety and/or postnatal depression. The most common tool use is DASS and EPDS (4 each out of 16 studies). It presents an adequate to excellent reliability criteria in both western and eastern countries. It had three main subscale which are stress, anxiety and depression.

As mention in the findings and discussion section of assessment tools used to measure for PMI (see 2.3.2 and 2.3.3), most of the tools were measuring specific domain and some were able to measure multi-domain. Each domain had few dimensions which generate relevant items for the assessment tool. Table 2.7 shows a summary on domain, dimensions and items extracted from reviewed assessment tools used to assess PMI to which need to be considered when developing an assessment tool appropriate to the Malaysian mothers

Table 2.7 Summary on Domain, Dimensions and Items from Reviewed Assessment Tools Used to Assess PMI

Single Domain	No. of Articles	Assessment Tool	Dimension	Items
Postnatal Blues	2	MBS (1)	Positive Affect	Proud, happy, confident, calm, enthusiastic
		DEQ (1)	Negative Affect	Anxious, depress, tired, irritable, unable to concentrate
Postnatal Stress	11	PSQ (4)	Maternal Role Attainment	Child demand, task/chores, childcare, decision, enjoy, responsibility, happy
		HPSS (2)	Social Support / Relationship satisfaction	Lonely/isolated, conflict, safe, protected, family/spouse support on childcare/chores, financial, marital relationship
		PSS (2)		
		ASI (1)	Physical health status	Body weight, intercourse problem, skin, sleep deprivation, fatigues, breastfeeding problem, body soreness
		CSI (1)		
		LEQ (1)	Negative Emotion	Upset, nervous, stress, irritable, angry, tense
			Coping mechanism	Able to cope, goal
Postnatal Anxiety	16	STAI (6)	Feeling	Apprehension, tension, nervous, worry, calmness, confidence, panic, security

		EPDS-3A (2) GAD (3) SCL-90R (1) PSAS (3) ZAS (1)	Clinical characteristic	Trembling, palpitation, restless
Postnatal Depression	4	CES-D (2) PDEPS (1) BDI-II (1)	Depression	Depress mood, sleep disruption, fatigue, change of appetite, worthlessness, hopeless
Postnatal Psychosis	4	LSHS (2) PDI (2)	Hallucination Delusion	Vivid daydream, vivid thought, auditory/visual hallucination Reading mind, persecuted, conspiracy, speciality, grandiose, God, other beings

Multi-Domain	No. of Articles	Assessment Tool	Dimension	Items
Postnatal Stress	67	EPDS (43)	Anhedonia	Loss of interest, loss of excitement
		PDSS (8)	Anxiety	Anxious, worry, tense, panic, restless, change in concentration
Postnatal Anxiety		PHQ-9 (5)	Depression	Depress mood, sleep disruption, fatigue, change of appetite, worthlessness, hopeless
		DASS (4)		
Postnatal Depression		GHQ-12 (3)	Suicidal ideation	Suicide thought, self-harm
		K10 (2)		
		HADS (1)		
		PDMS (1)		

2.3.4 Conclusion

A wide variety of assessment tools had been developed and tested to examine common PMI. However, some of them were modified based on the objective of the study, population and its' setting. It implies that the assessment tools were locally adapted to improved its reliability and validity. According to Ali et al. (2016) local validation should be conducted wherever possible to ensure all questions are correctly understood and for better understanding of expression and experience, allowing for local idioms to be incorporated into the assessment tools.

Based on this review, EPDS is the most common assessment tool used to measure multi-domain PMI covering for postnatal depression and postnatal anxiety including in Malaysia. Nevertheless, it cannot be considered as an appropriate assessment tool to measure PMI in Malaysian population as it has poor internal consistency among postnatal mothers at certain point of time. Although DASS had presented an adequate to excellent reliability in both eastern and western countries, it was not tested in postnatal population of Malaysian mothers. Thus, it is considered unreliable till proven otherwise. Furthermore, both EPDS and DASS lacks an item related to fatigue, appetite disturbance and decision making which is one of the characteristics of depressive mood disorder.

The rationale behind the need for development of the assessment tool was due to the fact that existing tool such as EPDS, PDSS, PHQ 9 and DASS did not incorporate the element of baby harming or infanticide. This could be a serious omission, since a positive score on this item might indicate postnatal psychosis, which is a psychiatric emergency. Furthermore, current assessment tool use in Malaysia only focus on the postnatal depression whilst postnatal anxiety and stress has a high comorbidity with depression. A comprehensive assessment tool is required to screen PMI among postnatal mothers and not only specific to postnatal depression.

2.4 HEALTHCARE PRACTITIONERS' AND WOMEN'S VIEWS ON POSTNATAL MENTAL ILLNESS

As mentioned in chapter 1, HCPs' views on PMI are important for early detection and management. Similarly, women's views and experience of PMI can be the key features

to determine how does women conceptualise their postnatal mental illness. Thus, their knowledge and perceptions need to be included when developing an appropriate tool for assessing PMI in Malaysian postnatal mothers which is one of the objectives of this research.

Previously, a qualitative synthesis consist of 15 articles by Arifin et al. (2019) found that HCPs' perceptions and understanding of PMI were differ from one and another. However, they usually described PMI based on the sign and symptoms of the disorder such as sadness, lack of interest and weight loss. Some of them discussed it based on the impact of the women's, child's and family's wellbeing and ability of functioning such as unable to fulfil maternal duties, inflicting harm to others or self, or children's developmental problems. Despite the difference in expressing their understanding, majority of them agreed that PMI was caused by the postnatal mothers' experiences and social circumstances.

On the other hand, Coates et al. (2014) had done a qualitative study on women's experience on PMI and found that women usually explained their emotional status by relating it with their maternal role and psychological process such as feeling overwhelmed, guilt, avoidance, detachment and lack of competence at mothering. Another review consist of 27 articles was conducted by Arifin et al. (2020) among postnatal mothers across culture to understand their point of view on postnatal depression. It was found that women usually described postnatal depression based on the abnormal changes in themselves, sadness and oversensitive. They link these experiences with emotional difficulties, feeling guilty, anxious, and self-blaming. They also believed that social circumstances and experiences were contributing to their conditions such as Asian women had regards their specific cultural and traditional practices may cause PMI (Arifin et al., 2020).

Nevertheless, the review found that the HCPs' experience in caring of postnatal mothers were not entirely different across the countries and cultures. A study by Al-abri et al. (2023), had mentioned that HCPs identify PMI based on their observational skills. They had described that the patient usually feeling depress/sad, crying without reason, self-isolating and neglecting themselves and the baby. They also had a lack of interest in daily activities, sleep deprivation, low energy or concentration and changes of appetite and in weight. In addition, they also have somatic symptoms such as shortness

of breath, abdominal pain and fatigue. Even though numbers of studies and reviews have been explored pertaining to the postnatal mental illness, and yet majority of them from postnatal mothers' point of view and somewhat lacking from the perspective of HCPs. Henceforth, this study was aimed to address this issue.

2.5 CURRENT PRACTICE ON ASSESSMENT OF POSTNATAL MENTAL ILLNESS IN MALAYSIA

Malaysia is a multi-ethnic country located in Southeast Asia. It has an estimated total population of 32.7 million with 3.0 million is non-citizens. Out of the 29.7 million Citizens, the composition of Bumiputera is (69.6%), Chinese (22.6%) Indian (6.9%) and others (1.0%) (Department of Statistics Malaysia, 2020). Therefore, Malaysia has a wide-range of cultural and ethnic background which had differences, as well as similarities in expressing and understanding of PMI. These should be acknowledged as it may portray the appropriate questions that need to be included in the assessment tools to assess PMI among postnatal mothers in Malaysia.

In 2019, Ministry of Health (MOH) Malaysia had issued an updated version of Clinical Practice Guideline (CPG) on management of Major Depressive Disorder (MDD) which include a guideline of MDD in perinatal women. In this CPG, it is recommended to use brief assessment tools such as PHQ-2 or Whooley Questions for screening. If there is positive response to the brief assessment tools, Edinburgh Postnatal Depression Scale (EPDS) should be used for further assessment. However, there are no specific policy on assessment of other types of PMI.

Although an updated CPG had been issued to improve promotion of mental health among postnatal mothers, it is not routinely applied within the maternal and child health (MCH) clinics. Based on the observation, DASS 21 had been used as one of the assessment tools to assess PMI in MCH clinics located in Terengganu. If the level of depression, anxiety or stress is mild, the postnatal mother will be assessed again in the next follow up (within 2 weeks to 1 month). However, if it shows moderate level and above, the postnatal mother will be referred to Medical Officer or Family Medicine Specialist for further management. Therefore, few potential mechanisms were found in addressing PMI within current healthcare settings. Thus, this issue was counted as one of the objectives to be explored in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the justification for choosing the adopted methods to meet the research objectives. The rationale of adopting qualitative approach and details of research design, research methods, study setting, and sampling strategies were explained. This is followed by the explanation of participants' recruitment, data collection and data analysis process. Lastly, strategies to obtain rigour and trustworthiness of the research as well as ethical consideration will be provided.

3.2 APPROACH OF THE STUDY

3.2.1 Development of Assessment Tool

There are variety of interchangeable terms of assessment tools have been used in healthcare setting including rating scale, inventory, instrument, questionnaire or screening tool. However, the main purpose of this item is to assess and measure behaviours, attitudes, experiences, and hypothetical scenarios which are expected to exist but cannot be assess directly. DeVellis, (2012) had broadly defined it as “a collection of items combined into a composite score and intended to reveal levels of theoretical variables not readily observable by direct means”. In this study, the researcher used “assessment tool” to define a structured questions design to collect the data or information from the targeted group required for a study, which can give a measurement to assess postnatal mental illness in postnatal mother in a form of a scale (Zainudin, 2013).

Boateng et al. (2018) had created a primer for best practice of developing and validating assessment tool for health, social and behavioural research. This primer had described a thorough process of the development either to facilitate a new tool or to improve the existing one. The process of assessment tool development is divided into three phases which are i) item development ii) scale development and iii) scale evaluation. These phases are further divided into nine steps as shown in Figure 3.1:

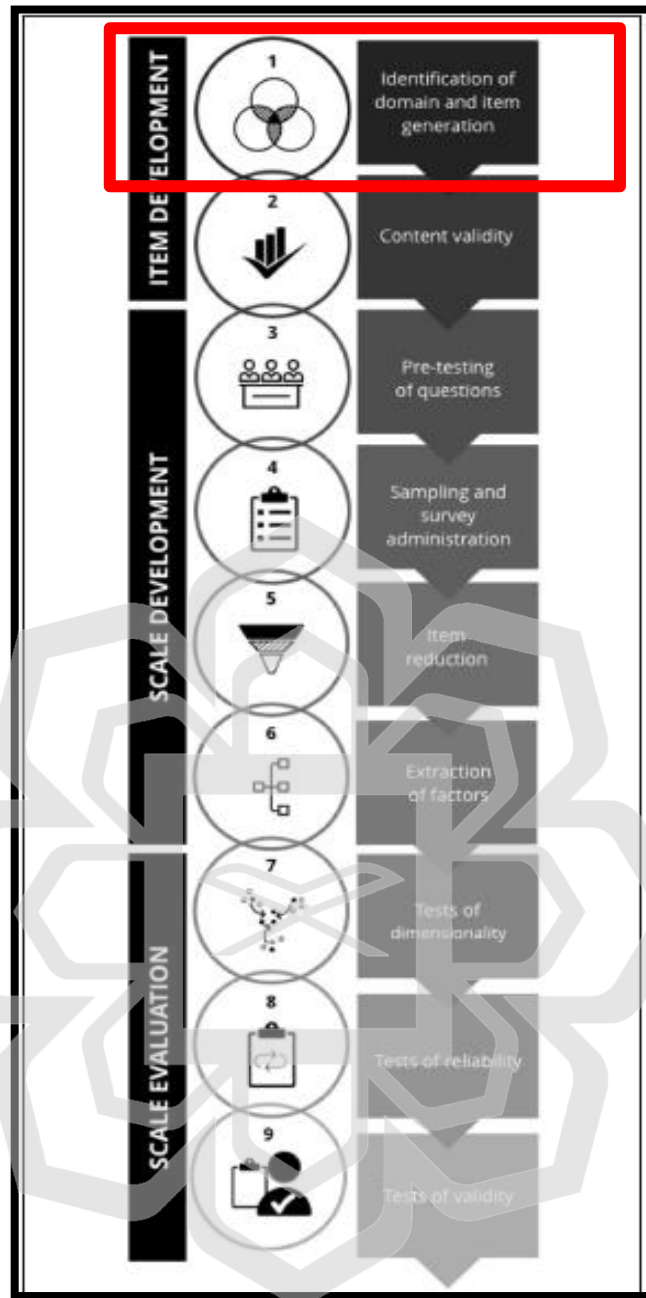


Figure 3.1 Steps in Development of Assessment Tool

In this study, the researcher only focuses on the first step in the development of assessment tool which is identification of domain(s) and item generation. Figure 3.2 is an adopted table from Boateng et al. (2018) to further explained first step in item development phase. As shown in figure 3.2, identification of domain and item generation consists of deductive and inductive method which were used in this study.

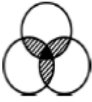
Activity	Purpose	How to explore or estimate?
PHASE 1: ITEM DEVELOPMENT		
		
Step 1: Identification of Domain and Item Generation: Selecting Which Items to Ask		
Domain identification	To specify the boundaries of the domain and facilitate item generation	1.1 Specify the purpose of the domain 1.2 Confirm that there are no existing instruments 1.3 Describe the domain and provide preliminary conceptual definition 1.4 Specify the dimensions of the domain if they exist <i>a priori</i> 1.5 Define each dimension
Item generation	To identify appropriate questions that fit the identified domain	1.6 Deductive methods: literature review and assessment of existing scales 1.7 Inductive methods: exploratory research methodologies including focus group discussions and interviews

Figure 3.2 Identification of Domain and Item Generation

According to Boateng et al. (2018), the best practice for development of assessment tool is to combine both deductive and inductive methods which define the domain and identify the questions to assess it. A deductive method of thorough literature search on the existing scale had been discussed in chapter 2 of this study which provides the theoretical basis for defining the domain. Thus, an exploratory research methodology is needed as the inductive method of this study to move the domain to be broader.

As mentioned in previous chapter 2 (section 2.3), all existing assessment tools are developed based on western women's experience. The reliability of these assessment tools was found lower in non-western countries compared to the western countries, possibly due to the differences of the cultural dimension. Thus, understanding how PMI is experienced, assessed and managed within the Malaysian healthcare system is important in determining whether the existing tools suits in this population. Without in-depth understanding generated by qualitative data, it would be challenging to understand and use a culturally appropriate assessment tool in measuring postnatal mental health status for Malaysian postnatal mothers.

3.2.2 Research Design: Qualitative Research

Research design can be considered as a structure of research which provide a clear blueprint used to guide the researcher during the study to answer research questions and at the end achieve research objectives (Akhtar, 2016; Creswell, 2007).

Qualitative researches are designed to provide a means of understanding of the phenomenon by observing or interacting with the participants of the study. Its' interest is in exploring and/or explaining of a phenomenon occur in the natural setting (Boru, 2018). As mentioned previously, the main focus in this study was to explore HCPs and postnatal mothers' views on PMI. According to Merriam (2009), interviews are essential to obtain information pertaining to behaviour, feelings, or people's understanding on a situation which cannot be observed.

Creswell (2007) identified five qualitative approach which are narrative research, phenomenology, grounded theory, ethnography and case study. Whilst, Merriam (2009) presented with six approaches which are basic qualitative research, phenomenology, grounded theory, ethnography, narrative analysis and critical qualitative research.

Among these qualitative approaches, grounded theory or ethnography might be appropriate designs of choice in this study. However, the aim of these research is not to build up a theory, but to comprehend a culturally appropriate domains in assessment tool to be implemented in the maternal mental healthcare setting through exploring Malaysian HCPs' and postnatal mothers' views on common postnatal mental illnesses. Thus, a semi-structured interview is required to keep the interviews focused and enable generating required information. It is contradictory with grounded theory design which need the researchers to approach the participants without any priori theories and in inductive stance.

Ethnography approach is useful to understand the culture of the group through observation and interview, but the researcher needs to spend time with the group being studied. It needs an intensive and sustained immersion in one setting to gather extensive data which is necessary to produce a cultural interpretation (Merriam, 2009). Thus, it is not applicable for this study because there is no specific geographical setting for

observation to be based on and due to time constraints. There will be an issue on the right time for the observation as the onset of PMI are differ depending on the types.

Hence, exploratory qualitative approach is the most suitable research design for this study. It is not confine by the ideas of the existing qualitative research design and will help in maximizing the discovery of generalization and rich description on the phenomenon which lead to a new insight and better understanding of participants' point of view (Boru, 2018; Creswell, 2003). By conducting qualitative interviews with the HCPs and postnatal mothers in this study, research question 1 to 4 (see section 1.4) were addressed. At the end of this study, the researcher was able to understand the views of PMI among Malaysian HCPs and postnatal mothers that were essential when developing an assessment tool.

3.3 RESEARCH METHODS

3.3.1 Study Population

A population refer to a total set of people of interest in the study. The population is entirety of the same group of people. It is difficult to recruit the entire population of interest in a study (Majid, 2018). Thus, the researcher recruits the sample of population to represent the entire group. There were two groups of study population in this study which are HCPs and postnatal mothers in peninsular Malaysia. HCPs from different position (specialist, doctor, nurse, and clinical psychologist) in different states (Pahang, Terengganu, Perak, Negeri Sembilan & Klang Valley) were chosen to get a diverse information and experiences related to the topic of interest. Besides, postnatal mothers who had experience of PMI and attended the selected MCH clinics or hospitals for healthcare services also were selected from these states representing variability of cultural backgrounds and sociodemographic status.

3.3.2 Study Sample and Sampling Strategy

Sampling is a process of selecting a statistically representative sample from the population under study. It is important because the sample chosen in the study will represent the entire population of interest. In this study, the researcher used purposive

sampling method. Purposive sampling is the most common method used in qualitative approach. Participants were selected due to their particular criteria which enabled the researcher to explore in-depth understanding and perception of PMI in Malaysia. The potential participants were recruited from six purposively selected hospitals and/or eighteen MCH clinics in peninsular Malaysia. Two groups of samples were determined by the research objectives and identified to answer research questions i) HCPs with experience of assessing and managing PMI and ii) postnatal women with experience having PMI. The inclusion and exclusion criteria for each groups of study sample are discussed in the next section.

3.3.3 Inclusion and Exclusion Criteria

The inclusion and exclusion criteria of HCPs who are working in MCH clinics allowed the researcher to explore their experiences in assessing and managing PMI as well as their knowledge in differentiating types of PMI in the primary care setting. While the inclusion and exclusions of HCPs who are working in the hospitals (psychiatric department / obstetrics & gynaecology department) allowed the researcher to explore their experiences of assessing and managing women who have been diagnosed with PMI and being admitted either as in-patient or out-patient. Whereas, the inclusion and exclusion criteria of postnatal mothers helped the researcher to explore their experiences of having PMI and how they contemplating and perceived their signs and symptoms.

3.3.3.1 Healthcare Practitioners (HCPs)

According to Benner et al. (2009), there are five levels in the Novice to Expert Model which are novice, advance beginner, competent, proficient and expert. Novice stage is where the person acquires the skills. They have no experiential background or understanding of the clinical situation. The novice will be known as advance beginner when they improve their performance by working as a professional for at least six months. During this stage, they are able to recognize meaningful elements in a situation. In the competent stage, they had gain knowledge, skill and experience as a professional for 1 to 2 years. During this stage, they are able to understand wide range of situation and able to provide feedback. They will be stepping up in the proficient stage when they

had worked as a professional in 2 to 3 years. In this time, they were able to distinguished between a variety of situations. Last but not least is expert stage. The expert had worked as professional more than 3 years and should have a broad vision and able to make a critical clinical decision while viewing the situation holistically. Based on this model, at least six months of experience in a professional field is needed to grasp meaningful elements in a situation. Thus, the researcher chooses the inclusion criteria as below to gain views of HCPs on PMI.

The inclusion criteria of HCPs were:

- i. HCPs who had been working for more than six months in MCH clinics or psychiatric department or obstetrics & gynaecology department

Hence, the exclusion criteria of HCPs were:

- i. HCPs who were not directly manage postnatal mothers
- ii. HCPs from another department

3.3.3.2 Postnatal Mothers

The inclusion criteria of postnatal mothers were:

- i. women age 18-45 years
- ii. At 0-52 weeks after last childbirth during recruitment
- iii. Malaysian by nationality
- iv. Giving birth and had been staying in Malaysia after the last childbirth
- v. Fluent in Malay / English language.
- vi. EPDS score more than 12 or DASS score (stress more than 13, anxiety more than 8, depression more than 10) or self-identified and/or being referred by head nurse in charge

The exclusion criteria of postnatal mothers were:

- i. The age of last child is more than 1 year old

- ii. Mental health status was severe to the extent that participation in the interview might worsen their condition

3.3.4 Recruitment of Participants

As mentioned previously (Section 3.3.1), there were two groups of participants in this study which are HCPs and postnatal mothers. The recruitment of both groups is meant for achieving the objectives of this study (see Section 1.5). The process of recruitment of participants is explained below.

3.3.4.1 Healthcare Practitioners (HCPs)

The researcher contacted and approached the head nurse or head of department in the selected hospitals and MCH clinics to arrange the first meeting. This is meant to build rapport with the HCPs and allowing an engagement between researcher and participants. Then, the second meeting was conducted to present the purpose and process of this study. The HCPs in the allocated setting were given an invitation letter (appendix B) and Patient Information Sheet (PIS) (appendix C). HCPs were given some time to decide their participation. After at least 24 hours, the eligible HCPs which fulfil the inclusion and exclusion criteria were approached. An interview session was arranged upon their agreement and informed consent (appendix D) was taken prior interview session. The data were collected and the process is explained in section 3.5.

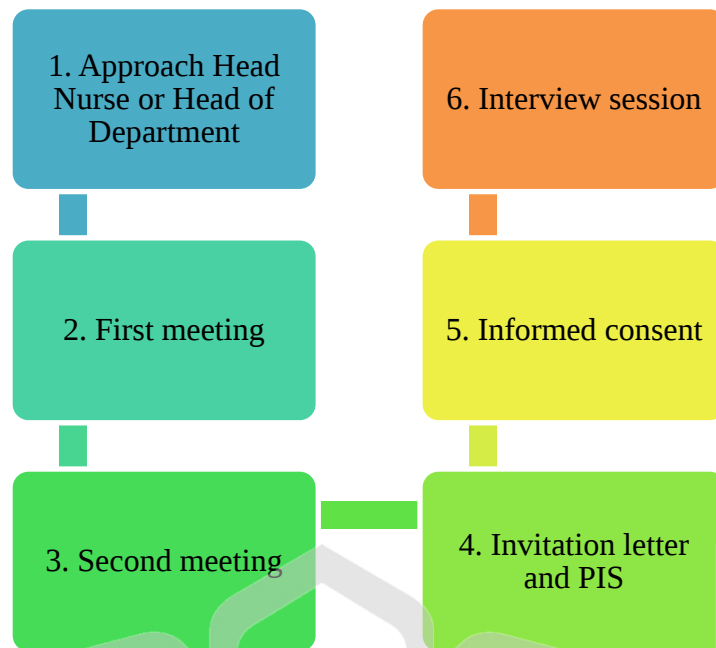


Figure 3.3 Flow Chart for Recruitment of HCPs

3.3.4.2 Postnatal Mothers

Postnatal mothers were approached during their child health visit or follow up appointment and were assessed for the first five inclusion criteria as describe in section 3.3.3.2. Those who fulfil the criteria were given explanation of the study. It was a voluntary participation, and refusing to participate was not affecting their care.

Then, the participants were assessed for the sixth inclusion criteria which is EPDS score more than 12 or DASS score (stress more than 13, anxiety more than 8, depression more than 10) or self-identified and/or being referred by head nurse in charge. Thus, three types of assessment were used i) assessment tools (EPDS and DASS) ii) short interview for self-identification and iii) referral from head nurse in charge

In the first assessment, potential participants were given with two sets of assessment tools: EPDS (appendix G) and DASS (appendix H). As mentioned in the literature review EPDS is a specific tool that commonly used to measure postnatal anxiety and postnatal depression, while DASS is a general tool that commonly used to measure postnatal psychological disorder. Thus, these two tools are expected to capture the potential participants with symptoms to be interviewed. Kadir et al. (2004) and

Mahmud et al. (2003) had validated EPDS (Malay version) and recommended to use cut-off points of 11/12 to determine whether the women is at risk of developing postnatal depression. *Portal Rasmi Kementerian Kesihatan Malaysia* (n.d.) had recommended to use DASS score of stress more than 13, anxiety more than 8 and depression more than 10 to indicate moderate psychological disorder. Thus, for those participants who has scoring as above were eligible for interview.

Second assessment was conducted after the participants completing both assessment tools. The potential participants were asked: “Do you think that you had some level of emotional distress or emotional disturbance after your last childbirth?”. This is because, not all experience can be capture through assessment tool. These tools were used as a proxy measure to study the phenomena and should not limit the definition of postnatal mental illnesses. Hence, the researcher allowed the participants to define what composes the phenomena.

Third assessment was conducted separately from the first and second assessments. In this assessment, the head nurse in charge was approached to get information whether they had encountered any postnatal mothers with history of emotional distress or emotional disturbance or had been diagnosed with PMI. This is important to identify potential participants as well as ensuring women who had underlying mental illness or serious medical condition were not been approached.

All eligible participants were contacted, explained about the study and Patient Information Sheet (PIS) (appendix E) was given. They were given some time to decide their participation. After at least 24 hours, the eligible HCPs which fulfil the inclusion and exclusion criteria were approached. Once the agreement is gain, an interview session was arranged. Consent form (appendix F) was taken prior interview session. The data were collected and the process is explained in section 3.5.

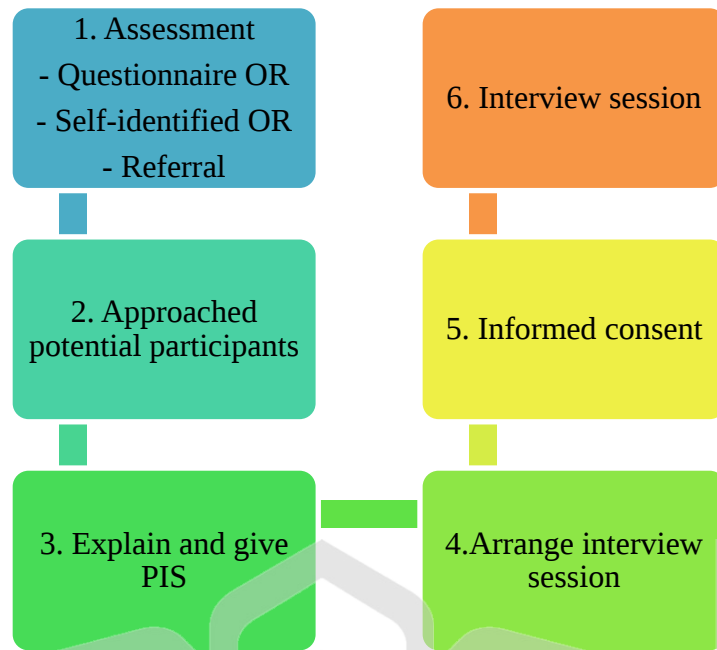


Figure 3.4 Flow Chart for Recruitment of Postnatal Mother

3.3.5 Sample Size

According to Creswell (1998) a range between 20 to 30 interviews was suggested as adequate in sample size guidelines. Patton (2002) also agreed that following a completion of 20 interviews, the interviewer and note taker achieves a thematic saturation, at which no new concepts emerge from subsequent interviews (Vasileiou et al., 2018). Thus, it is decided that there will be at least 20 interviews which consist of both participants – HCPs and Postnatal Mothers.

The interview purposes are to find out HCPs knowledges and perceptions on assessing and managing PMI among Malaysian postnatal mothers as well as to understand mothers' views on PMI based on their experience. In this study, a total of 34 interviews were conducted with 28 interviews were from the HCPs and another 6 from the mothers. Thematic saturation was achieved with this sample size.

3.3.6 Study Setting

Peninsular Malaysia can be divided into four regions, namely Northern, Central, Southern and Eastern Region. The Northern Region covers the states of Perlis, Kedah, Pulau Pinang, and Perak, the Central Region covers the state of Selangor, Kuala Lumpur

and Putrajaya, the Southern Region covers the states of Melaka, Negeri Sembilan, and Johor and lastly the Eastern Region covers the states of Pahang, Kelantan, and Terengganu

Based on the division of Malaysia regions, this study was conducted in eighteen (18) purposively selected Maternal and Child Health (MCH) clinics and six (6) Hospitals in five (5) different states: Pahang, Terengganu, Perak, Negeri Sembilan and Klang Valley. We purposively select one main hospital in each region on few criteria which are (i) a tertiary (referral) hospital for psychiatric cases, (ii) had offered psychiatric services (iii) had dedicated bed for psychiatric cases and (iv) had one of these specialists – psychiatrist, obstetrician or clinical psychologist in the hospital and (v) convenience. Nevertheless, these purposively selected setting was not based on the numbers of related cases for this study. While the MCH clinics were chosen in each state as they (i) include a diverse population from the participants and respondents of various sociodemographic and cultural backgrounds that can be sampled and (ii) had different types of HCPs managing PMI which helps in obtaining variation of sample. Furthermore, postnatal mothers are attending MCH clinics for postnatal visits in the first month of postnatal period and were given an appointment for child health care visit up to six (6) years gave an enormous opportunity for the researcher to access and obtain a sufficient number of samples. Thus, wide variations of HCPs and postnatal mothers were obtained from these selected study setting. Following was the list of the MCH clinics and hospitals:

3.3.6.1 Hospital

1. Hospital Tengku Ampuan Afzan (HTAA), Pahang
2. Hospital Sultanah Nur Zahirah (HSNZ), Terengganu
3. Hospital Ampang, Selangor
4. Hospital Kuala Lumpur (HKL), Kuala Lumpur
5. Hospital Raja Permaisuri Bainun (HRPB), Perak
6. Hospital Slim River (HSR), Perak

3.3.6.2 MCH Clinics

Pahang

1. Klinik Kesihatan Balok
2. Klinik Kesihatan Beserah
3. Klinik Kesihatan Indera Mahkota
4. Klinik Kesihatan Jaya Gading

Terengganu

1. Klinik Kesihatan Batu Rakit
2. Klinik Kesihatan Bukit Tunggul
3. Klinik Kesihatan Hiliran
4. Klinik Kesihatan Seberang Takir
5. Klinik Kesihatan Jerleh
6. Klinik Kesihatan Seri Medang

Negeri Sembilan

1. Klinik Kesihatan Kuarters Klia
2. Klinik Kesihatan Nilai

Selangor

1. Klinik Kesihatan Ampang
2. Klinik Kesihatan Cheras Baru
3. Klinik Kesihatan Rawang

Perak

1. Klinik Kesihatan Slim River
2. Klinik Kesihatan Tanjung Malim

3. Klinik Kesihatan Bidor

Table 3.1 Number of participants based on study setting

Study Setting	State	Region	HCPs	Postnatal Mother
HTAA	Pahang	East	8	
HSNZ	Terengganu	East	2	1
Hospital Ampang	Selangor	Central	2	
HKL	Kuala Lumpur	Central	1	
HRPB	Perak	North	1	
HSR	Perak	North	2	
KK Balok	Pahang	East	3	
KK Indera Mahkota	Pahang	East	1	
KK Jaya Gading	Pahang	East	3	
KK Seberang Takir	Terengganu	East		1
KK Kuarters KLIA	Negeri Sembilan	South	1	
KK Nilai	Negeri Sembilan	South	2	1
KK Ampang	Selangor	Central		1
KK Cheras Baru	Kuala Lumpur	Central	1	
KK Tanjung Malim	Perak	North		1
KK Bidor	Perak	North	1	1
Total			28	6

Table 3.1 shows the numbers of participants interviewed in this study based on the regions. The researcher had approached all study site listed in 3.3.6. However, not all study setting had participants with inclusion and exclusion criteria stated in 3.3.3.

3.4 DATA COLLECTION

The data collected in this study was based on individual interviews with the participants. Interviews offer an opportunity to understand people's experiences and explored their perceptions in their own words. By conducting interviews with key stakeholders affecting in assessment and management of PMI including the patients and multilevel individuals in an organizations, enhanced the collection of relevant and personally meaningful data from each participant (Hamilton & Finley, 2019). The procedure and process of these interviews is discussed below.

3.4.1 Interviews

An interview in a qualitative study can be completely unstructured by using a narrative and free-flowing method, semi-structured by using a topic guide or extremely structured by using a survey-like interview guide. Depending on the goal of the interview and the characteristics of the participant, researchers may combine several methodologies within a study.

An unstructured interview had no predetermined sets of questions, so it requires a skilful interviewer to get the data. An extremely structured interview is inflexible as it sticks to the predetermined questions. While, a semi-structured interview had allowed the participants to express their feelings and thoughts based on the predetermine topics as a guide (Knott et al., 2022). Thus, this study used a semi-structured interview as it was a powerful method to learn about people's attitudes, beliefs, and experiences (DeJonckheere & Vaughn, 2019).. This method was designed to facilitates the collection of data from the participants pertaining to their views on PMI by providing designed questions as well as permitting the researcher to control and verify the details based on the answers during interview session

Merriam (2009), suggested five elements in semi-structured interviews which are i) interview guide consist of less and more structured questions, ii) flexible questions, iii) some specific questions was asked to all participants, iv) most of the questions were guided by the predetermined issues that need to be explored, and v) questions was not asked in a particular order. However, in line with current situation (COVID-19), the interviews were conducted either face-to-face or virtual. Thus, to ensures valid and reliable data was obtained, the researcher had established good rapport with the participants and observe non-verbal communications such as eye contact, facial expression and body language during interview session.

For the HCPs, the interviews were conducted in a private and quite room at the respective clinic or hospital or at their home. For the postnatal mothers, it was conducted at their home or in a private and quite room at the respective clinic or hospital or at another location of the mothers' wish.

3.4.2 Interview Guide

An interview guide is a list of specific or open-ended questions that need to be asked during interview session which helps participants to share their views related to the predetermined topics. It directs the conversation between the researcher and participants, and additional follow-up questions, probes, and comments were made to obtained more data.

In this study, the interview guide for HCPs consists of five parts which are i) general knowledge about PMI, ii) perceptions and understanding on indicators of PMI, iii) Differentiation between each types of PMI iv) mechanism to assess PMI and v) challenges and suggestions in assessing PMI in Malaysian healthcare setting. While for the postnatal mothers consist of five parts which are i) general backgrounds, ii) perceptions of mental illness after childbirth, iii) experience in having PMI, iv) expectation of childbirth and motherhood and v) comparison of mental health before and after childbirth (see appendix I). The content of this interview guide had been reviewed and validated by the experts consist of a qualitative researcher, 2 psychiatrist, 2 family medicine specialist and a clinical psychologist. All of them are people with extensive knowledge and proven experience in the area of interest.

3.4.3 Recording, Transcribing and Translating Interview Data

Interviews data were audio recorded with participants' permission. Each interview lasted approximately one hour. However, taking into consideration that the potential for recording data being malfunction, field notes were written during interview session or as soon as interview ended. Together with this written data, the researcher insights and participants' non-verbal communication were jotted down to ensure all important data were included in data analysis. Participants information were recorded in a recruitment log to maintain the confidentiality and transparency of research process.

All recorded interviews were transcribed verbatim. The process of transcribing the data was tedious and time-consuming. Thus, the researcher asked a research assistant to transcribe some of the data. However, the transcribed data from the research assistant were cross-checked by the researcher herself by listening and comparing back the audio or video recorded data with the transcriptions. Then, the researcher was fixing the transcription if needed.

All interviews were conducted in Malay. The transcriptions were maintained in the language spoken by the participants as verbatim. However, for the purpose of report writing, the selected quotes from the interviews were translated into English. To ensure the accuracy and validity of the content, principal researcher and supervisors who were bilingual were appointed to verify the translation. Then, the anonymized transcripts were then electronically entered into the qualitative data management software namely NVivo.

3.5 DATA ANALYSIS

This section discussed the approach used for data analysis in this study, including a description on the systematic process to produce study findings. The data obtained from the interviews were analysed thematically which made it possible to systematically find and analyse patterns of meaning within a set of qualitative data (Braun & Clarke, 2006; Braun & Clarke, 2012). Thematic analysis is a method for identifying, analysing, and reporting themes within the data. It is an independent and reliable type of data analysis. It allows the researcher to explore the transcripts analytically and categorised the

participants' description into small themes. According to Braun & Clarke (2006), there are six steps in the thematic analysis which are 1. Familiarizing with the data 2. Generating initial code 3. Searching for themes 4. Reviewing the themes 5. Defining and naming the themes and lastly 6. Producing the report. Even though there are two groups of participants in this study, the data obtained from the participants were analysed together. Thus, all transcriptions had followed the same process stated in this data analysis.

3.5.1 Familiarizing with the Data

The first step in thematic analysis is familiarizing with the data. Thus, in this step the researcher had read and re-read the transcriptions, listening to audio recordings or watching video data to familiarized with the entire content. Then, the researcher had made notes and jotted down early impressions, important issues and recurrent points for each transcript to searched for patterns and meanings.

3.5.2 Generating Initial Code

After a comprehensive review of all datasets, six transcripts were selected as they were considered to have diversity of the participants' characteristics and backgrounds and also were rich in data about the views and perceptions of PMI. At this stage, the researcher had initial ideas about codes to organize the data. Thus, the researcher revisited and revised research questions in response to what she thought the dataset was telling her. This dataset was created with the intention of analysing the HCPs' and postnatal mothers' views of PMI in Malaysia healthcare setting.

After creating the initial codes, the researcher realised that the data were also emphasising on the indicators, contributing factors, challenges and recommendation to assess PMI. Thus, the researcher revised the research questions to reflect on to this dataset. Then, the researcher worked through each transcript coding that seemed to be relevant to the research questions. Sometimes the researcher had modified or generated

new codes as she worked through the dataset. This process was discussed with the supervisor to identify initial codes in the data management stage.

3.5.3 Searching for Themes

After initial codes were developed based on the selected transcripts, the initial themes were decided based on collated codes. According to Braun & Clarke (2006), a theme is a pattern that captures something significant or interesting about the data and/or research question. At this stage, the researcher had organized the codes into broader themes that were specific to the research questions. Table 3.2 shows initial themes and codes of the dataset. These themes was then applied to the remaining transcripts.

Table 3.2 Initial Themes and Codes

Initial Themes	Initial Codes
Perceptions of PMI	• Postnatal blues • Postnatal depression • Postnatal psychosis • “Meroyan”
Indicators of PMI	• Lack of interest to herself or the baby • Uncooperative • Self-isolation • Adjustment disorder • Crying/sad/low mood • Confused/unable to concentrate • Depress/stress • Angry • Postnatal depression • Loss of appetite • Lack of sleep • Fatigue • Pain

	• Postnatal anxiety • Palpitation • Overthinking • Postnatal psychosis • Hallucination • Delusion • Self-harm/harming others
Causal explanation of PMI	• Lack of support • Financial issues • Staying with family members • Traditional practices • Postnatal diet • Postnatal taboos • Transitional period to motherhood • Childcare management • Body image • Breastfeeding issues • Preparation to be a mother • Unplanned pregnancy • Coping mechanism • Hormonal changes • History of psychiatric illness • Pregnancy and childbirth issues (medical problems/trauma) • Religion
Assessment	• Availability of assessment tools • Clinical judgement • Professional boundaries (time, experience)

	• Teamwork management • Stigma
Potential Intervention	• Proper assessment tool • Referral pathway/guideline • Training and continuous learning • Health education • Awareness

3.5.4 Reviewing the Themes

During this phase, the researcher review, modify and develop the initial themes that were identified in step three. All data that was relevant to each theme was extracted and gathered. The connection and similarities between one theme to another were identified by comparing the initial themes and transcripts. Then the researcher had discussed with the supervisor pertaining to things to consider about the themes which are i) Does the theme make sense? ii) Does the data support the themes? iii) Does the amount of data is enough for a theme? iv) Are there themes within themes (subthemes)? and v) Are there other themes within the data? Based on these questions, the researcher able to identify coherent and distinctive themes of the dataset, so, refining of the codes and themes were done.

For example, perceptions and indicators of PMI had few overlapping codes, thus, the researcher had converted these two themes into subtheme and put it under new themes as What is PMI? While, causal explanations of PMI mainly had three major factors namely sociocultural, psychological and biophysical factors which become the subtheme. Lastly, the codes in the assessment and potential intervention mainly talk about the HCPs roles, responsibilities, challenges and recommendation in assessing the postnatal mothers. Thus, these initial themes were combined under one broader theme which is roles, challenges and recommendations of HCPs about PMI but under two subthemes i) roles and responsibilities and ii) challenges and recommendations. Figure 3.5 shows thematic mapping for the data.

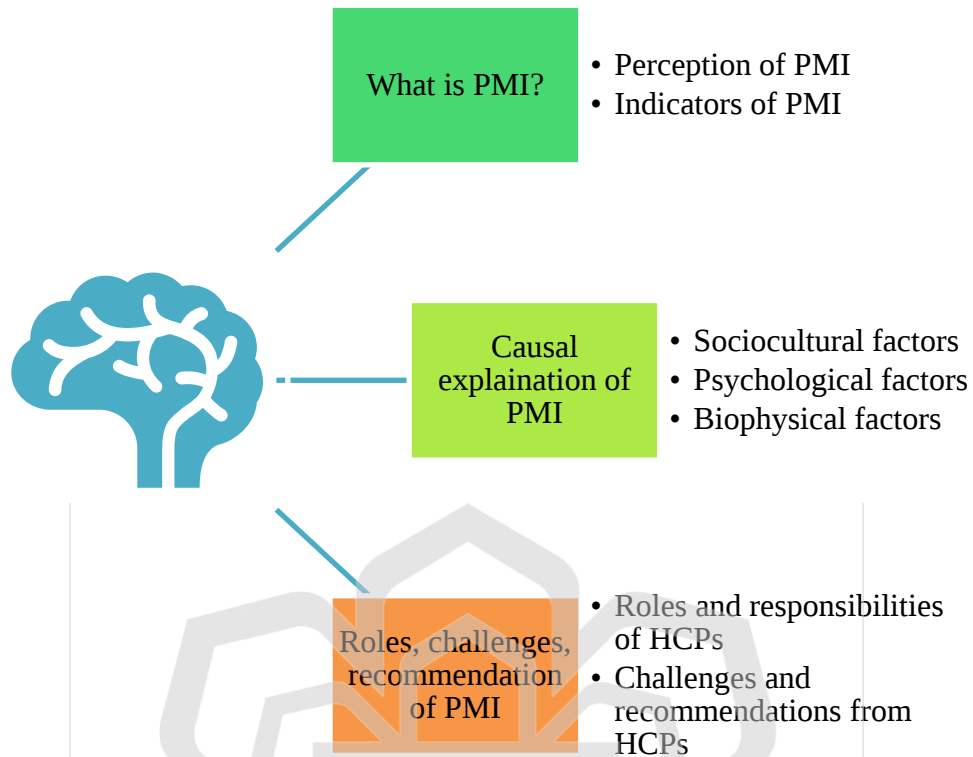


Figure 3.5 Thematic Mapping of Postnatal Mental Illness

3.5.5 Defining and Naming the Themes

This step is the last refinement of the theme. Braun & Clarke (2006) suggested to use a “catchy” names for the theme that capture the essence of the analysis. Thus, the researcher had rename the themes to fit the sense of the data. During this stage, the researcher go back and forth between the phenomenon understudied and identified themes in order to organized the story into a coherent and consistent analysis. The goal was to aligned the story and identified the key elemets that resonated and reflected the essence of the data. Table 3.3 show the finalised theme used to analysed the data of the study.

Table 3.3 Finalised Study Themes

Themes	Subthemes
Conceptualization of PMI	• Understanding of PMI • Indicators of PMI
Perceived cause of PMI	• Sociocultural factors • Psychological factors • Biophysical factors
Roles and challenges in postnatal management	• Health care roles and responsibilities • Challenges and recommendation

3.5.6 Producing the Report

Lastly, the story of the data needs to be told in a form a report which provide a concise, coherent, and interesting account of the phenomenon understudied. The data used in this study was from the transcription in the language spoken by the participants as verbatim. However, for the purpose of report writing, the selected quotes from the interviews were translated into English. This report was further discussed in chapter 4.

3.6 RIGOUR AND TRUSTWORTHINESS

All research either qualitative or quantitative is concerned with producing valid and reliable knowledge in ethical manner. Although the tests and measures used to establish the validity and reliability of quantitative research cannot be applied to qualitative research, there are ongoing debates about whether terms such as validity and reliability are appropriate to evaluate qualitative research. In the broadest context these terms are applicable, with validity referring to the integrity and application of the methods undertaken and the precision in which the findings accurately reflect the data, while

reliability describes consistency within the employed analytical procedures (Noble & Smith, 2015).

In this section, the researcher will discuss the trustworthiness of the findings. Trustworthiness or rigour refers to the degree of confidence in the data, interpretation and methods which employed to assure the quality of a study (Polit & Beck, 2014). Thus, in each study, a researcher needs to establish the necessary process and procedures to be considered worthy by the readers. According to Lincoln & Guba (1985), there are four criteria in the approach of trustworthiness and rigour in qualitative studies which are i) credibility, ii) dependability, iii) transferability, and iv) confirmability. These criteria were adopted to ensure sufficient information obtained to access the validity of the study. Furthermore, the researcher had completed 32-items checklist of COnsolidated criteria for REporting Qualitative research (COREQ) (see Appendix J) to ensure all essential elements were reported.

3.6.1 Credibility

Credibility or internal validity ensures the study measures what is intended and is a true reflection of the social reality of the participants. Several strategies were carried out to enhance the credibility of this study which are i) adopting an appropriate research design to answer research questions, ii) applying purposive sampling to recruit the HCPs and postnatal mothers, iii) recruiting the HCPs and postnatal mothers from multiple study settings, and iv) explaining the right to refuse to participate in this study.

The selection of research designed and the information being investigated was guided by standard principles. The research design used in this study was in line with the research questions that need to be answered to achieved research objectives. Qualitative research design was the most suitable method to explore the views and knowledge of Malaysian healthcare practitioners (HCPs) and postnatal mothers on the signs and symptoms, causes as well as mechanism for the assessment and management of postnatal mental illness (PMI).

Although the data were collected by using purposive sampling, this study was able to include HCPs and postnatal mothers from different sociodemographic and professional background. The diversity of the participants allowed explorations from

different perspectives. Furthermore, multiple methods were used to achieved data triangulation to enhance the quality of information obtained in this study. The findings of this study were produced based on the interviews of 28 HCPs from different positions consist of psychiatrist, obstetricians, family medicine specialist, medical officers, clinical psychologist and nurses, regardless of primary (MCH clinics) or tertiary setting (psychiatric and obstetrics and gynaecology department) as well as 6 postnatal mothers from different sociodemographic background. Additionally, this study was from multiple states, covering all four regions of Peninsular Malaysia (Pahang, Terengganu, Perak, Negeri Sembilan and Klang Valley) in attempt to obtained broader views more diverse finding.

The initial contact with the participants were established through meetings in the study setting or phone calls before commencement of the interviews. The interviews were conducted through face-to-face or virtual with predetermined topics and criteria to obtained the data which purpose to answer the research objective. This was to ensure that they could provide enlightening and valuable information. This aspect was crucial to obtained trusted and reliable data. In order to obtained honesty in their response, both HCPs and postnatal mothers were explained that their participation in this study was voluntary and declination of participation were not affecting their professionalism and treatment.

3.6.2 Transferability

A second factor offered by Lincoln & Guba (1985) is transferability or external validity. It refers to the ability of the findings to be transferred to other contexts or settings. A detail description of the research context was reported to allows the reader in assessing whether it is transferable to their situation or not because qualitative research is specific to a particular context. Methods and time frames for the collection of data as well the entire duration of the field study was completely described. These factors influence the degree to which the completed research may have application to another context or settings.

Similar findings would be achieved if the study is replicated by using the same method involving the same group of participants. In addition, as a part of the strategies

to improve transferability of the study, every step in the research process of this study was reported in details. The researcher believed that a proper research practice had been implemented in this study and the same result would be produced when applying the same methods. The findings that have the greatest potential to be transferred are those concerned with signs and symptoms of PMI, cause of PMI as well as potential mechanism to improve assessment and management of PMI. However, the cultural context needs to be considered for the findings about postnatal taboos and traditional postnatal practices.

3.6.3 Dependability

Dependability refers to consistency or reliability which ensures the process is described in sufficient detail to facilitate another researcher to repeat the work. The transcription and translation process were done by the researcher which give better insight of the context in the interviews. Then the researcher did the initial data analysis. Coding, categories, subthemes and themes derived from the interviews were identified. Similar codes and categories were collected and differences were noted. Then, the analysis was reviewed by the supervisors who were experienced in qualitative researches to evaluate the accuracy and verify the findings. Periodical supervision meetings had also contributed to alternative views which help the researcher to recognized bias and preferences. This facilitates the transparency of data analysis which improve rigour and trustworthiness of the findings.

3.6.4 Confirmability

Confirmability refers to the neutrality and accuracy of the data. It relates to how the findings were presented in an unbiased account. Findings of this study were solely generated based on the HCPs' and postnatal mothers' views, perceptions and experiences. It was not produced by the researcher preferences or assumptions. Several steps were carried out to ensure the concept of confirmability is fulfilled.

The HCPs' and mothers' explanations were maintained in their original language. However, the Malay quotes were translated into English to denote what had been spoken in this study. Some Islamic words that could not translated into English

were maintain as it is. This approach was used to maintain the originality of the narrative as close as possible. In addition, the interviews and transcribed data were reviewed back by the participants to ensure the meaning and its context is clear.

This study also applied thematic analysis which provide an audit trail. An audit trail was built in the way the findings were generated from the raw data. All responses were considered in data analysis although it was differed from others opinions. This study was also comparing and contrasting the information given by the participants and demonstrated it in Chapter 4. Finally, the findings of this study were compared with previous literatures to rationalized and conclude.

3.7 REFLEXIVITY

Reflexivity is the process of reflecting critically on the self as researcher which plays a role as a data collection instrument. It is crucial for minimising personal and intellectual biases or influence that they may have on participants at each stage in the study development process. Thus, qualitative researcher should clearly impart their own personal motivations, values and assumptions which shaped their research (Finlay & Gough, 2008). In the following text, the researcher had demonstrated the reflexive process applied in this study

At the beginning, I had introduced myself as a researcher from International Islamic University Malaysia. However, throughout this study, the disclosure of professional status as a nurse occurred, especially HCPs group. However, when the discovery happened, I had emphasised that my latest job scope was more on the nursing management instead of directly caring for postnatal mothers in clinical practice. Despite making clear of my dual role, I felt some participants were not wholly expressing their views. They were more likely to provide positive reviews of the healthcare and reluctantly talk about negative aspects of current practices. It was felt that some of them appeared to have concerns when sharing their experience especially if there are any negative remarks, because it might affect their care, or might be reported to higher authority which causing problems to them once the findings of this study are published. However, I had assured of anonymity and confidentiality of the data.

Aforementioned, field notes were written during the interview session or as soon as interview ended (see section 3.4.3). The notes include participants' verbal and non-verbal communication such as facial expression, body language and sighing (as much as it could be recalled), any significant event during the interviews and my own insight. This was to ensure all important data were included in data analysis, and to support the trustworthiness of this study.

Although I was aware that some of my thought seem to be challenged during data collection; this nevertheless, became clearer when I analysed my data. For instance, I expected that lack of support will be the main cause contributing for PMI on both HCPs and postnatal mothers. This however was not the case. All HCPs had agreed and discussed that this factor is one of the causes for PMI but it was not mention even once by the postnatal mother. In fact, all postnatal mothers stated that they had receive enough support which help them in seeking for treatment. Throughout the data analysis process, I have my reflexive notes which helped me to record my personal feelings and ideas about the participants' experiences, expressions, and themes. Writing these notes not only helped me to provide transparency in the study development but also helped me aware of my personal growth throughout the process.

In summary, although it is challenging and not always possible to examine my preconceptions, I had considered many efforts to ensure all thoughts, feelings, and activities associated with the study were kept recorded along the research process. These reflexive practices helped me to develop self-awareness, provide meaningful understandings as well as credibility and accuracy of the study. Rather than carrying my personal and professional bias in the data collection and analysis, I hope these reflexive practices helps in conveying the participants' views. Although I was aware that my personal experience could influence my interpretation on participants' experience, I certainly believed that it actually boosted my interest and passion, rather than inappropriately influencing data collection and analysis.

3.8 ETHICAL CONSIDERATIONS

The application of appropriate ethical principles is important to protect human subjects. Thus, ethical issues were taken into consideration as well in this study.

3.8.1 Ethical Approval

The ethical approval for conducting this study was sought from Kulliyyah of Nursing Postgraduate and Research Committee (KNPGRC) and Ethics Committee of International Islamic University Malaysia (IIUM) (IREC) with ID No. IREC 2021-239. Upon approval from the IREC, the ethical approval was applied through online registration with National Medical Research Register (NMRR) and Medical Review & Ethics Committee (MREC) with ID No. NMRR-20-475-52538. Following the approval from the aforementioned parties, letter of application for approval was sent to each State Health Departments (JKN), District Health Offices (PKD) and respective hospitals and MCH clinics which had been allocated in this study setting (see Appendix K).

3.8.2 Informed Consent and Voluntary Participation

To participate in a research study, participants need to be adequately informed about the research, comprehend the information and have a power of freedom of choice to allow them to decide whether to participate or decline (Polit & Beck, 2014). Participant's agreement to participation in this study was obtained only after a thorough explanation of the research process.

All participants were required to provide written informed consent. The potential participants were approached individually and given an explanation of the purpose of the study and data collection process. Patient/participant's information sheet was distributed to get further information regarding on this study. Then, they were given an appropriate time to ask questions and address any concerns. It was explained that as their participation was voluntary, refusing to participate or withdraw from the study while it was in progress would not affect their care or job in the respective healthcare setting in any way. They were required to sign the informed consent form before the interview process to indicate their permission to be part of the study and this signature was confirmed prior to the interview session. The patient/participant's information sheet and informed consent was available in two languages: Malay and English.

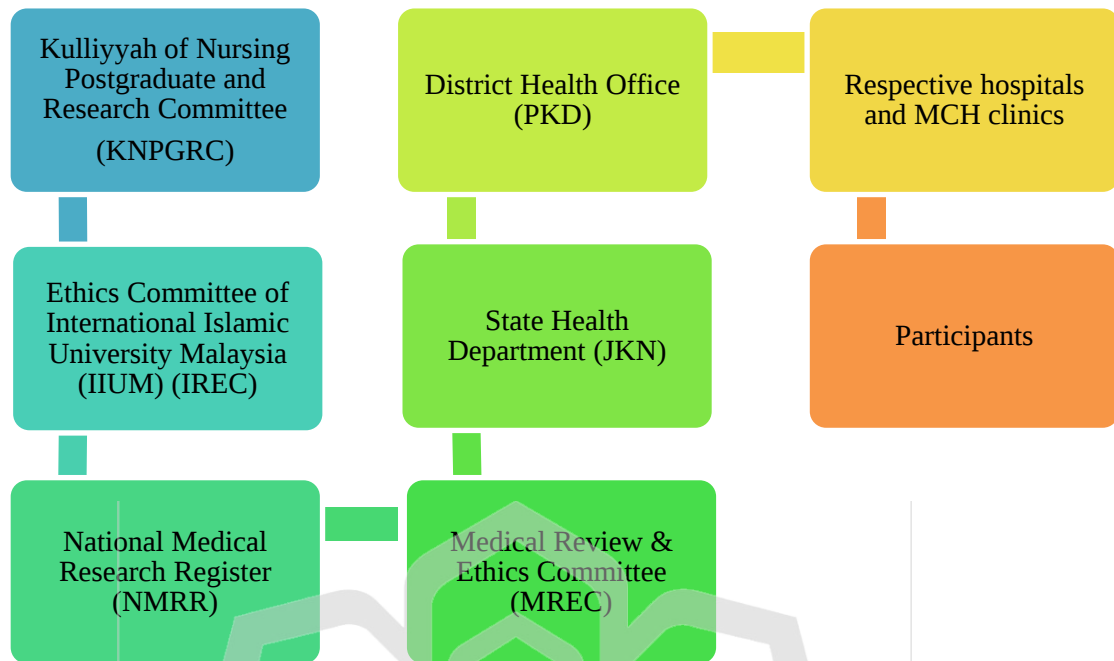


Figure 3.6 Ethical Approval Flow Chart

3.8.3 Anonymity and Confidentiality

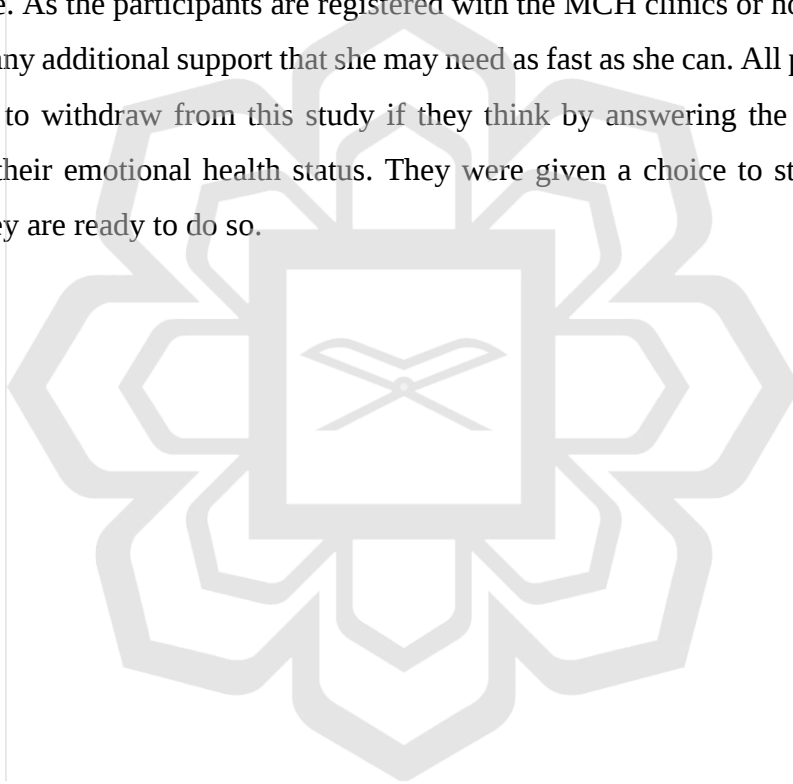
The anonymity and confidentiality of the participants were preserved by not revealing their names and identity in the data collection, analysis and reporting of the study findings. Privacy and confidentiality of the interview environment were managed carefully during telephone communication, interview session, data analysis and dissemination of the findings. The interview was conducted individually in private and quite room without access by the outsiders. However, their identities were removed during data transcription and referred by pseudonym names in the data analysis.

3.8.4 Data Protection

All assessment tools and written materials that had been distributed to and obtained from the participants were kept in the secured cabinet of a locked room to adhere with Personal Data Protection Act (PDPA) and ethical guidelines. The audio/video recorded data were stored in encrypted devices and password protected. However, for the purpose of cross checking in data analysis, the data were shared with the supervisors.

3.8.5 Managing Unprecedented Event

The semi structured interview technique requires the researcher to listen and give respond to the participants' answers. It might create an unintended harm to the participants especially to the postnatal mother with postnatal mental illness which is considered as a vulnerable group of people. They might become distress while expressing their feelings during interview session. Therefore, a woman who belief she might significantly affected with this study were excluded. If any participants feel upset by talking about her experience and opinion, she may take a break or stop to answer at any time. As the participants are registered with the MCH clinics or hospitals, she may ask for any additional support that she may need as fast as she can. All participants were advised to withdraw from this study if they think by answering the questions might impact their emotional health status. They were given a choice to stop and continue once they are ready to do so.



CHAPTER FOUR

FINDING AND ANALYSIS

4.1 INTRODUCTION

As outlined in chapter 3, the purpose of this qualitative study was to explore the healthcare practitioners' and postnatal mothers' views and perceptions on postnatal mental illness (PMI) among Malaysian women. The data were collected through face to face or virtual, semi-structured interviews with the HCPs who were working more than six month or postnatal mothers who were attending for care or admitted in the selected maternal and child health (MCH) clinics or hospitals.

During the interviews, both HCPs and postnatal mothers had discussed their knowledge and perception of PMI, their views on the causes as well as the indicators of PMI. Additionally, the HCPs also shared their views on the differentiation of each type of PMI, their experience in assessing and managing women with different types of PMIs, roles and challenges they had encountered as well as potential mechanism that they thought might be useful for perceiving postnatal mothers with PMI. As mention in chapter 3, a total of 34 participants comprised of 28 HCPs and 6 postnatal mothers had taken part in this interview.

The findings reported in this chapter were based on the analysis of the interviews conducted with all of these participants. Table 4.1 and 4.2 show the demographic characteristics of the HCPs and postnatal mothers. Further details of the HCPs' characteristics are available in Appendix L and Appendix M are the details of the postnatal mothers' characteristics. Based on the demographic data of the participants, most of them were from Eastern region which consists of 17 HCPs and 2 postnatal mothers. Regardless, the distribution of participants was not based on the regions but more on the participation willingness and the collection of the data was stopped once the saturation achieved.

Table 4.1 Demographic Characteristics of HCPs

CHARACTERISTICS	NO OF PARTICIPANTS	PERCENTAGE
PROFESSION		
Psychiatrist	6	21%
Family Medicine Specialist	4	14%
O&G Specialist	4	14%
Medical Officer	4	14%
Nurse	9	32%
Clinical psychologist	1	4%
LEVEL OF EDUCATION		
Diploma	2	7%
Advance Diploma	7	25%
Bachelor's Degree	4	14%
Master's Degree	15	54%
REGION OF STUDY SITE		
East	17	61%
North	4	14%
Central	3	11%
South	4	14%
WORK SETTING		
Primary	12	43%
Tertiary	16	57%

YEARS OF SERVICES		
0.5 - 5 years	2	7%
6 - 10 years	4	14%
11 - 15 years	8	29%
16 - 20 years	5	18%
> 20 years	9	32%



Table 4.2 Demographic Characteristics of Postnatal Mothers

CHARACTERISTICS	NO OF PARTICIPANTS	PERCENTAGE
LEVEL OF EDUCATION		
UPSR	1	17%
PMR	1	17%
SPM	2	33%
Diploma	1	17%
Degree	1	17%
REGION OF STUDY SITE		
East	2	33%
North	2	33%
Central	1	17%
South	1	17%
RACE		
Malay	3	50%
India	1	17%
Chinese	1	17%
Others	1	17%

These data were formulated into three themes which are *conceptualization of PMI*, *perceived cause of PMI*, and *roles and challenges in postnatal management* as discussed in section 3.5. Table 4.3 below shows the main themes, subthemes and categories which emerged from the data.

Table 4.3 Themes, Subthemes and Categories of the Data

THEMES	SUBTHEMES	CATEGORIES
Conceptualization of PMI	Understanding of PMI Indicators of PMI	Defining postnatal mental illness Types of postnatal mental illness General indicators Differentiating types of PMI
Perceived cause of PMI	Sociocultural factors Psychological factors Biophysical factors	Social circumstances Postnatal taboos and practices Transition to motherhood Preparation to be a mother Hormonal changes History of psychiatric illness Childbirth and postnatal complication
Roles and challenges in postnatal management	Health care roles and responsibilities Challenges and recommendation	Clinical judgement Availability of resources Professional and social boundaries Potential interventions

4.2 THEME 1: CONCEPTUALIZATION OF POSTNATAL MENTAL ILLNESS

In the interviews, HCPs and postnatal mothers were asked about the general understanding and common features of postnatal mental illnesses. These understanding and views were explained in the first theme of conceptualization of postnatal mental illness (PMI). This theme has been categorized under two subthemes which are understanding of PMI and indicators of PMI.

4.2.1 Understanding of Postnatal Mental Illness

Based on the interviews with the HCPs, there are different level of understanding of PMI. The HCPs explained their understanding based on the description of postnatal mental health, conceptualized it as postnatal blues or depression or associate it with common types of PMI whilst the mothers were sharing their understanding of the meaning of postnatal mental illness through their experience.

4.2.1.1 Defining Postnatal Mental Illness

In their explanation of PMI, majority will associate it with either postnatal blues or depression. This finding suggested that some of the HCPs were unable to describe what is PMI and unaware of the differences between each PMI. Three of them describe PMI similar to postnatal depression. Thus, there is limitation to other types of PMI.

Postnatal mental illness? Postpartum depression *lah*. During home visit or clinic visit, we will ask their condition, their emotional status, either the mother can accept their baby or not, either she can cope with the pain or not (HCP 1, Medical Officer)

While another three of the HCPs had associated it with the term of postnatal psychosis (*meroyan*):

I think I didn't encounter any weird or threatening mom's or baby's life. But, in Malaysia there are a lot, *meroyan*. (HCP 3, Medical officer)

What we understand about mental illness that usually happen after delivery is known as *meroyan*, isn't it? ... So, what we can understand about PMI is like emotional disturbance after delivery. Maybe she had emotional distress, sadness, anxious or we call postnatal blues (HCP 14, Nurse)

However, a few HCPs appeared to have clear understanding of PMI and were able to give clear description of PMI as explained in chapter 2. They had referred the PMI to the mother's mental health and emotional conditions after the delivery.

Okay, postnatal mental illness is more to the discussion of mental health issues among mothers after delivery... the circumstances during or after pregnancy in terms of emotional, feelings, or thought process after the delivery (HCP 17, Psychiatrist)

In addition, two HCPs (psychiatrist) had added the timeframe of PMI in their descriptions. As mentioned by the HCPs, DSM 5 and ICD 10 has described the duration of postnatal period is within 4 to 6 weeks, but practically the timeframe had been extended up to 6 month or more and some of them said it can be up to 2 years

So, when we talk about postnatal mental illness it is like DSM 5 would say 4 weeks after delivery and if we look at the ICD 10 it is about 6 weeks after delivery. But when it come into practice, we actually give limit after three (3) months even more. Okay, we don't really stick to that 4 weeks or 6 weeks okay and it can be any kind of mental illness from serious, some mild disease, some severe disease and usually there are would be various from postnatal onset, some would be done during antenatal. (HCP 21, Psychiatrist)

Overall, it appeared that only five of the HCPs were able to describe PMI clearly and their profession were specialist whilst another 23 HCPs were unable to give a clear description on PMI. When talking about their general understanding of PMI the majority of the medical officers and nurses will associate it with postnatal blues or depression or linked it with self-care and/or newborn care.

It is an emotional status that might worsening to severe depression which cannot be seen by naked eyes. The mother might be stress due to no proper care was given to her or might because of inexperience in handling the baby (HCP 28, Nurse)

On the other hand, most of the postnatal mother had defined PMI by describing their emotional states such as sad, anger and feeling good during postnatal period. For instance, one of the postnatal mothers had mentioned:

I think it is about emotions. It can be healthy and good emotions or a bad one. But after delivery all kinds of emotions are mixed together. Sometimes I feel happy, sad and mad at the same time (PM 5)

4.2.1.2 Types of Postnatal Mental Illness

During the interview, most of the HCPs conceptualized the understanding of PMI in terms of the types of PMI itself. The analysis showed that eight HCPs (three psychiatrist, one O&G specialist and four family medicine specialists (FMS)) had categorized it into three most common types of PMI which are postnatal blues, postnatal depression, and postnatal psychosis.

Basically, there are three most common types: postnatal blues, postnatal depression, and then, postnatal psychosis (HCP 16, Psychiatrist)

Three out of eight had further explained the progress of the severity from blues to psychosis when categorized the types of PMI. The progress can be from mild which known as postnatal blues, moderate as postnatal depression and in a severe form known as postnatal psychosis.

For postnatal mental illness, basically patient can get any types of mental illnesses during postpartum period... either it can be presented as postpartum blues first, then if worsening it can be postpartum depression, if its worst it can be postpartum psychosis (HCP 26, FMS)

While most of the HCPs had categorized it into three most common types of PMI, two specialists had discussed and associate PMI with anxiety too. As mentioned by these HCPs, postnatal anxiety can be comorbid with the depression. Thus, the mother might be diagnosed with both types of PMI which are postnatal anxiety and depression.

In postnatal, sometimes depression can be associated with anxiety as well. It is a combination and not pure depression... (HCP 4, FMS)

However, throughout the interviews, some of the HCPs only described two out of three from the most common types of PMI either postnatal blues and depression or postnatal depression and psychosis.

Postpartum blues around 80% but it's rarely worsening. Postpartum depression is the worse one... (HCP 10, Nurse)

Postpartum depression, postpartum psychosis. Those two are common. (HCP 24, O&G Specialist)

Based on this analysis, the HCPs viewed PMI into few common types which are postnatal blues, postnatal anxiety, postnatal depression and postnatal psychosis. However, most of them viewed PMI mainly as postnatal depression. Apparently, psychiatrist and FMS were able to describe types of PMI very well but nurses, medical officers and O&G specialist were able to state briefly about it. Nevertheless, this topic was not highlighted among postnatal mothers as differentiating types of PMI required medical knowledge and only suitable to be asked to the HCPs. Despite having difficulty describing PMI, the HCPs were able to indicate the symptoms presented by the mothers when experiencing PMI. The following section discussed the indicators found based on HCPs explanations and postnatal mothers' experiences.

4.2.2 Indicators of Postnatal Mental Illness

4.2.2.1 General Indicators

In this subtheme, the HCPs had described general indicators (signs and symptoms) presented by the mothers based on their experience in detecting PMI. They discussed these indicators in terms of behavioural changes, emotional changes as well as somatic symptoms. HCPs generally thought that they recognised PMI from the way that a woman acted or conducted herself, and how she responded to others. Such actions and responses were considered as *behavioural changes*. They use their interviewing and observation skills to detect these changes and identified them as indicators of PMI. The analysis showed lack of interest in the baby was largely stated by the HCPs as one of the indicators in detecting PMI. Many of them observed that women with PMI seemed to neglect their baby, respond inappropriately to the baby's crying, refuse to breastfeed, and pay little or no attention to their baby.

Usually, they will show signs of not wanting to take care of the child, leaving the child without a proper care, does not want to breastfeed... (HCP 9, Nurse)

Maybe to a certain extent, she sees the baby, she seems to want to throw it away or she doesn't want the baby. (HCP 1, Medical Officer)

This indicator was also mentioned by one of the postnatal mothers. She had shared her experience in neglecting her child during postnatal period. Initially, she wants to throw her away but as time passes, she fell in love with her daughter and nowadays she cherished her daughter.

I need to admit that I had that thought at first. I don't want her. But after seeing her, taking care of her, breastfeed her, I don't feel like that anymore. She is my flesh and blood. She is priceless. (PM 6)

Some of the HCPs had also mentioned that mothers with PMI also showed lack of interest in taking care of herself. They had neglected their activities daily living such as personal hygiene, dressing, and ambulating.

I think they are lack of interest in taking care of themselves. They don't want to get up, get better and to get discharge. (HCP 23, O&G Specialist)

I had a case in Klang, she came with infected '*epi*' wound and had been hospitalized for a long period. She kept silence. She doesn't want to take care of her wound, her hygiene. She doesn't want to take care of herself! (HCP 24, O&G Specialist)

A woman who is experiencing PMI was also described by the HCPs as isolating herself and living in her own 'world'. They usually described as 'uncooperative attitudes', 'unwilling to talk to others', and 'poor interaction'. These behaviours were observed by the HCPs during home visits or clinic visits. Some of them have been showing these symptoms during hospitalization after the delivery. These behaviours had been served as an alert to the HCPs indicating of PMI

The interaction between patient and doctor would be affected...When you talk to them, they won't looking, they don't look into your eyes. When you ask questions, they will not answer, not much interaction. (HCP 23, O&G specialist)

When we ask her “Ma’am, look at the child”, she seems doesn’t want to cooperate. That’s where we suspect this mother may have a problem. (HCP 11, Nurse)

Women with PMI also appeared to cry a lot. They can be crying without any reasons. This behaviour usually will be associate with emotional changes. *Emotional changes* refer to the feelings and thought process that were being experienced by the women after delivery. These emotional changes have been described as ‘feeling sad, depress, stress or low mood’. Both groups of participants had mentioned that emotional changes may indicates that they are having a PMI.

Usually, she will cry and look sad. Emotionally look disturbed... we detect complaints from the mother herself or from the staff-in-charge that she feels depress or stress (HCP 8, O&G specialist)

I had cry for few days in the ward. I don’t know why. I easily feel offended by the others. I feel mess up. Previously. I was not like this. (PM 4).

They also described that women with PMI were easily irritated and getting angry. The HCPs and postnatal mothers had mentioned the feeling of getting angry was linked with negative thought process or behaviour which cause harm to self or others either physically or emotionally.

It is not that she is angry with the child, she just angry with everything, and then she starts to find distraction. Towards that, she feels she can hurt somebody, self-harm or maybe suicidal attempt (HCP 16, Psychiatrist)

When I look at my child, at my family, I feel angry. I curse them and becoming rude, even to my mother (PM 3)

In addition, some HCPs and half of the postnatal mothers had described that they also tend to feel confused. They can be confused when performing tasks or answering question.

She looks like depressed and confused when doing something. So, we cannot expect her to take care of her child (HCP 12, Nurse)

I feel like I am doing something different. I feel confused. Sometimes, when my mother was asking something else, I am not answering that question, instead I am giving another answer that was not related to the question (PM 2)

Women with PMI also showed somatic symptoms indicating that something was wrong with them. *Somatic symptoms* are physical symptoms which results in major distress and problems functioning. In this case, ‘loss of appetite’, ‘sleep deprivation’, ‘fatigue’, ‘pain’ and ‘palpitation’ had been described as somatic symptoms in women with PMI

It means she might have sleep disturbance or can’t sleep at all till her condition becoming worse. She also doesn’t want to eat. I don’t think that’s normal. (HCP 22, Psychiatrist)

During this period, I can’t sleep. I also did not want to take even a sip of water. I became withdrawn and pensive (PM 6)

However, some HCPs found that these symptoms might be just a typical feature for inadequate rest such as fatigue and poor sleep habit which is common in motherhood itself. A medical officer had shared that these symptoms can be misinterpreted as normal instead of as indicators for PMI unless severe.

At first, she had complained that she feels fatigue and unable to sleep. So, I thought it was normal. Then, she started to have body aches, difficulty in breathing and palpitation. At that time, I think something is wrong was happened to her. (HCP 3, Medical officer)

In this category, both groups of participants had described the symptoms generally in terms of behavioural changes, emotional changes as well as somatic symptoms to indicate that the women might have PMI. The most common symptoms mentioned by the HCPs were a lack of interest in taking care of the child or themselves as well as self-isolation. More than half of the participants had addressed these indicators of PMI among postnatal mothers. From this analysis, it can be seen that all HCPs were able to recognize the common symptoms which indicates that their client were unwell. However, are they able to differentiate the types and severity of PMI? This will be further discussed in next category.

4.2.2.2 Differentiating Types of PMI

When it's come to differentiating types of PMI a few of the HCPs especially psychiatrist did not perceive postnatal blues and postnatal stress as a type of PMI, instead, they acknowledged these illnesses as adjustment disorders. Adjustment disorder was described as changes in mood, sadness and sleep lasted less than two weeks but women still can function well as a mother

Adjustment disorder usually would have changes in mood, sleep and there is a bit of functional disability...but they still can function with support from the family members (HCP 16, Psychiatrist)

Many would go through blues; it is just the initial adjustment that you go through after you had your baby. So, right from as simple as feeling fatigue, just feeling tired, feeling moody, you know if your husband says something, you just feel snapping at them. Sometimes you can't sleep well. You can start, like a few days just after the delivery up until 2 weeks, but usually it will settle by itself (HCP 21, Psychiatrist)

However, all HCPs except psychiatrist perceived postnatal blues as a less severe version of postnatal depression which is transient and will subside and it will not disturb the functionality of the women as mention by HCP 26.

Postnatal blues, maybe she has some symptoms of depression but not that bad till her function was impaired (HCP 26, FMS)

HCP 17, a psychiatrist had shared her experience accepting referral cases of postnatal depression, but after thorough assessment it was more likely adjustment disorder either postnatal blues or stress or anxiety.

Usually, I've got referral of blues, stress or anxiety as postnatal depression. Other doctors will refer to it as depression. But, when we reassess, it's actually more to stress, she wants to adapt. She feels unfamiliar ... "Oh God, I want to cry" but in fact when we explore her emotions, apparently, she's not sure or she doesn't know these things for example breastfeeding, which can cause stress to the mother as well as worries and anxiety (HCP 17, Psychiatrist)

On the other hand, some HCPs had described that postnatal stress is more likely detectable among women who seemed to have given up on doing certain things, hence, looking unhappy.

If they have stress, they started to fed-up doing things they should do, such as breastfeeding...Stress is so general, because being a mother itself is a quite stressful event especially for first time mother. It is hard to explain, stress from taking care of a child is normal, unless if they could not cope then maybe they can develop postnatal blues. Or she had poor stress management. (HCP 2, Psychiatrist)

In addition, most HCPs and postnatal mothers described common indicators of postnatal anxiety are worry, anxious, palpitation and overthinking. The women usually will associate these symptoms either with their condition or the child's condition.

For anxiety, she will always tell you that her heart was pounding. Overthinking about what will happen to her and her child. Even though there is nothing she feel restless and feel difficult to relax (HCP 10, Nurse)

I am excessively worried about my child. "Is she okay?". I am always had negative thoughts which make me anxious (PM 1)

HCP 21 had further explained, anxiety patient usually unable to concentrate, lack of attention, feel tired, difficult to sleep and scared. They also have panic like physical symptoms such as palpitation, fast breathing, sweating, tremors, numbness, gastrointestinal reaction and also chest tightness. These symptoms can appear during resting or when it was triggered by something.

There is time like they can't concentrate, they feel tired, lack of attention, difficult to sleep, feeling scared, and it can come suddenly. You can have trigger but it can be not triggered. It comes just like that when you are resting, and causing panic like symptoms. When we talk about panic like symptoms, then we are talking about physical symptoms like palpitation, start breathing fast, start sweating, you have tremors, you have numbness, some funny sensation in stomach, chest tightness and so on (HCP 21, Psychiatrist)

Sometime I feel blanked and do not know what to do and suddenly I feel palpitated. I also realized that I cannot focus on my task. All of these happened after delivery. (PM 1)

Additionally, a few HCPs mentioned that they usually encounter postnatal anxiety cases comorbid with postnatal depression or depressive symptoms.

Usually, I will see it together. It appears together with the mood swing and depressive symptoms. (HCP 16, Psychiatrist)

Postnatal depressive symptoms were explained by some of the HCPs as a sudden loss of interest, self-isolation, lack of motivation, unable to concentrate, feeling hopeless and guilty. Sometimes it can be accompanied with negative thought of harming themselves or the child:

Postnatal depression is something that is quite more intense and profound when the low mood is heard almost every day. You know by right when you see your baby is giggling or smiling, you should be able to feel happy. This mother, they don't. They just feel hopeless, helpless, they just don't just feel the joy. They feel stressed. They have trouble sleeping and if the depression is quite severe, they can even go on with the thought of torturing, harming themselves, harming the baby or suicidal thought (HCP 21, Psychiatrist)

Furthermore, all HCPs mentioned the occurrences of hallucinations and delusions when discussing postnatal psychosis. Some of them had include aggressive behaviour on themselves or towards others such as suicidal attempt as one of the symptoms. They had views postnatal psychosis as a severe form of postnatal mental illness.

Psychosis maybe they will experience certain auditory hallucinations, hearing things, that's all I know. Or perhaps auditory or visual hallucinations, aggressive behaviour or could be suicidal (HCP 8, O&G Specialist).

On the whole, there is a contradictory view on postnatal blues and stress between psychiatrist group and other HCPs. Psychiatrist had perceived postnatal blues and stress as a type of adjustment disorder where the mother was trying to adapt her new situation and roles whilst other HCPs had perceived it as a milder version of postnatal depression. It had been supported by a statement given by a psychiatrist as she had received many

referrals of postnatal depression but after thorough assessment it was more likely an adjustment disorder.

Besides, most HCPs acknowledge postnatal anxiety as one of the PMI which either can be appeared concurrently with postnatal depression or not. The most common indicators of postnatal anxiety are worry, anxious, palpitation, and overthinking. They described that if it was appeared with postnatal depression, the women will show depressive symptoms such as lack of interest, lack of motivation, self-isolation, hopelessness and guilt feelings. These depressive symptoms can be accompanied with negative thought or ideation of harming self or others. These symptoms were also supported by the postnatal mother's statement who had shared their experience when having anxiety or depression. However, if the women start developing postnatal psychosis, she will show symptoms of hallucination and delusion. They might also have bizarre and aggressive behaviours which contained of an attempt of harming self or others. In short, the HCPs able to perceived common indicators to differentiate postnatal anxiety, depression, and psychosis. The explanations of the causes of these indicators will be discussed in next theme.

4.3 THEME 2: PERCEIVED CAUSES OF POSTNATAL MENTAL ILLNESS

As discussed in the first theme, HCPs described the general indicators of PMI and how they differentiate the types of PMI based on the indicators presented by the women. The postnatal mothers also shared their experiences on the general symptoms they had based on their phenomenon. Thus, in this theme, explanations of the reasons for these indicators to be appeared will be provided. The analysis from the HCPs' and postnatal mothers' interviews described in three interrelated causes which are sociocultural factors, psychological factors, and biophysical factors.

4.3.1 Sociocultural Factors

Sociocultural factors were widely discussed by the HCP's and postnatal mothers in this interview. It was covering two categories which are social circumstances and traditional postnatal taboos and practices. These elements were describe as being related to the

PMI. Regardless of the personal backgrounds, all interviewed participants had talked about these elements.

4.3.1.1 Social Circumstances

When the participants were asked about the reasons contributing to the PMI, all of them had linked it with the social circumstances of the mother. It includes lack of support especially from their spouses or family members as well as financial issues. Despite acknowledging their roles in managing and supporting the women throughout antenatal and postnatal care, HCPs believed that support from the husband is the most essential factor in preventing PMI.

Mothers need support. She has been on her own during pregnancy and now (after giving birth) she needs help both physically and emotionally from the others. The one who can help is her husband. Husband plays an important role here. (HCP 5, FMS)

Additionally, a nurse emphasized that although a woman was supported by the health care personnel, without proper support system from family members they still vulnerable for the PMI:

Postnatal mental illness is closely related to the support from the family members particularly the husband. Support can be either emotionally, socially or physically. Most of the cases of the mother with PMI had lack of support from the husband and family members. Even we had done home visit and give extra attention to her, if she does not get any support from the family members during postnatal period, she still might end up with mental health problems (HCP 11, Nurse)

Some of the HCPs also associate PMI with lack of understanding from the husband. They believed that women will suffer from the emotional distress if she had incomprehensible husband, lack of support and was burdened with multiple tasks.

Most of them came with household issues. She had complaint that her husband does not understand her, does not give attention to her. He is not only going out to work but also hanging out with his friends. So, the mother feels like no one taking care of her, no one want to help her. She feels stress, tired. She needs to do everything without any help from her husband (HCP 17, Psychiatrist)

Furthermore, some HCPs had mentioned that Malaysian culture had viewed husband as the breadwinner and they usually give financial support only, thus neglecting other types of support such as physical and emotional support, whereas the wife is viewed as homemaker who are managing the family and household.

Like our culture, most of us view women as the one who need to take care of their child. The husband will not interfere with household chores. Thus, during postnatal period the mother will feel stress as she need to take care of the child as well as doing her routine household chores (HCP 26, FMS)

However, in this interview, all postnatal mothers had stated that they had a good support from both families and healthcare practitioners. One of the participants had mentioned that she received emotional support from her parents, husband, siblings as well as healthcare practitioners even though she had scolded and fight with them. These supports make them sought for treatment.

I told my sibling about my condition. They are the one who advise me to seek for treatment. Thus, I took an initiative to get an appointment with a psychiatrist (PM 1).

There was a time when I chased out my mom and my husband from the house. I curse them, but after a while they came back and let me calm down. They advise me to see a doctor. The doctors give his advice and help me (PM 4)

Furthermore, there is mixed opinion regarding on staying with family members during postnatal period. It could bring positive or negative effects to the postnatal mothers depending on the situations. Some participants in both groups – HCPs and postnatal mothers appeared to believe that families will make the women feel like being taken care of as she can rely on the others and asking for help in managing their child.

We tend to see postnatal mothers are sent to their immediate family or having someone close coming to stay together. They will have people who look after them and their child, even those who took care of their household matters like cleaning and cooking (HCP 17).

I am blessed as my mom helping me in taking care of myself and my child. She was making some soup early in the morning for me (PM 6).

On the other hand, some of the participants collectively agreed that staying with extended family negatively affect the mothers especially in unsupportive environment. It could be a factor that precipitate PMI.

Big family with many siblings and then in-laws could cause misunderstanding since different people come from different social stand point. Less support or bad mouthing is common especially when the mothers is from poor financial background and had poor family planning (HCP 11)

In addition, postnatal mothers had claimed that she was unable to get a good rest when living with her extended family during postnatal period resulted in emotional distress.

I did not have any problem with my child as she did not cry much but I feel my niece and nephews being a nuisance. They are super noisy and I cannot take it. I cannot rest (*sigh*) (PM 4).

Besides, financial status also might play a big role in determining the cause of PMI. Some HCPs had discussed that poor financial management directly contributes to PMI. This issue was also mentioned by the postnatal mothers. They had difficulties when they were unemployed as they are solely relied to their husband to provide them with the necessities.

Some husbands are lazy and poorly manage the money they earned. He went for gambling or splurging on unnecessary toys for the kids... This is worsened by lack of money to address their needs and basic necessities such as food and clothing (HCP 10, Nurse)

A mother also reported that she was worried and feel difficult with her financial situation as she cannot work during her confinement period which contribute to her PMI.

I took loan to get married. Now I cannot go for work as I need to take care of my baby. If I am working, I have my own salary, but now... I am worried. It is difficult (PM 3)

In addition to the social circumstances, cultural and spiritual practices seemed to be another cause contributing to PMI among postnatal mothers. Some practices have not fully accepted by the women, hence emotional distress was occurred.

4.3.1.2 Traditional Postnatal Taboos and Practices

Traditional postnatal taboos and practices refer to myths and non-specific practices set up by the older generation since time immemorial. It had been handed down from one generation to another generation. These taboos and practices which abstained the women from doing some activities during postnatal period can be based on facts, beliefs or practices arising from the family, community or even racial or religious groups. For example, Malay women is expected to be confined in her house for at least 40 days after delivery, Chinese women were not allowed to take a cold bath and Indian women were not allowed to consume “cold” food. Usually, these taboos and practices were said for the sake of mothers and child well-being. In Malaysia, women were commonly taken care of by their families during postnatal period. Thus, a conflict pertaining to tradition and modernity belief of postnatal practices occurred between the younger and older generation which might be the cause of PMI.

From the analysis of this interview, there is a mixed opinion pertaining to the traditional postnatal taboos and practices. Some of the participants believed that it could be one of the contributing factors of PMI and some of them believed otherwise. However, more than half of the HCPs had discussed and explained how these traditional postnatal taboos and practices could lead to PMI.

The most common element mentioned was about postnatal diet. Traditional practice was described to restrict the mothers in consuming certain types of food such as fruits, vegetables, and fish. They also need to limit their fluid intake. Most of the HCPs widely believed there is a tight restriction on the food choices in all races, however categorization of the food varies. These might be the causal of other negative effects such as lethargy and reduced breast milk production. A psychiatrist reported:

It can be a bit stressful during confinement period. Sometimes they have to restrict their fluid intake or their food. All those kinds of things might become contributing factors of mental health issues. Basically, when you are dehydrated or get less nutrition you will feel tired, but you still need to breastfeed your child. You might not even have enough breast milk to feed your baby which can cause some issues later on (HCP 16, Psychiatrist)

Another psychiatrist mentioned that strict postnatal diet might affect the women's mood as eating something that you like will make you happy. It will help in improving their mental health status and prevent them from getting PMI.

... actually, eating something you like is a relieved right? Like you will feel happy. So, we will advise them to follow their normal diet as much as they can, if they get the chance (HCP 21, Psychiatrist)

In addition, the presence of elder generation either biological mother or mother-in-law during postnatal period was also described as a source of emotional distress mainly because of their different point of views on certain issues. According to HCP 13, a mother was distressed when her mother-in-law had controlled her diet during confinement period as it was conflicting with her knowledge and point of views but she still needs to abide to this rule.

My patient is an educated person. She had read that she can consume anything during her postnatal period. But then, when she was staying with her mother-in-law (MIL) during confinement period, her MIL said, she needs to restrict her fluid intake. You cannot eat this, itch. You cannot take this; it will affect your baby. She was stressed. When we ask why she look unhappy she replied, "is it true we cannot drink water? Is it true we cannot eat this? Then how can I breastfeed my baby". She started to cry (HCP 13, Nurse)

Another nurse further explained that some postnatal mothers had conflicting views with the elder generations resulted in emotional distress.

... there will be contradicting ideas between daughter and the mother. Her mother was so conventional and strictly follow the traditional practices while she preferred modern ways. Thus, this conflicting view make her stress as she need to follow what her parents said (HCP 27, Nurse)

Examples describe above allow an interpretation that a woman is more likely to become distressed when the practices are contradictory to her personal preference, and where they felt they were powerless to reject it.

Nevertheless, there are mixed opinions on traditional practices related to physical recovery such as warm compression (bertungku), body massage, herbal bath, and abdominal binding (bengkung). Some HCPs believed that these practices can act as

a relaxation therapy which help the mothers to relieve stress and promote their mental well-being.

... traditional medicine, body massage, warm compression, all of that can be a treatment, like a stress reliever. Most of them were enjoying it. It was like being pampered by the family (HCP 17, Psychiatrist)

However, a nurse argued that these practices might also cause an emotional distress if the mother was forced to do it. Some mothers were not keen to do warm compression or taking herbal medicine as they do not like it. A nurse explained:

... For example, people around us ask us to do it such as warm compression, taking traditional medicine but in fact we did not even like it. These things sometimes might affect our mental health. If we cannot accept it but being forced to do it, we become depressed, stress, pressured... (HCP 14, Nurse)

Based on this account, traditional practices might or might not contribute towards development of PMI depending on the women's personal approach and the way they accept the practices. This issue was also stated by HCP 22 whose agreed that traditional postnatal taboos and practices might affect postnatal mothers' mental health depending on their acceptance of these culture:

Cultural background might affect their mental health as every race had their own taboos and practices during confinement period. Sometimes, the ancestral advices might make them anxious or might calm them. I'm not sure which one, but it depends on their culture and how they practice it. (HCP 22, Psychiatrist)

On the other hand, HCP 2, a psychiatrist had stated that this issue might not become the main contributing factor to PMI. She had reported that throughout her career journey, no one had ever complained that their disorder was related to strict postnatal practices.

Apart from that, all HCPs viewed that there was no association between races and PMI. According to them, it was hard to conclude which races is more susceptible to get PMI than another since Malays is the largest races compared to Chinese and Indian.

I used to have this kind of thinking that this race, this culture has it most. But, after being in this unit for 13 years plus, I would say that, we do not have that kind of thing. I do not think we have association between race and mental illness (HCP 18, Clinical Psychologist)

However, most of the HCPs stated that there is a relationship between spirituality and PMI. Some of them believe that postnatal mothers' spirituality might affect their mental health.

Undeniably, spiritual or belief might influence our emotional well-being. Especially for those with mild symptoms. Spirituality can generate peace and reduce the anxiety. It is considered as one of the therapy methods... (HCP 22, Psychiatrist)

Meanwhile, some of the HCPs relates spirituality with certain rituals in a religion. For instance, a nurse (HCP 13) stated that even the women were in a confinement and cannot read Quran, she can do *Zikr* as an act of remembrance. *Zikr* will bring them closer to God, while HCP 4 relates it with *Salah*.

Spirituality is depending on the faith. For example, if you are a Muslim, you need to perform *salah*. So, we will advise them to pray. Same goes with other religions as spirituality plays an important role in determining mental health status (HCP 4, Psychiatrist)

4.3.2 Psychological Factors

Psychological factors are the elements which develop the women personality depending on their thought process, expectation and problem-solving skills. This subtheme concerns the participants descriptions of how psychological factors affecting the development of PMI in postnatal mothers. It was covering two categories which are transition to motherhood and preparation as a mother.

4.3.2.1 Transition to Motherhood

This category includes participants explanations on how the difficulties faces by the women during their journey to motherhood affected the development of PMI. Both groups of participants believed that development of PMI in women were influenced by

how they adapt with various changes during transitional period to be a mother which begins from pregnancy until after childbirth. It includes difficulties with childcare, lactation problems as well as body image.

Most of the HCPs stated that the demands of child care was challenging to the mothers especially when they need to adapt with the changes of sleeping time. Most of them had develop some emotional distress due to sleep deprivation when taking care of their new-born. A medical officer (HCP 3) mention that:

After delivery, a mother will feel the changes. From childless to someone with a child. So, there is major changes psychologically. From a good night's sleep to a sleepless night. It was mentally tortured, right? (HCP 3, Medical officer)

One of the postnatal mothers also explained that she was exhausted due to lack of sleep which might be the cause of her development of PMI.

During confinement period I need to stay awake. My baby did not want to sleep. I feel stress and start to think negatively. With my current condition I feel exhausted. I did not get enough sleep. Maybe this is one of the causes. (PM 1)

Additionally, PM 5 was concerned about her time management between working hours and child care. She keeps thinking about how she can spend her time with the child when she starts working. This makes her feel anxious and easily agitated.

Furthermore, the HCPs also explained that the development of PMI in postnatal mothers might be cause by lactation problems. Most of the mothers want to exclusively breastfeed their child. However, at some point the mothers might face some struggles which make them unable to breastfeed the child such as sore nipples, engorge breast and insufficient milk supply. These struggles might negatively affected mothers' mental health.

Besides, it might be cause by lactation problems. After deliver, the mother might find it is difficult to breastfeed her child due to insufficient breastmilk or breast engorgement. So, she will feel sad and stress (HCP 17, Psychiatrist)

Apart from that, some HCPs had mention that the acceptance of their body image might contributed to the development of PMI. Pregnancy and childbirth cause a dramatic change in women's body shape and size. Some women perceived these changes negatively. As mention by a nurse:

There is a change in her. She used to have a beautiful body. After giving birth she became like that. She thinks her husband did not love her anymore. She thought all kinds of things. It makes her feel restless and depress. (HCP 10, Nurse)

In addition to the adaptation during this transitional period, preparedness and expectation to be a mother might be another cause contributing to PMI among postnatal mothers.

4.3.2.2 Preparation to Be a Mother

The HCPs believed that the development of PMI in women were influenced by the individual condition, her preparedness and knowledge of the situation as well as her psychological condition. Some HCPs indicates that being a first-time mother might expose a woman to PMI. First time mothers were described as easily distressed due to inexperience and lack of knowledge in child care which contributing to PMI.

...especially if they are first-time mothers. They were inexperience and had lack of knowledge in managing the new-born. Thus, they easily feel stress. (HCP 26, FMS)

Furthermore, some HCPs mention that PMI can be avoided if a woman was ready and had early preparation to be a mother. A woman who plans her pregnancy, gain knowledge related to pregnancy and childbirth, and making preparation physically, emotionally as well as financially reduce the chances to get PMI.

The preparation should begin before pregnancy which mean the mother need to know and prepared for her pregnancy journey...she needs to knows important information about her emotional well-being, feelings or maybe thoughts to be a mother. So, she will feel less anxious. (HCP 17, Psychiatrist)

Additionally, an unplanned pregnancy might become a contributing factor to PMI. Some HCPs associate an unplanned pregnancy with single or unmarried women while others associate it with poor family planning. Nevertheless, both groups of women were viewed as hardly accepting their pregnancy and the birth of the baby, hence being at risk of developing PMI.

If it is an unplanned pregnancy, we need to assess their social and psychological history. Is she married? Or is she a single mother. Does she have any other problems? Was she raped? All of this might be a contributing factor. (HCP 24, O&G Specialist)

She unable to cope with taking care of many children. It is an unplanned pregnancy. So, they were unprepared. Some of them had requested a termination of pregnancy. They were not ready. (HCP 22, Psychiatrist)

Even though there are few circumstances that might cause PMI among postnatal mothers, some HCPs had suggested that the mother's personality might help in resolving emotional distress. How a mother cope with coping strategies should be can be according to HCP 1, good stress management and coping mechanisms can help in resolving their emotional distress during their confinement period. HCP 7 had also mentioned that a woman with poor coping skills will end up with PMI.

4.3.3 Biophysical Factors

In this section, the HCPs had discussed how PMI was linked with biological and physical conditions. It includes hormonal changes, history of psychiatric illnesses either underlying or genetic inheritance as well as childbirth and postnatal complication. Although biophysical factors had been widely mentioned in the HCP's explanations but it was not well defined as this factor more to the fact and straightforward causes. Comparatively, they appeared to discussed more about sociocultural and psychological factors of the women in their explanations.

4.3.3.1 Hormonal Changes

Some HCPs had explained that there is an association between hormonal imbalance and emotional disturbance as quoted below

Theoretically, it was caused by the hormone. After delivered, estrogen and progesterone will drop. These hormones play important roles in controlling the emotions. It will take 3 to 6 months for these hormones to be in normal range again (HCP 4, FMS).

4.3.3.2 History of Psychiatric Illnesses

Additionally, more than half of the HCPs believed that history of psychiatric illnesses either it was underlying or genetic inheritance is a contributing factor for PMI in postnatal women. The presence of the mental illnesses such as Major Depressive Disorder (MDD), Bipolar, or Schizophrenia prior to delivery or having family history of such illnesses was believed to contribute in the development of PMI.

If a patient is a known case of major depressive disorders (MDD) or had the previous history of postnatal blues, depression or psychosis, the tendency for her to have it during the current pregnancy, current delivery or post-delivery is high, so we have to be aware of this (HCP 7, Psychiatrist)

4.3.3.3 Childbirth and Postnatal Complications

Furthermore, HCPs also discussed that childbirth and postnatal complications as one of the causes of PMI. It can be due to perinatal death, complicated delivery, postnatal haemorrhage, or pain. All of these factors were considered to create stressful feelings for postnatal women which can be contributed to PMI.

For example, she supposed to deliver normally, but then develop complication and need to use vacuum or forceps. She might have haemorrhage and required to go to OT for repair. Or suddenly, the woman needs to undergo c-sect and become traumatic. After delivery she feel pain and have difficulty in movement. All of these will influence them. (HCP 23, Psychiatrist)

4.4 THEME 3: ROLES AND CHALLENGES IN POSTNATAL MANAGEMENT

The main concerns of this third theme are related to HCPs explanations of their current practices on postnatal care for the mothers as well as their views on psychiatric assessment and referral. The management of PMI were not based on the causes as explained in 4.3 but rather on the indicators presented by the mothers (see 4.2.2). It also resulted from the individual interpretation and perceptions of the signs and symptoms. Thus, the following two subthemes will provide HCPs point of views on their roles and responsibilities as well as challenges in managing women with PMI. These views resulted in recommendations of potential mechanisms that might help bring a better future for postnatal mothers.

4.4.1 Health Care Roles and Responsibilities

When the HCPs were asked about their assessment and management of PMI in the healthcare setting, most of them primarily talked about how they recognised the signs and symptoms and the action taken based on their assessment. They also had mentioned their limitation for early detection and intervention of PMI. However, almost all HCPs believed that postnatal care in Malaysia healthcare setting is holistic and able to help the HCPs in detecting PMI among postnatal mothers.

4.4.1.1 Clinical Judgement

Most of the HCPs conceived that they need to used their clinical judgement to detect PMI. Clinical judgement of the HCPs means their analysis, evaluation, or prediction of the presenting signs and symptoms in postnatal mothers. Some HCPs had mentioned that they were able to recognised early signs and symptoms of PMI based on facial expressions, physical appearance, or normal conversation between them and postnatal mother. Once they had detected that the mother was unwell, they will further investigate by collecting the data through interview session with the mother. Then, they will refer them to either clinical psychologist or psychiatrist if needed based on their assessment.

When we see patients, we will review them as a whole. We might not use any tools to detect PMI. We just review them generally. We look at their appearance or through conversation such as “How are you today?” “Do

you get enough rest?”. If they said they unable to rest, to sleep, we would ask why she cannot sleep and so on. Sometimes, the mother would express their emotional distress. “I am stressed”. So, from that point we will further investigate. Then, we will decide either she need referral or not. (HCP 8, O&G Specialist)

However, some HCPs believe that clinical judgement is a subjective matter and it depends on the individuals’ experience to interpret it.

I think more experience is a better tool to assess PMI. It is a subjective thing and you need to experience it. You see the mother before delivery, then she delivered the baby, the next day her attitude changed. She might look like this or like that. The experiences differ. (HCP 20, O&G Specialist)

Despite acknowledging their roles in recognizing a mother with PMIs based on the symptoms presented by the mother and from interviewing them, HCPs believed that they might need family involvement in postnatal management. Sometimes, information from the patient was insufficient and they need another person to describe the changes. Furthermore, family involvement is important in monitoring and improving postnatal mothers’ mental health status.

When we talk about clinical assessment in psychiatry, apart from interviewing the patient which might not having enough information for the diagnose, we need to called up the family... We need an account from another person to monitor the changes. (HCP 21, Psychiatrist)

Besides, almost half of the HCPs believes that nurses play an important role in detecting early symptoms of PMI as they were the closest HCPs who care for postnatal mothers. A nurse will manage the mother from their antenatal booking until after childbirth. This will facilitate good rapport and build trust between nurses and mother which helping them for early detection of PMI’s symptoms and initiate further action. Thus, they were able to detect any obvious changes either physical, psychological or behavioural throughout this period.

During home visit the nurse will ask about mother’s conditions. Or maybe during antenatal or postnatal check-up. They will assess patient’s condition from time to time. So, if they found any abnormality during routine check-up, they will refer it to the medical officer. (HCP 26, FMS)

In addition, two out of six postnatal mothers also shared their experience with the HCPs. Both of them was asked by the HCPs about their condition during postnatal visit at the clinic. From that point, they had shared their thought and symptoms which lead them for further treatment.

She asked “are you ok?”. I started to tell my story and then she had assessed my condition. (PM 4)

Even though, the HCPs realized the importance of their roles in assessing and detecting PMI, the availability of resources also plays a major part in early assessment and detection of PMI.

4.4.1.2 Availability of Resources

Resources can come in a form of materials, staffs, or assets which help a person or organization to function effectively. In terms of materials almost half of the HCPs had used DASS as an assessment tool to assess mental health status among postnatal mothers. Some HCPs believed that DASS was good enough to detect depression, anxiety and stress. It was especially used at primary healthcare setting for screening purposes before HCPs referring them to the specialist. However, the mother will need to go through thorough assessment and investigation to be diagnosed with one of the PMI.

They usually used DASS for screening. If they think that the mother was stressed, anxious or depress they will refer them to the FMS or directly to us, psychiatrist, for further management. But DASS is only used for SCREENING purposes. (HCP 17, Psychiatrist)

I think, DASS is a general screening tool that can be used by everyone. It has the same format and it is good enough to be use for early detection of depression, anxiety and stress (HCP 9, Nurse)

Some HCPs used other types of assessment tools such as Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI) or Edinburgh Postnatal Depression Scale (EPDS) to assess PMI among postnatal mothers.

Usually, we will use BAI and BDI for depression cases. Sometimes, we will use EPDS. It depends... (HCP 2, Psychiatrist)

On the other hand, staffing, namely psychiatrist, counsellor, and psychologist plays another crucial role in managing PMI. Though nurses or medical officer are there for early detection and assessment, the availability of other healthcare personnel is needed for continuation of care. Some of the HCPs had mention that there is an improvement in the mental health care system in Malaysia. Nowadays, they had a team which include obstetricians, family medicine specialist, psychiatrist, psychologist, medical officers, nurses, occupational therapist and medical social workers who provide continuity of treatment in an easier and accessible manner.

Here, we have all of those professions. We will refer to counsellor if she has social problems, or to psychologist if she needs psychological counselling. We might refer her to psychiatrist if she need medication or was diagnosed with any mental disorders. Sometimes we refer her to occupational therapist for breathing exercise or relaxation therapy. Teamwork (HCP 5, FMS)

Despite vast descriptions on roles and responsibilities that HCPs perceived as being helpful in managing and preventing PMI, they also discussed the challenges they experienced as well as recommendation to improve mental health care among postnatal mothers. The following section discusses these challenges and recommendations, as presented in the HCPs explanations.

4.4.2 Challenges and Recommendations in Managing PMI

HCPs had explained that there were several challenges that they had in providing care for postnatal mothers with PMI. The challenges mainly came either from the boundaries within their professional scopes of practice or from the boundaries within the healthcare system. Thus, numbers of recommendations suggested by the HCPs for the future.

4.4.2.1 Professional and Social Boundaries

As PMI, for now is widely assessed by clinical judgement, experience is the key for its early detection. According to HCP 24, younger generation of HCPs, undoubtedly lack the essence of experiences and sensitivity to help them to be suspicious for hints of PMIs when dealing with patients. They seemed convinced that they were more concern on the physical health compared to the emotional well-being. Thus, they had lack of exploration in that area.

Challenges? We need to explore the patient...so we need to have high index of suspicion. But our young doctors did not have that. They rarely took social history. They had focused on the clinical part and only manage that part which mean if patient came due to certain disease, they only treat that particular disease... (HCP 24, O&G Specialist)

This is worsened by the lack of interaction with patients due to time constraint, either from HCPs or patients' side. The HCPs might lack of time due to the large numbers of patient that need to be treat in a day while the patient might lack of time because she came for another reason such as neonatal jaundice check-up. Simple agreements or nodding to simple questions leads to insufficient details to assess the patient condition. To diagnose PMI is not as simple as diagnosing clinical diseases. The HCPs need to explore, built rapport, counsel, and might need family involvement to get the diagnosis.

The main challenge is time. We cannot spend an ample time with the patient as we had a lot of patients in a day. Thus, we did not think to assess their mental health status. We might miss this type of patient especially postnatal mothers because they came for other reasons such as immunization or neonatal jaundice. It also hard for us if the mother unwilling to share their problems. (HCP 26, FMS)

HCPs had also reported that there was no specific assessment tool available in addressing PMI among postnatal mothers was used in their setting. It was supported by the mothers who claimed that they had not fill up any assessment tools prior during their visit to the MCH or hospital.

So far there was no specific screening tools to be used in our clinic to detect postnatal mental illness (HCP 14, Nurse)

As far as I remember I did not answer any questionnaire to check my conditions during my postnatal visit at KK (PM 1)

As mentioned in 4.4.1.2, almost half of the HCPs used DASS to assess PMI among postnatal mothers. However, DASS is not a specific tool for PMI and it was applied in general setting. It also not locally designed here, so it might lack representation of our culture.

They don't have any tools to measure psychological status and DASS was used in general population... I think the tools that we have now is not locally designed. We might have cultural factors that affecting them. (HCP 19, FMS)

Additionally, DASS is generally used in clinic setting such as MCH clinics and Specialist clinics and occasionally used in ward setting. Most of the HCPs in wards did not used any screening tools to detect PMI among postnatal mothers.

As we can see, DASS was widely used among postnatal mothers at MCH clinics and Specialist clinics such as O&G clinic and Psychiatry clinic. But it was rarely used in ward (HCP 6, Medical office)

On the other hand, BAI, BDI and EPDS were rarely use at primary health care setting as most of the HCPs at primary care were not familiar with it.

But I think all these tools were rarely use at MCH clinics as there is lack of exposure in this matter (HCP 2, Psychiatrist)

It was not only mentioned by the HCPs but also by postnatal mothers that they were no assessment tools used prior interview session with the HCPs. Thus, there was no proper guideline available to be relied upon in adopting an assessment tool.

I did not fill up any questionnaire. The doctor only asks me about my feeling, "why did I feel like that? I just realized all of this happen after my delivery. It is only through conversation between me and the doctor (PM 1)

Besides, some HCPs felt a sense of uncertainty in making a referral due to unclear guideline in the management of PMI which cause confusion in the pathway of the

referral. It makes them ponder whether which types of cases should be referred to the counsellor, clinical psychologist or psychiatrist.

Even though we suspect that the mother will need further referral, we were felt in doubt, 50-50, to which specialist we need to refer. Psychiatrist? Psychologist? If you asked me, I am unsure about that too (HCP 24, O&G Specialist)

However, most the HCPs agreed that an act of referral to counsellor or psychiatrist was stigmatised by the majority of Malaysian public. The societal perception for this act as a treatment for “crazy women”. Thus, most of them rarely compliant with the referral to counsellor or psychiatrist.

When we trace, we found out that she had defaulted the appointment because she feels embarrassed. She had panic disorder and she feel that way. How about those who have Schizophrenia? It will be much more. Societal perception and stigmatism towards her are “she is crazy”. (HCP 13, Nurse)

Moreover, women and society had also regarded as not being aware of treatments for PMI. This was viewed by the HCPs as resulting in traditional treatment instead of professional treatment. They had reported that once the traditional treatment was failed or their condition was worsening only then the women will seek for professional advice.

Stigma is still there. Most of the community did not know about mental illnesses. When a mother had PMI, they will bring her for traditional treatment first. That is why most of the cases seen by us were in a severe condition. Once it cannot be treated by the traditional healer only then they will come to us. (HCP 17, Psychiatrist)

HCPs explanations presented above indicates that there were various roles, responsibilities and challenges in managing women with PMI such as lack of clinical judgement skills, unavailability of specific assessment tools and guideline, limited accessibility of the experts, time constraint, and societal perception on referral and treatment of PMI. Based on these points, HCPs had recommended potential mechanisms that they perceived would be helpful in the future.

4.4.2.2 Potential Mechanisms

Recognising their boundaries in detection and management of PMI, HCPs believed there are few potential mechanisms should be implemented in current healthcare setting including utilizing proper assessment tools, improving HCPs knowledge pertaining to PMI through training and continuous education, as well as increasing awareness amongst community. First of all, the necessity of proper assessment tool was repeatedly expressed as a mean to optimise the detection of PMI among postnatal mothers. It was needed to helps in detecting mild symptoms of PMI as well as evaluating patient's mental health status objectively.

I think we desperately need an assessment tool to assess PMI among postnatal mothers because sometimes it is only mild symptoms which hardly detected especially at primary care setting (HCP 22, Psychiatrist)

We need an objective screening tool which able to evaluate patient's mental health status. For example, pain can be measured objectively with pain score 1 to 10 but for mental health it was too diverse (HCP 6, Medical Officer)

In addition, some HCPs proposed to improve existing assessment tools to be specifically used for detection of PMI among postnatal mothers. It also needs to be simple and precise without lengthy questions as it mainly used by the nurses in primary care setting.

We do have DASS as our assessment tools. But there are few adjustments need to be done to improved it for assessment of PMI specifically for postnatal mothers. I mean it should be simple and less questions. It should be easily use by us. (HCP 28, Nurse)

Furthermore, some HCPs suggested time frame of the assessment is from as early as antenatal period up to few months after childbirth for optimisation in detecting PMI. Early assessment was suggested to provide a baseline data in comparison of later stages post-delivery. It was seen as beneficial for risk assessment during early stage of pregnancy for further management during postnatal period.

So, if we use an assessment tool, we can do a preliminary screening. Thus, early intervention can be done. Instead, it should be done during antenatal stage to prevent the worsening of mental health status of postnatal mothers during postnatal period (HCP 22, Psychiatrist)

Besides, HCPs also believed that proper training and continuous learning is required to overcome those boundaries. Formal training was seen as a mandatory factor to enhance decision making in detection and management of PMI among postnatal mothers. Most of the HCPs said that they were not taught or minimally “touch” about PMI during their formal training or post basic courses. They had gained their knowledge either through continuous education programmes or experiences. This topic should be extended to provide clear understanding of PMI among future HCPs

As far as I know, there were no specific course was given to the nurses about PMI even during our post basic courses. We only learned about it if there is a case. Maybe it should be included in our syllabus (HCP 9, Nurse)

Thus, some of the HCPs suggested that scheduled talks or courses related to PMI should be conducted to upgrade and refreshed their knowledge. These types of programmes will help in empowering maternal mental health care in our current healthcare system. Additionally, every HCPs should aware the importance of early detection of PMI among postnatal mothers because it will help in early treatment and prevent the condition from worsening.

It was great if we can educate and empower our staff especially in primary care setting about mental health issues in postnatal mother, so that they were aware about early symptoms during their visit and do the needful... (HCP 16, Psychiatrist)

Furthermore, HCPs should educate and spread awareness among community about PMI as it was not uncommon. It can be done by sharing information through mass media, news or info graphic. Once community aware and acknowledge about mental health issues, stigma around mental illnesses will be lessened.

Education, knowledge, and awareness are important. We can include mass media, news and etc to spread awareness among them... Educate the public about mental health issues so that they will acknowledge about it (HCP 7, Psychiatrist)

Other HCPs also suggested to educate about motherhood journey or parenting skills to parents-to-be during antenatal period or as early as pre-marital session thereby they had better preparation and expectation before having a child.

I think early education and awareness is very important. If there are any programmes about parenting skill it should be given prior conceptions. May be during pre-marital course. (HCP 5, FMS)

This chapter has presented the study findings based on the analysis of interview transcripts of HCPs and postnatal mothers. The indicators of PMI in women were reported based on behavioural changes, emotional changes as well as somatic symptoms. The most common symptoms mentioned by the participants were a lack of interest in taking care of the child or themselves as well as self-isolation.

From this analysis, most HCPs acknowledged postnatal anxiety as one of the PMI which either can be appeared concurrently with postnatal depression or not. The most common indicators of postnatal anxiety are worry, anxious, palpitation, and overthinking. The participants also described that the women with postnatal depression will show depressive symptoms such as lack of interest, lack of motivation, self-isolation, hopelessness and guilt feelings. These depressive symptoms can be accompanied with negative thought or ideation of harming self or others. However, if the women start developing postnatal psychosis, she will show symptoms of hallucination and delusion. They might also have bizarre and aggressive behaviours which contained of an attempt of harming self or others.

The reasons for these indicators appeared in postnatal mother were described in three interrelated causes which are sociocultural factors, psychological factors, and biophysical factors. Most of the HCPs perceived lack of support as one of the main causes for PMI. However, there are mixed opinions related to postnatal taboos and traditional practices either it might contribute to PMI or not. The readiness and adaptability to be a mother were also mentioned by the participants as the causes of PMI in this chapter.

Despite recognizing the symptoms and causes of PMI, the HCPs acknowledged the challenges in managing PMI among postnatal mothers. They had identified that a sound clinical judgement requires years of clinical experience apart from knowledge. They also had mention that there is no specific assessment tool available which can help them in assessing PMI in postnatal mothers. In the next chapter, the study findings will be further discussed.

CHAPTER FIVE

DISCUSSION

5.1 INTRODUCTION

This study was driven by a lack of evidence on suitable assessment tools used to measure postnatal mental illness (PMI) among Malaysian postnatal mothers. While it has been known that the experience of PMI may not be equally interpreted from one culture to another, almost all existing assessment tools to assess PMI were developed based on western perspectives. As such, using these tools may not wholly capture the signs and symptoms of PMI among Malaysia women. While several qualitative studies available to understand the experience of PMI among postnatal mothers, there was limited evidence on how healthcare practitioners (HCPs) identify, interpret, differentiate and manage various types of PMI. Previous studies had suggested that fundamental understanding is required to ensure appropriateness of the usage of the assessment tools within local populations (Boateng et al., 2018; Hamilton & Finley, 2019). The need for research to bridge understanding of HCPs and postnatal mothers' perceptions on the assessment tools for PMI was therefore the main driver for this study.

The studies presented in this study explored the understanding and knowledge of PMI from the perspectives of HCPs and postnatal mothers in Malaysia. This study addressed questions about the views and knowledge towards PMI, how they perceived sign and symptoms and causal explanations of PMI, what are the resources available to assess PMI in Malaysian healthcare system, and what are their suggestions to improve assessment of PMI in Malaysia.

In this chapter, findings were discussed in relation to the research questions, existing literature and relevant theories/models. The findings of this study had contributed to the literature on assessment of PMI through four important points

- i. The HCPs and mothers had different ways of describing indicators of PMI, and their descriptions show different level of understandings based on their experience and knowledge. HCPs' views were based on their theoretical knowledge and experience in managing women with PMI, whereas mothers'

views were based on their feelings and first-hand experience. Furthermore, there is difference between different groups of HCPs such as medical doctors and nurses. Nurses appeared to have lack of knowledge about PMI and fully linked PMI to postnatal depression instead of describing other types of mental illnesses. Additionally, HCPs did not recognize postnatal blues and stress as a type of PMI, rather, they acknowledged them as adjustment disorders.

- ii. The most common factor contributing to PMI as discussed by both postnatal mothers and HCPs in sociocultural factors. However, they have different views in describing this factor. While HCPs believed that lack of support from the husband or family members is an essential factor contributing for PMI, mothers claimed that they had received enough support from both HCPs and families. There were also mixed opinions within and between HCPs and mothers whether staying with family members during postnatal period and traditional postnatal taboos and practices such as postnatal diet, warm compression (bertungku), body massage, herbal bath, and abdominal binding (bengkung) could lead to PMI. Nevertheless, both HCPs and postnatal mothers believed that development of PMI was influenced by adaptation and preparation towards motherhood journey.
- iii. Four main challenges to care and manage PMI within Malaysian healthcare system have been identified. First, HCPs appeared to rely on their clinical judgment to analyse, evaluate and predict the signs and symptoms presenting in postnatal mothers, reflecting their limited formal and scientific knowledge and experience in this particular area. Second, the absence of a specific assessment tool in addressing PMI was seen by the HCPs as one of the great challenges to identify and manage PMI within their respective clinical practice. Third, HCPs in this study reported that there were no clear guideline of referral pathway and management protocol specifically for PMI. Fourth, a collaborative effort through various medical disciplines (nurses, medical officers, obstetricians, family medicine specialist, psychiatrist, psychologist, occupational therapist and medical social workers) are required for addressing PMI.
- iv. This study had identified several potential mechanisms to improve assessment and management of PMI in Malaysia. This includes development of a ‘proper’

(new) assessment tool, additional training and continuous learning for HCPs pertaining to PMI and increase awareness in community about PMI as described by the HCPs in this study

The following sections discuss the above findings in relation to existing literature concerning the experience and understanding of PMI. It followed by the implication of this study and the development of appropriate care for postnatal mother.

5.2 DESCRIPTIONS OF SIGNS AND SYMPTOMS OF POSTNATAL MENTAL ILLNESS

The first finding of this study shows that the HCPs and mothers had distinct ways of describing signs and symptoms of PMI, and these their descriptions shows different level of understandings based on their experience and knowledge.

There were different levels of understanding of PMI among the HCPs based on their description itself. In this study, more than half HCPs unable to give clear description on postnatal mental illness and its' types with majority was from the nurses. It was in line with previous studies by Hassan et al. (2020) which found that doctors had a better knowledge about PMI compared to the nurses. Furthermore, HCPs tended to describe PMI by interlink it with postnatal blues, postnatal anxiety, postnatal depression and postnatal psychosis. Majority of the HCPs in this study appeared to have a lack of knowledge about PMI and often to describe it as postnatal depression, thereby omitting other types of mental illnesses that experienced by postnatal mothers.

In mental health literacy model, Jorm (2019), suggested that knowledge about mental health disorder helps in recognition, intervention and management of the disorders. This study found that only a few specialists who were able to give whole description and differentiate each type of PMI distinctly. Thus, insufficient knowledge of HCPs affects identifications of signs and symptoms of PMI which resulted in delayed detection, intervention and treatment for mental illnesses in postnatal mother. Previous studies had reported that PMI was underdiagnosis and undertreated due to limited knowledges and poor attitude towards postnatal mental health problems (Asare & Rodriguez-Muñoz, 2022; Mulango et al., 2018). Nevertheless, postnatal mothers in this study described PMI in a form of emotional states such as sad, anger and happy during

their postnatal period based on their personal experience. The topic of differentiating types of PMI was not highlighted among postnatal mothers as it requires medical knowledge and formal education on that matter.

In addition, this study found that both HCPs and postnatal mothers shared similar understanding of general indicators (signs and symptoms) of PMI, covering behavioural changes, emotional changes and somatic changes. For example, both HCPs and mother had recognized that lack of interest in the baby or in taking care of herself as well as self-isolating indicates that the mother was unwell. They had also share similar point of views in terms of emotional changes such as sad, depress, low mood, confused, worry, angry and easily irritated as the general indicators for PMI. This study found that both HCPs and postnatal mothers used the word 'stress' to portrayed their emotional distress or disturbance. They also mentioned that these changes usually came with negative thought process or behaviour which cause harm such as cursing, beating or hurting herself, babies or others.

Somatic symptoms mentioned by the HCPs also matched with the mothers' experience. Both groups of participants had acknowledged the symptoms of loss of appetite, fatigue, and sleep deprivation generally indicates of PMI. However, the HCPs had mentioned that they might viewed fatigue, and sleep deprivation as normal symptoms because it was common in motherhood unless severe. According to Jorm (2019) one of the important factors which lead to delays of recognition and treatment is when a person does not conceptualize the symptoms as a mental disorder. Most of the symptoms mentioned by the HCPs and mothers in this study were in line with the characteristics in DSM-V as discussed in Chapter 2.

Despite lack of conceptualization and knowledge on the PMI among the HCPs, most of them were able to recognized the indicators of common PMI such as postnatal depression, postnatal anxiety and postnatal psychosis. For instance, HCPs and mothers described a loss of interest to child and herself, self-isolation, demotivation, inability to concentrate, hopelessness, guilty and might be accompanied with negative thought of harming the child, herself or others as symptoms of postnatal depression, whereas the symptoms of postnatal anxiety includes worry, anxious, overthinking, fatigue, unable to concentrate, sleep disturbance, and panic like physical symptoms consistent with previous studies (Mohammad Redzuan et al., 2020). HCPs also described the

occurrence of hallucinations and delusions as postnatal psychosis symptoms. According to VanderKruik et al. (2017), clinical features of postnatal psychosis were mood-incongruent delusions, hallucinations or delusions of control which were often associated with infant and self-harm.

However, some HCPs mainly psychiatrist did not perceive postnatal blues and postnatal stress as a part of PMI, instead, they acknowledge it as adjustment disorder. DSM-V characterized adjustment disorder as emotional or behavioural symptoms occurred in response to the identifiable stressor which cause either functional impairment or distress. These symptoms will resolve within six month once the stressor has terminated (O'donnell et al., 2019).

5.3 PERCEIVED CAUSE OF POSTNATAL MENTAL ILLNESS

The second finding of this study is that there were different causal explanations for postnatal mental illness within HCPs and postnatal mothers. Thus, when comparing and contrasting the HCPs' and postnatal mothers' views on the causal explanation of PMI, there were several similarities and significant difference identified. For instance, in sociocultural factors, HCPs believed that lack of support from the husband or family members is an essential factor contributing for PMI but the mothers in this study claimed that they had received enough support from both HCPs and families which influencing them to seek for help. However, both arguments were supported by previous studies. Systematic reviews by Dadi et al. (2020) and Howard & Khalifeh (2020) showed that lack of support from close families is a significant factor contributing to PMI. However, another study by Daehn et al. (2022) and Jones (2019) found that social support and encouragement is the most commonly reported reasons for help-seeking behaviour among postnatal mothers.

In addition, there were also mixed opinions within and between HCPs and mothers whether staying with family members during postnatal period and traditional postnatal taboos and practices such as postnatal diet, warm compression (*bertungku*), body massage, herbal bath, and abdominal binding (*bengkung*) could lead to PMI. Although some of the participants viewed these factors bring positive effects to the mothers, the other viewed oppositely. This result is in accordance with a study by Qi et

al. (2022) which stated that interaction between woman's and family members during postnatal period is a major factor either contributed to or protected to PMI. Previous study found that excessive interference, conflicts about baby care and difference opinion in postnatal lifestyle may cause negative effects to the mothers which in accordance with the finding of this study (Qi et al., 2022). Nevertheless, a systematic review by Sator et al. (2022) reported that postnatal mothers felt satisfied with traditional postnatal practices as it lead to relaxation, they were able to get a good rest, and they appreciate older generations helps. However, according to Arifin et al. (2020), mothers may feel tense, stress and having emotional distress when they unable to reject traditional postnatal practices which can become contributing factors for PMI. Thus, either family involvement or traditional postnatal taboos and practices become a contributing factor for PMI is depending on the mother's personal acceptance towards these aspects.

Additionally, in terms of psychological factors both HCPs and postnatal mothers believed that development of PMI were influenced by adaptation and preparation towards motherhood journey. In this study, HCPs or mothers had mention about difficulties to make the transition to motherhood in terms of childcare, lactation, body image and preparedness due to unmet expectation. This finding is in accordance with a review by Huiling Ma Yedan (2020) which described that one of the causal of PMI is when women feel overwhelm and unable to cope with series of maternal problems when it was not in line with their expectations.

5.4 PERCEPTIONS OF HEALTHCARE PRACTITIONERS IN ASSESSING AND MANAGING POSTNATAL MENTAL ILLNESS

The third finding of this study is that the HCPs, appeared to rely on their clinical judgment to analyse, evaluate and predict the signs and symptoms presenting in postnatal mothers which requires knowledge and experience in this particular area to be able to diagnosed PMI. However, Noonan et al. (2018) had reported that HCPs were found had limited knowledge, awareness, recognition and experience in managing postnatal mothers as well as awareness on culturally specific issues which cause delayed intervention. Furthermore, study by Arefadib et al. (2022) also stated that HCPs who mainly relied on their clinical judgement tend to underrecognized mothers experiencing

PMI. Thus, relying solely upon professional clinical judgement might cause PMI to be underdiagnosed and undertreated among postnatal mothers. The HCPs should be able to identify maternal mental health status so that effective interventions can be done as soon as possible and can be easily integrated into the existing healthcare system if any abnormality was detected (Tripathy, 2020)

Besides, this study found that involvement of other healthcare personnel such as obstetricians, family medicine specialist, psychiatrist, psychologist, medical officers, nurses, occupational therapist and medical social workers are needed for continuation of care. World Health Organization (2022) had published a guide for integration of perinatal mental health in maternal and child health services as an approach on promotion, prevention and treatment of mental health conditions. This model would include a multidisciplinary team as stated above to assist in early identification and management of PMI which helps in improving mental health care services in the world including Malaysia (Raaj et al., 2023; Tripathy, 2020)

HCPs also mentioned that there were no specific assessment tools available in addressing PMI in current healthcare setting which helps them to assess mothers' mental health status postnatally. Some HCPs in this study used DASS as one of the assessment tools to assess PMI, but they acknowledged it was used in general population and not locally designed for postnatal mothers. It was consistent with the findings of previous studies which reported that although numerous systematic reviews had summarized the validity of assessment tools, there is still some uncertainty over whether it was appropriate for use in perinatal populations due to the breadth of data that is frequently spans in multiple demographic groups, nations, and screening methods (Smith et al., 2021). Despite various assessment tools identified (as reported in chapter 2), there were no tools assessing multiple types of PMI and mostly only focusing on postnatal depression (Ruslan et al., 2022).

In addition, HCPs in this study reported that there was unclear guideline of referral pathway and management protocol of PMI. A clear referral pathway should facilitate prompt intervention once mental health problems were recognized. It was in line with previous study by Noonan et al. (2018) and Orellana (2021) which stated that a lack of specific guideline and clear care pathway created a barrier for making an appropriate referral. Additionally, according to National Collaborating Centre for

Mental Health (2018), defined referral and management protocols for PMI will ensure effective transfer of information and continuity of care.

5.5 POTENTIAL MECHANISMS TO ASSESS AND MANAGE POSTNATAL MENTAL ILLNESS

Finally, this study has identified three mechanisms to assess and manage PMI. This includes a necessity of proper (new) assessment tool, additional training and continuous learning for HCPs pertaining to PMI and increase awareness amongst community about PMI.

Necessity of proper assessment tool was repeatedly expressed by the participants of this study as a mean to optimised detection of PMI among postnatal mothers. It was anticipated that this tool would help HCPs in assessing postpartum mental health status objectively. Previous researches had shown that the usage and standardization of assessment tools can assist in the identification, prevention and treatment of PMI among postnatal mothers (Doraiswamy et al., 2020; Nagle & Farrelly, 2018). However, it was recommended to examine the quality and diagnostic accuracy of that particular assessment tools before utilized it. (Larsen et al., 2021; Orellana, 2021; Ukatu et al., 2018). According to Viveiros & Darling (2019), even though some tools had been translated and validated it may be insufficient to detect PMI in a culturally diverse population.

HCPs in this study proposed that the assessment tools used in health care settings especially in primary care should be simple and precise without lengthy questions as time constraint is one of the challenges encountered by the HCPs. Such suggestions were consistent with the findings of previous studies which recommended a brief scale as a complex or time-consuming assessment tool will be of limited use and is unlikely to be maintained in routine care. It also take less time to administer in busy environments and less thorough training to use, especially by non-specialist health professionals (Fellmeth et al., 2021; Waqas et al., 2021). However, The National Institute for Health and Care Excellence (NICE) recommends that the best cost-effective screening strategy appears to be the combination of a brief assessment tool followed by a more formal examination (National Collaborating Centre for Mental Health, 2018)

Another proposed mechanism by the participants in this study was additional training and continuous learning for HCPs pertaining to PMI. This mechanism will assist HCPs in understanding of postnatal mental disorders for better assessment, identification and treatment of PMI especially in early stages. Raaj et al. (2023) had recommended regular workshops and continuing professional development (CPD) programmes about perinatal mental health problems to the HCPs particularly MCH staff to enhance the training process. Additionally, HCPs also need to received adequate training and supervision in using assessment tool, applying clinical judgement and referring to treatment process to empower maternal mental health care in our current healthcare system. It is believed that HCPs will be able to improve their skills and knowledge and gain competence and confidence in providing perinatal mental healthcare to the mothers once they received appropriate training and education (Coates, 2019).

Furthermore, increase awareness about PMI amongst community including postnatal mothers was also suggested by the HCPs as one of the potential mechanisms to improve assessment and management of PMI in Malaysia. The participants of this study had suggested that an extended health education can be shared through social networks services pertaining to postnatal mental health issues, motherhood journey as well as parenting skills. The HCPs in this present study believed that community awareness on PMI will help in reducing stigma about mental illnesses. It was also highlighted in other study which stated that misperceptions about mental health may persist as a result of a lack of knowledge among community about the range and treatment options for mental illnesses (Mccauley et al., 2019).

CHAPTER SIX

CONCLUSION

6.1 INTRODUCTION

Assessment of postnatal mental illness (PMI) among Malaysian mothers is required to identify women at risk of developing mental health problems, so that early intervention and management can be initiated. As discussed in chapter 2, several local studies have suggested the need to improve assessment and management of postnatal mental health issues in the Malaysian healthcare system. In this chapter, the researcher will conclude this study with strengths and limitations, implications of the study to the guidelines, healthcare practices, education and future research and finally recommendations for the future.

6.2 STRENGTHS OF THE STUDY

There are few strong foundations that became the strength of this study. First, this study had a rigorous and up-to-date review of the literature in a limited timeframe of 2010 till present. Thus, it was expected that by limiting the literature search to this timeframe would reveal the latest findings related the availability of assessment tools used to measure PMI. The included studies were critically analysed to identify the gap and justified the significance of the current study.

Additionally, this study had a large number of HCPs from different professional background, positions, and years of experience. This study also covers multiple clinics and hospitals from different states in four main regions of Peninsular Malaysia. Thus, it is believed that a comprehensive data from different types of HCPs all around the Peninsular Malaysia were obtained from this study.

Besides, this study had followed the methodological principle of instrument development which require combination of inductive and deductive method to identify the domains required in an assessment tool. The deductive method was completed through thorough literature search on existing scale as discussed in chapter 2, while the

inductive method was completed by in-depth understanding of the context generated by qualitative study as discussed in chapter 4.

6.3 LIMITATIONS OF THE STUDY

This study has set up a fundamental knowledge to initiate an appropriate assessment tool for PMI among postnatal mothers in Malaysia. However, several limitations should be considered. Firstly, this study required HCPs and mothers to express their views and thoughts in regards to PMI. The numbers of HCPs participated in this study was more than the postnatal mothers. Obviously, HCPs had come out with more detailed and professional views in this matter, compared to the mothers who had limited scientific knowledge and mainly responded based on their personal views and perspectives. Nevertheless, this study does not aim to compare between these two groups. Rather, it aimed to focus on the point of views from different groups who involved in the assessment and management of PMI.

Secondly, although this qualitative study could help in understanding the signs and symptoms of PMI experienced by the Malaysian postnatal mothers, the findings should not carelessly be used to generalised in other populations. Mothers in this study were predominantly Malay, hence it is crucial to further study if similar findings are also found in other sociodemographic groups. Finally, the perceived cause of PMI explained by the HCPs in this study did not allow any causal-effect relationship. Nevertheless, the findings were derived from the HCPs who are working directly with postnatal mothers in healthcare setting.

6.4 IMPLICATIONS OF THE STUDY

The current findings of this study have implications in Malaysia healthcare systems which includes guidelines, healthcare practices, education and future researches.

6.4.1 Guideline

This study recommends for refining of current maternal healthcare guidelines for clearer understanding of the PMI, ultimately to develop a clear screening program. A clear

guideline is required in addressing PMI. HCPs in this study appeared to understand the common symptoms of PMI, however there were confusion in differentiating the types of PMI. Apart from this, some HCPs were still divided in recognising postnatal blues and postnatal stress as part of PMI. Some HCPs were generalizing fatigue as common issue for mothers, irrelevant to PMI. Accounting those scenarios, a clear and standard guideline is required to allow HCPs to differentiate the symptoms uniformly, without divided thought. The guideline should consist of evaluation from physical health and physiological health, supported with incorporation of findings from interview with the mother and close family members. In cases where it would require further evaluation, the guideline should be able to identify when and who to be addressed by providing clearer referral pathway.

A referral pathway would require collaborative effort from multidisciplinary team of HCPs as each discipline plays specific but essential parts in addressing PMI. An assessment tool should be developed to be implemented with an established define guideline and pathway. Ideally, the tool should be able to assess different types of PMI in our multicultural population, as readily available tools are still lacking in this area.

6.4.2 Healthcare Practices

Findings from this study emphasized that HCPs should not merely make an assumption or using their intuitive thoughts or based on visible symptoms. Some PMI might observe similar traits, and obviously each of them has distinguished signs. HCPs should not solely focus on the physical or verbally informed symptoms but also be able acknowledge the physiological signs which not all HCPs are accustomed to. Other verbal input from close family members should also be taken into consideration, should the mother fail to either cooperate, misjudge or falsely report their wellbeing. Introducing the standard assessment tool to measure PMI might be helped in obtaining objective data about maternal mental health.

Holistic approach is required where mothers cultural, religion, family and socio-economic background are taken into consideration. Culturally different group observed different approaches compared to another group, and a common example is during postnatal period. Differences in opinion and belief between the mothers and their family

undoubtedly could affect their wellbeing either physically or mentally. HCPs should be able to address the differences and solve any misunderstanding professionally without being influenced by cultural practices. Husband or spouse or immediate family members should be reminded of their roles in providing effective support for the mothers. On the other hand, their feedback should also be valued in evaluating the mental wellbeing of the mother.

6.4.3 Education

This study suggests a comprehensive and targeted education to be implemented mainly for three group circles, namely HCPs, childbearing mothers and public community. For the first group, HCPs training should be refined for better understanding of PMI especially in formal education module such as during their diploma, advanced diploma, undergraduate or postgraduate level. As for the initiation, closed cultural manifestation of PMI conditions should be addressed, and training pertaining to them can be developed and targeted to related departments. Additionally, HCPs should also be trained to be more alerted on the psychological aspect of the mothers, in contrast to traditional practices which more focused on the physical recovery and wellbeing. Additionally, continuous medical education (CME) or continuous nursing education (CNE) focusing on PMI should be introduced for the HCPs. It is through this education that they would be able to get update on current issues and development related to the PMI issues. Training related to the usage of assessment tool to measure PMI also need to be enforced to ensure competency of the HCPs.

The second group, which are the childbearing mothers should be exposed to the information related to motherhood journey, parenting skills as well as indicators of PMI since early pregnancy and continued until postnatal period. Improvements should be made to conventional awareness campaign where mothers not only informed on the physical changes and preparedness for childbirth but also on the psychological aspect where they should be able to understand and expressed themselves better to HCPs when asked about their wellbeing during postnatal period. This tremendously able to help HCPs to understand the mothers hence prompting effective aid and treatment.

The third group, public community must also be made aware of the PMI. The first focus group should be the husband or spouse, followed by close family and finally the general community. Through effective campaign, fathers and family should be able to discern positive and encouraging support to the mothers. In the longer turn, this could also help for the masses to slowly change their perception of the PMI as a psychiatric illness.

6.4.4 Future Research

Future research should be conducted to address recommendations made above. A guideline with used of standardized set of vignettes should be carried along with valid and reliable measures which should be able to asses all component of PMI. Readily available tool can be fine-tuned for this purpose as even though the tool has been translated and validated in other languages, they may not be sufficient for detection of PMI in our culturally diverse population. More research in this area, including developing and testing the acceptability of assessment tool to the local population, is essential to guide practice and inform policy-makers on evidence-based means of identifying women with PMI at an early stage.

6.5 RECOMMENDATION

It is highly recommended that PMI should be managed by introducing a culturally appropriate mental health assessment tool to provide comprehensive and holistic maternity care. A locally valid instrument needs to be developed by understanding local cultural context through qualitative and quantitative research method. A team of investigators at John Hopkins University had used Design, Implementation Monitoring and Evaluation (DIME) model to produce information related to local mental health symptoms from the research population points of view which can be utilized for validation of adapted assessment tool (Lasater et al., 2017). It was in line with the Instrument Development Method by Boateng et al. (2018).

There are few items that can be considered to be added in a new assessment tool based on the findings of this study which are items related to support from the partner and family members, confinement period, motherhood, childcare, and significant

symptoms for each types of common PMI that was not included in existing assessment tools that was used in current healthcare setting such as self-harm or harming others including the baby, changes in sleep pattern, overthinking or worries of the baby, neglectation of the baby and lastly hallucinations. Table 6.1 shows recommendation of domains, dimensions and items that can be included when developing proper assessment tool for PMI

Table 6.1 Recommendations of Domains, Dimensions and Items in Assessment Tool

MULTI – DOMAIN	DIMENSION	ITEMS
Postnatal Mental Illness • Adjustment disorder • Postnatal Anxiety • Postnatal Depression • Postnatal Psychosis	Past medical history	i. Psychiatry history ii. Medical issues during pregnancy, delivery and after delivery
	Related to confinement period	i. Support from spouse ii. Support from family iii. Place of stay iv. Postnatal practices v. Postnatal diet vi. Postnatal taboos
	Related to motherhood	i. Expectation ii. Transition to motherhood iii. Preparation to motherhood iv. Breastfeeding v. Body image
	Related to childcare	i. Newborn health status ii. Handling newborn
	Clinical features of PMI	i. Lack of interest ii. Neglecting the newborn iii. Emotion – sad, anger, depress, anxious, restless,

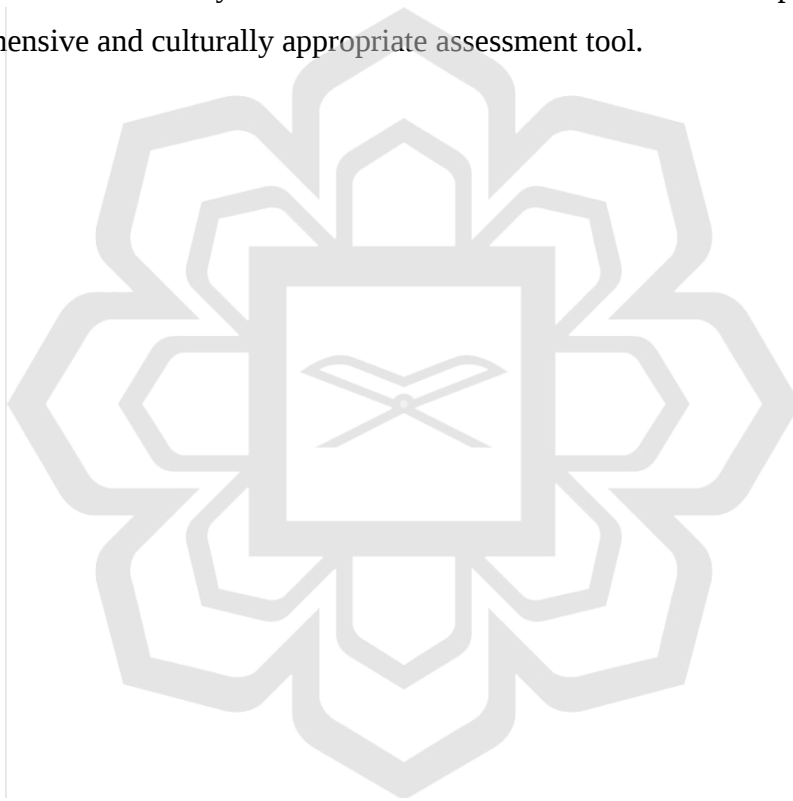
		cry, overwhelm, irritable, guilty, hopelessness, scared iv. Physical – trembling, palpitation, sweating, GIT problems, sleep pattern, appetite v. Hallucinations vi. Delusions vii. Harming – self and baby
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6.6 CONCLUSION

This qualitative study shows that there are different ways of describing signs and symptoms of PMI by both HCPs and postnatal mothers based on their understanding, experience and knowledge. Even though existing model of mental health literacy suggested that knowledge about mental health disorder helps in recognition, intervention and management of PMI, majority of the HCPs in this study appeared to have lack of knowledge especially nurses. They were found fully linked PMI to postnatal depression instead of other types of mental illnesses. Additionally, HCPs did not recognize postnatal blues and stress as PMI, rather, they acknowledge them as adjustment disorder.

The explanations of the perceived cause of PMI can be categorised into three factors which are sociocultural, psychological and biophysical with sociocultural found to be the most common factor contributing to PMI. However, they have different views in describing these factors. HCPs views lack of support as essential factors contributing to PMI, whilst mother claimed otherwise. Having supportive family was told by the mothers which helps them seeking for treatment. There were also different opinions related to postnatal taboos and traditional postnatal practices. Some participants perceived it as a cause for PMI but others view as promotion to maternal well-being. It was depending on the postnatal mothers' acceptance towards these aspects. Adaptation and expectation towards motherhood also become a part of perceived cause. Unmet expectation might become a factor contributing to PMI.

It is evidenced by the HCPs explanations about the challenges encountered by them in assessing and managing PMI among Malaysian postnatal mothers which includes limited formal and scientific knowledge and experience in identifying PMI, the absence of assessment tool, guideline and referral pathways for the management of PMI as well as the needs of multidisciplinary involvement to ensure continuity of care to the mothers. Based on these findings, this study calls for a guideline in the referral pathways and management of PMI within Malaysia healthcare system, a non-judgemental perception and acknowledgment of symptoms by the HCPs, a formal education and continuous training related to PMI to the HCPs and exposure towards mothers and community as well as future research in developing a standard, comprehensive and culturally appropriate assessment tool.



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APPENDICES

APPENDIX A: DATA CHARTING FOR SCOPING REVIEW

Author	Title	Year	Country	Sample Size	Assessment Time	Study Design	Study Setting	Instrument	Abbreviation	No of items	Question style	Language	Disorder Type	Cut - off	Types of Reliability	Pre Ponderance of Evidence	Reliability Criteria	Types of Validity
Buttner, Melissa M.; O'Hara, Michael W.; Watson, David	The Structure of Women's Mood in the Early Postpartum	2012	USA	216	0-2 weeks	Cross-sectional	Hospital and Clinics	Daily Experiences Questionnaire	DEQ	38	Likert	English	Blues	Not mention	Cronbach's Alpha	0.88-0.94	Good Excellent	-Not mention
Pop, Victor J. M.; Truijens, Sophie E. M.; Spek, Viola; Wijnen, Hennie A.; Van Son, Maarten	A new concept of maternity blues: Is there a subgroup of women with rapid cycling mood symptoms?	2015	Netherlands	949	1 week	Longitudinal	Medical Centre	Maternity Blues Scale	MBS	28	Likert	Dutch	Blues	20	Cronbach's Alpha	0.76-0.87	Adequate Good	Construct -Validity Criterion Validity

J. M.; Bergink, Veerle																		
Dennis, Cindy Lee; Brown, Hilary K.; Wanigar atne, Susitha; Vigod, Simone N.; Grigoria dis, Sophie; Fung, Kenneth; Marini, Flavia; Brennen stuhl, Sarah	Determina nts of comorbid depression and anxiety postnatally : A longitudin al cohort study of Chinese- Canadian women	2018	Canada	549	4-24 weeks	Longitudin al	Communi ty based	Acculturativ e Stress ASI	16	Likert	Not mention	Stress	Higher score indicate s worse sympto ms	Cronbach's Alpha	0.93	Excellent	Not mention	
Nurbaeti , Irma; Deoisres , Wannee; Hengudo	Associatio n between psychosoc ial factors and postpartu	2019	Indonesi a	166	Not stated	Cross- sectional	Health Centres	Childcare Stress Inventory	CSI	20	Likert	Indonesian	Stress	Higher score indicate s worse sympto ms	Cronbach's Alpha	0.74	Adequate	Not mention

msub, Pornpat	m depression in South Jakarta, Indonesia																	
Anding, Jana Eos; Röhrle, Bernd; Grieshop , Melita; Schücki ng, Beate; Christian sen, Hanna	Couple comorbidity and correlates of postnatal depressive symptoms in mothers and fathers in the first two weeks following delivery	2016	German y	317	0-2 weeks	Longitudinal	German Midwife Prevention Study	German Parental Stress Questionnaire - Modified Parent Stress Questionnaire	PSQ 38	Likert	German	Stress	Higher score indicates worse symptoms	Cronbach's Alpha	0.85	Good	Convergent Validity	
Üğurlu, Nezihe; Bayar, Banu; Bayar, Kiliçhan ; Gökteş, Atilla; Karakaya, Ilkim Çitak; Polat,	Development, validity and reliability of the Turkish version of the Hung Postpartum Stress Scale	2012	Turkey	517	0-2 weeks	Cross-sectional	Health Centres	Hung Postpartum Stress Scale	HPSS 62	Likert	Turkish	Stress	Higher score indicates worse symptoms	Cronbach's Alpha	0.93	Excellent	Content Validity Construct Validity	

Hatice																		
Deltsidou, Anna; Pappa, Elli; Sarantakou, Antigoni; Bouroutzoglou, Maria; Kallia, Thomai; Nanou, Christina	Postpartum Stress in Relation with Depression and Anxiety in a Sample of Greek Postpartum Women	2018	Greece	480	Not stated	Cross-sectional	Maternity Hospital	Hung Postpartum Stress Scale	HPSS 62	Likert	Greek	Stress	Higher score indicate worse symptoms	Cronbach's Alpha	0.95	Excellent	Face Validity Content Validity Concurrent Validity	
Nurbaeti, Irma; Deoisres, Wannee; Hengudomsub, Pornpat	Association between psychosocial factors and postpartum depression in South Jakarta, Indonesia	2019	Indonesia	166	Not stated	Cross-sectional	Health Centres	Life Event Questionnaire- Modified	LEQ-M 15	Likert	Indonesian	Stress	Higher score indicate worse symptoms	Cronbach's Alpha	0.83	Good	Not mention	
Gray, Peter H.; Edwards	Parenting stress in mothers of	2013	Australia	105	4 mth	Cross-sectional	NICU	Parenting Stress Index	PSI-SF 36	Likert	English	Stress	Not mention	Cronbach's Alpha	0.91	Excellent	Concurrent Validity Predictive	

, Dawnpreterm M.; infants O'Callag during han, early Michael infancy J.; Cuskelly , Monica								Short Form									Validity
Razurel, Chantal; Kaiser, of the Barbara; Postnatal Dupuis, Perceived Marc; Stress Antoniet Inventory ti, Jean in a French Philippe; Speaking Sellenet, Population Catherin of e; Primiparo Epiney, us Women Manuela	Validation of the Postnatal Perceived Stress Inventory in a French Population of Primiparo us Women	2013	Switzer land	179	6 weeks	Cross- sectional	Hospital Perceived Stress Scale (PSS)	PSS 10	Likert	French	Stress	Higher score indicate s worse sympto ms	Cronbach's Alpha 0.86	Good	Concurren t Validity		
Benedikt sson, Ingunn; McDona ld, Sheila; Tough, Suzanne	Examining the Psychomet ric Properties of Three Standardiz ed Screening	2017	Canada	3300	T1: 4mth T2: 12mth	Longitudin al	All our Babies (AOB) Study Perceived Stress Scale (PSS)	PSS 10	Likert	English	Stress	Higher score indicate s worse sympto ms	Cronbach's Alpha 0.89 0.88	Good	Construct Validity Concurren t Validity		

	Tools in a Pregnant and Parenting Population																	
Razurel, Chantal; Kaiser, Barbara; Dupuis, Marc; Antonietti, Jeanne; Philippe, Sellenet, Catherine; Epiney, Manuela	Validation of the Postnatal Perceived Stress Inventory in a French Speaking Population of Primiparous Women	2013	Switzerland	179	6 weeks	Cross-sectional	Hospital	Postnatal Perceived Stress Inventory	PNPS I	27	Likert	French	Stress	Not mention	Cronbach's Alpha	0.82	Good	Convergent Validity Construct Validity Discriminant Validity Predictive Validity
Andersson, Ewa; Hildingsson, Ingegerd	Mother's postnatal stress: an investigation of links to various factors during pregnancy and post-partum	2016	Sweden	279	6 mth	Cohort	Antenatal clinic	Swedish Parental Stress Questionnaire (SPSQ) - Modified Parenting Stress Index	PSQ	34	Likert	Swedish	Stress	Higher score indicates worse symptoms	Cronbach's Alpha	0.81	Good	Concurrent Validity

Bina, Rena; Harrington, Donna	Differential Predictors of Postpartum Depression and Anxiety: The Edinburgh Postnatal Depression Scale Hebrew Version Two Factor Structure Construct Validity	2017	Israel	715	6 weeks	Cross-sectional	Hospital	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 3	Likert	Hebrew	Anxiety	Not mention	Cronbach's Alpha	0.60	Poor	Discriminant Validity
Martin, Colin R.; Redshaw, Maggie	Establishing a coherent and replicable measurement model of the Edinburgh Postnatal Depression	2018	England	T1:245 T2: 217	T1: 3mth T2: 6mth	Cross-sectional	Community-based	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 3	Likert	English	Anxiety	Not mention	Cronbach's Alpha	0.74-0.78	Adequate	Construct Validity

	n Scale																	
Bobevski, Irene; Rowe, Heather; Clarke, David M.; McKenzie, ie, Dean P.; Fisher, Jane	Early postnatal demoralisation among primiparous women in the community: Measurement, prevalence and associated factors	2016	USA	400	0-4 weeks	RCT	Local Maternal and Child Health Centres	Generalized Anxiety Disorder (GAD 7)	GAD 7	77	7	Likert	English	Anxiety >10	Cronbach's Alpha	0.85	Good	Not mention
Pierson, Mark E.; Prenoveau, Jason M.; Craske, Michelle G.; Netsi, Elena; Stein, Alan	Psychometric properties of the generalized anxiety disorder questionnaire - IV (GAD-Q-IV) in postpartum	2017	England	2233	T1: 9 weeks T2: 6 mth	Longitudinal	Hospital	Generalised Anxiety Disorder Questionnaire IV	GAD-Q-IV	9	9	Likert	English	Higher score indicates worse symptoms	Cronbach's Alpha	T1: 0.82 T2: 0.87	Good	Concurrent Validity Criterion Validity

	m mothers																	
Nieto, Lourdes; Lara, Ma Asunción; Navarrete, Laura; Manzo, Gabriela	Infant temperament and perinatal depressive anxiety symptoms in Mexican women	2019	Mexico	210	6 mth	Longitudinal	Hospital	Hopkins Symptoms Checklist-90-Revised	SCL-90R	10	Likert	Not mention	Anxiety	>10	Cronbach's Alpha	0.82	Good	Not mention
Fallon, Victoria; Christian, Jason; Halford, Grovenor; Bennett, Kate Mary; Harrold, Joanne Allison	The Postpartum Specific Anxiety Scale: development and preliminary validation	2016	UK	1282	0-6mth	Longitudinal	Online forums and social media	Postpartum Specific Anxiety Scale	PSAS 51	Likert	English	Anxiety	Not mention	Cronbach's Alpha	0.96	Excellent	Convergent Validity	
Razurel, Chantal; Kaiser, Barbara; Dupuis,	Validation of the Postnatal Perceived Stress	2013	Switzerland	179	6 weeks	Cross-sectional	Hospital	State - Trait Anxiety Inventory	STAI	20	Likert	French	Anxiety	>40	Cronbach's Alpha	0.95	Excellent	Convergent Validity

Marc; Antonie ti, Jean Philippe; Sellenet, Catherin e; Epiney, Manuela	Inventory in a French Speaking Population of Primiparo us Women																	
Bayramp our, Hamideh ; McDona ld, Sheila; Fung, Tak; Tough, Suzanne	Reliability and validity of three shortened versions of the State Anxiety Inventory scale during the perinatal period	2014	Canada	T1: 3021 T2: 1573	T1: 4mth T2: 12mth	Longitudin al	All our Babies (AOB) Study	State - Trait Anxiety Inventory	STAI 20 6	Likert	English	Anxiety	>40 Not mention	Cronbach's Alpha	0.93 0.84-0.85	Excellent Good	Concurren t Validity	
Benedikt sson, Ingunn; McDona ld, Sheila; Tough, Suzanne	Examining the Psychomet ric Properties of Three Standardiz ed Screening	2017	Canada	3300	T1: 4mth T2: 12mth	Longitudin al	All our Babies (AOB) Study	State - Trait Anxiety Inventory	STAI 20	Likert	English	Anxiety	>40	Cronbach's Alpha	0.93 0.93	Good	Construct Validity Concurren t Validity	

	Tools in a Pregnant and Parenting Population																
Matthies, Lina Maria; Wallwien, Stephanie; Müller, Mitho; Doster, Anne; Plewniok, Katharina; Feller, Sandra; Sohn, Christof; Wallwien, Markus; Reck, Corinna	Maternal self-confidence during the first four months postpartum and its association with anxiety and early infant regulatory problems	2017	Germany	257	1 week	Longitudinal	Perinatal Centre	State - Trait Anxiety Inventory	STAI 20	Likert	German	Anxiety	Not mention	Cronbach's Alpha	0.91	Excellent	Not mention
Dennis, Cindy Lee;	Determinants of comorbid	2018	Canada	549	4-24 weeks	Longitudinal	Community-based	State - Trait Anxiety Inventory	STAI 20	Likert	Not mention	Anxiety	>40	Cronbach's Alpha	0.92	Excellent	Not mention

Brown, Hilary K.; Wanigaratne, Susitha; Vigod, Simone N.; Grigoriadis, Sophie; Fung, Kenneth; Marini, Flavia; Brennenstuhl, Sarah	depression and anxiety postnatally; A longitudinal cohort study of Chinese-Canadian women																	
Tran, Thach D.; Tran, Tuan; La, Bui; Lee, Dominic; Rosenthal, Doreen; Fisher,	Screening for perinatal common mental disorders in women in the north of Vietnam: A comparison of three	2011	Vietnam	364	4 - 6 weeks	Cross-sectional	Health Centres	Zung Anxiety Scale	ZAS 20	Likert	Vietnamese	Anxiety 37 or 38	Cronbach's Alpha	0.76	Adequate	Content Validity Criterion Validity		

Jane	psychomet ric instrument s																
Deltsido u, Anna; Pappa, Elli; Sarantak i, Antigoni ; Bourout zoglou, Maria; Kallia, Thomai; Nanou, Christina	Postpartu m Stress in Relation with Depressio n and Anxiety in a Sample of Greek Postpartu m Women	2018	Greece	480	Not stated	Cross- sectional	Centre for Maternity Hospital	Epidemiolog ical Studies - Depression scale	CES- D 20	Likert	Greek	Depress ion	23	Cronbach's Alpha	0.91	Excellent	Face Validity Content Validity Concurren t Validity
Chiband a, Dixon; Mangezi , Walter; Tshiman ga, Mustaf; Woelk, Godfrey; Rusakan iko, Peter;	Validation of the Edinburgh Postnatal Depressio n Scale among women in a high HIV prevalence area in urban	2010	Africa	210	6 weeks	Cross- sectional	Primary care postnatal clinic	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Shona	Depress ion	11 or 12	Cronbach's Alpha	0.87	Good	Content Validity

Stranix-Chibanda, Lynda; Midzi, Stanley; Maldonado, Yvonne; Shetty, Avinash K.	Zimbabwe																	
Lau, Ying; Wang, Yuqiong; Yin, Lei; Chan, Kin Sun; Guo, Xiuqing	Validation of the Mainland Chinese version of the Edinburgh Postnatal Depression Scale in mothers	2010	China	T1:300 T2:324	3-5 days	Cross-sectional	Hospital	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Chinese	Depression	>10	Cronbach's Alpha Test-Retest	0.78 0.90	Adequate Excellent	Convergent Validity Discriminant Validity Construct Validity	
Tesfaye, Markos; Hanlon, Charlotte; Wondimu, Abegn	Detecting postnatal common mental disorders in Addis Ababa,	2010	Ethiopia	105	6 - 14 weeks	Cross-sectional	Health Centres	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Amharic	Depression	6 or 7	Cronbach's Alpha	0.71	Adequate	Content Validity Criterion Validity Concurrent Validity	

Dawit; Alem, Atalay	Ethiopia: Validation of the Edinburgh Postnatal Depression Scale and Kessler Scales																	
Banti, Susanna; Mauri, Mauro; Oppo, Annalisa; Borri, Chiara; Rambelli, Cristina; Ramacciotti, Daniele; Montagnani, Maria S.; Camilleri, Valeria; Cortopassi, Sonia	From the third month of pregnancy to 1 year postpartum. Prevalence, incidence, recurrence, and new onset of depression. Results from the Perinatal Depression Research & Screening	2011	Italy	T1: 751 T2: 663 T3: 600 T4: 534 T5: 500	T1: 1mth T2: 3mth T3: 6mth T4: 9mth T5: 12mth	Longitudinal	Local health services	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Italian	Depression	> 12	Cronbach's Alpha	0.75	Adequate	Validated - Not mention	

Rucci, Paola; Cassano, Giovanni B.	Unit study																
Flynn, Heather A.; Sexton, Minden; Ratliff, Scott; Porter, Katherine; Zivin, Kara	Comparative performance of the Edinburgh Postnatal Depression Scale and the Patient Health Questionnaire-9 in pregnant and postpartum women seeking psychiatric services	2011	USA	104	Not stated	Cross-sectional	Outpatient psychiatric clinic	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depression ≥ 13	Cronbach's Alpha	0.84	Good	Predictive Validity	
Leahy-Warren, Patricia; McCarthy, Geraldine	Postnatal Depression in First-Time Mothers: Prevalence	2011	Ireland	512	6 & 12 weeks	Longitudinal	Community-based	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depression >11	Cronbach's Alpha	0.88	Good	Not mention	

e; Corcoran, Paul	Relationships Between Functional and Structural Social Support at 6 and 12 Weeks Postpartum																	
Tran, Thach D.; Tran, Tuan; La, Bui; Lee, Dominic; Rosenthal, Doreen; Fisher, Jane	Screening for perinatal common mental disorders in women in the north of Vietnam: A comparison of three psychometric instruments	2011	Vietnam	364	4 - 6 weeks	Cross-sectional	Health Centres	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Vietnamese	Depression	3 or 4	Cronbach's Alpha	0.75	Adequate	Content Validity Criterion Validity	

Gray, Peter H.; Edwards, Dawn M.; O'Callaghan, Michael J.; Cuskelly, Monica	Parenting stress in mothers of preterm infants during early infancy	2012	Australia	105	4 mth	Cross-sectional	NICU	Edinburgh Postnatal Depression Scale (EPDS)	EPDS	10	Likert	English	Depression	>12	Cronbach's Alpha	0.87	Good	Not mention
Kuo, Shu Yu; Yang, Ya Ling; Kuo, Pi Chao; Tseng, Chi Meng; Tzeng, Ya Ling	Trajectories of Depressive Symptoms and Fatigue Among Postpartum Women	2012	Taiwan	121	0-7 days	Cross-sectional	Medical Centre	Edinburgh Postnatal Depression Scale (EPDS)	EPDS	10	Likert	Chinese	Depression	≥ 9	Cronbach's Alpha	0.82	Good	Criterion Validity
Razurel, Chantal; Kaiser, Barbara; Dupuis, Marc; Antonietti, Jean Philippe	Validation of the Postnatal Perceived Stress Inventory in a French Speaking Population	2013	Switzerland	179	6 weeks	Cross-sectional	Hospital	Edinburgh Postnatal Depression Scale (EPDS)	EPDS	10	Likert	French	Depression	>11	Cronbach's Alpha	0.72	Adequate	Convergent Validity

Sellenet, Catherine; Epiney, Manuela	of Primiparous Women																
Bayrampour, Hamideh; McDonauld, Sheila; Fung, Tak; Tough, Suzanne	Reliability and validity of three shortened versions of the State Anxiety Inventory scale during the perinatal period	2014	Canada	T1: 3021 T2: 1573	T1: 4mth T2: 12mth	Longitudinal	All our Babies (AOB) Study	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depression	>12	Cronbach's Alpha	0.87	Good	Concurrent Validity
Gaillard, Adeline; Le Strat, Yann; Mandelbrot, Laurent; Keïta, Hawa; Dubertret, Caroline	Predictors of postpartum depression: Prospective study of 264 women followed during pregnancy	2014	France	312	6-8 weeks	Cross-sectional	Maternity Unit	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	French	Depression	12	Cronbach's Alpha	0.85	Good	Predictive Validity

	and postpartum																
Clout, Danielle; Brown, Rhonda	Sociodemographic, pregnancy, obstetric, and postnatal predictors of postpartum stress, anxiety and depression in new mothers	2015	Australia	105	4-6mth	Cross-sectional	Online forums and social media	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depression	>12	Cronbach's Alpha	0.89	Good	Concurrent Validity
De Figueiredo, Felipe Pinheiro; Parada, Ana Paula; Cardoso, Viviane Cunha; Batista, Rosange	Postpartum depression screening by telephone: a good alternative for public health and research	2015	Brazil	1083	0-12mth	Cross-sectional	BRISA	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Portuguese	Depression	10	Cronbach's Alpha	0.86	Good	Concurrent Validity Predictive Validity

la Fernand es Lucena; da Silva, Antonio Augusto Moura; Barbieri, Marco Antonio; Cavalli, Ricardo de Carvalho ; Bettiol, Heloisa; Del-Ben, Cristina Marta																	
Giallo, Rebecca; Gartland , Deirdre; Woolho use, Hannah; Brown, Stephani e	Differentia ting maternal fatigue and depressive symptoms at six months and four years post- partum:	2015	Australi a	1396	6 mth	Longitudin al	Public Hospital	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 11	Likert	English	Depress ion	12	Cronbach's Alpha	0.89	Good	Construct Validity Discrimin ant Validity

	Considerations for assessment, diagnosis and intervention																
Kernot, Jocelyn; Olds, Tim; Lewis, Lucy K.	Test-retest reliability of the English version of the Edinburgh Postnatal Depression Scale	2015	Australia	120	0-12 mth	Cross-sectional	Online	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depress ≥ 9	Test-Retest (ICC)	0.92	Excellent	Not mention	
Odalovic, Marina; Tadic, Ivana; Lakic, Dragana; Nordeng, Hedvig; Lupattelli, Angela; Tasic, Ljiljana	Translation and factor analysis of structural models of Edinburgh Postnatal Depression Scale in Serbian pregnant and	2015	Serbia	125	0-12 mth	Cross-sectional	Online website	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Serbian	Depress >13	Cronbach's Alpha	0.83	Good	Construct validity	

	postpartum women - Web-based study																
Anding, Jana Eos; Röhrle, Bernd; Grieshop, Melita; Schücking, Beate; Christian, Hanna	Couple comorbidity and correlates of postnatal depressive symptoms in mothers and fathers in the first two weeks following delivery	2016	Germany	317	0-2 weeks	Longitudinal	German Midwife Prevention Study	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	German	Depression	> 12	Cronbach's Alpha	0.85	Good	Concurrent Validity
Iwata, Hiroko; Mori, Emi; Sakajo, Akiko; Aoki, Kyoko; Maehara, Kunie; Tamakoshi, Koji	Prevalence of postpartum depressive symptoms during the first 6 months postpartum: Association	2016	Japan	2709	0-6mth	Prospective Cohort	Hospital	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Japanese	Depression	≥ 9	Cronbach's Alpha	0.81-0.82	Good	Not mention

	n with maternal age and parity																
Bina, Rena; Harringt on, Donna	Differential Predictors of Postpartu m Depressio n and Anxiety: The Edinburgh Postnatal Depressio n Scale Hebrew Version Two Factor Structure Construct Validity	2017	Israel	715	6 weeks	Cross- sectional	Hospital	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 6	Likert	Hebrew	Depress ion	Not mention	Cronbach's Alpha	0.71	Adequate	Discrimin ant Validity
Gollan, Jackie K.; Wisniew ski, Stephen	Generatin g an efficient version of the Edinburgh	2017	USA	15172	4-6 weeks	Cross- sectional	Medical Centre	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 7	Likert	English	Depress ion	4	Cronbach's Alpha	0.87	Good	Predictive Validity

R.; Luther, James F.; Eng, Heather F.; Dills, John Louis; Sit, Dorothy; Ciolino, Jody D.; Wisner, Katherin e L.	Postnatal Depressio n Scale in an urban obstetrical population																
Ing, Harriet; Fellmeth , Gracia; White, Jitrachot e; Stein, Alan; Simpson , Julie A.; McGrea dy, Rose	Validation of the Edinburgh Postnatal Depressio n Scale (EPDS) on the Thai- Myanmar border	2017	Thailand	131	4-16 weeks	Cross- sectional	Clinic	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Burmese	Depress ion	≥ 10	Cronbach's Alpha	0.82	Good	Face Validity Criterion Validity
Ing, Harriet; Fellmeth	Validation of the Edinburgh	2017	Thailand	544	4-16 weeks	Cross- sectional	Clinic	Edinburgh Postnatal Depression	EPDS 10	Likert	Karen	Depress	≥ 10	Cronbach's Alpha	0.59	Poor	Face Validity Criterion

Gracia; White, Jitrachote; Stein, Alan; Simpson, Julie A.; McGready, Rose	Postnatal Depression Scale (EPDS) on the Thai-Myanmar border							Scale (EPDS)					ion					Validity
Kozinszky, Zoltan; Tőreki, Annamária; Hompóth, Emőke A.; Dudas, Robert B.; Németh, Gábor	A more rational, theory-driven approach to analysing the factor structure of the Edinburgh Postnatal Depression Scale	2017	Hungary	714	6 weeks	Cross-sectional	Department of Obstetrics & Gynaecology, Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Hungarian	Depression	Not mention	Cronbach's Alpha	0.82	Good	Construct Validity		
Matthies, Linaself-Maria; Wallwien, Stephanie	Maternal self-confidence during the first four months	2017	Germany	257	1 week	Longitudinal	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	German	Depression	Not mention	Cronbach's Alpha	0.86	Good	Not mention		

e; Müller, Mitho; Doster, Anne; Plewnio k, Katharin a; Feller, Sandra; Sohn, Christof; Wallwie ner, Markus; Reck, Corinna	postpartu m and its associatio n with anxiety and early infant regulatory problems																	
Pierson, Mark E.; Prenove au, Jason M.; Craske, Michelle G.; Netsi, Elena; Stein, Alan	Psychomet ric properties of the generalize d anxiety disorder questionna ire - IV (GAD-Q- IV) in postpartu m mothers	2017	England	2233	T1: 9 weeks T2: 6mth	Longitudin al	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depress ion	>12	Cronbach's Alpha	T1: 0.87 T2: 0.91	Good Excellent	-Concurren t Validity		

Bhusal, Babu Ram; Bhandari, Nisha	Identifying the factors associated with depressive symptoms among postpartum mothers in Kathmandu, Nepal	2018	Nepal	346	4-14 weeks	Cross-sectional	Hospital	Edinburgh Postnatal Depression Scale (EPDS)	EPDS	10	Likert	Nepalese	Depression	>12	Cronbach's Alpha	0.74	Adequate	Not mention
Delavari, Mina; Mohamad-Alizadeh, Charandabi, Sakineh; Mirghafourvand, Mojgan	The Relationship of Maternal-Fetal Attachment and Postpartum Depression: A Longitudinal Study	2018	Iran	242	6-8 weeks	Longitudinal	Health Centres	Edinburgh Postnatal Depression Scale (EPDS)	EPDS	10	Likert	Iran	Depression	> 12	Cronbach's Alpha	0.77	Adequate	Not mention
Dennis, Cindy Lee; Brown, Hilary	Determinants of comorbid depression and	2018	Canada	549	4-24 weeks	Longitudinal	Community-based	Edinburgh Postnatal Depression Scale (EPDS)	EPDS	10	Likert	Not mention	Depression	>9	Cronbach's Alpha	0.78	Adequate	Not mention

K.; Wanigar atne, Susitha; Vigod, Simone N.; Grigoria dis, Sophie; Fung, Kenneth; Marini, Flavia; Brennen stuhl, Sarah	anxiety postnatally : A longitudin al cohort study of Chinese- Canadian women																	
Dennis, Cindy Lee; Brown, Hilary K.; Wanigar atne, Susitha; Vigod, Simone N.; Grigoria dis, Sophie;	Birth experience s, trauma responses and self- concept in postpartu m psychotic- like experience s	2018	UK	1393	2-6 mth	Retrospect ive descriptive	Online website	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depress ion	≥ 13	Cronbach's Alpha	0.86	Good	Not mention	

Fung, Kenneth; Marini, Flavia; Brennenstuhl, Sarah																		
Green, Eric P.; Tuli, Hawa; Kwobah, Edith; Menya, D.; Chesire, Irene; Schmidt, Christina	Developing and validating a perinatal depression screening tool in Kenya blending Western criteria with local idioms: A mixed methods study	2018	Kenya	132	1-6 mth	Longitudinal	Community-based	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Kiswahili	Depression	13	Cronbach's Alpha	0.78	Adequate	Concurrent Validity	
Martin, Colin R.; Redshaw, Maggie	Establishing a coherent and replicable measurement model of the	2018	England	T1: 245 T2: 217	T1: 3mth T2: 6mth	Cross-sectional	Community-based	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 7	Likert	English	Depression	Not mention	Cronbach's Alpha	0.80-0.82	Good	Construct Validity	

	Edinburgh Postnatal Depression Scale																
Smith-Nielsen, Johanne; Matthey, Stephen; Lange, Theis; Vaever, Mette Skovgaard	Validation of the Edinburgh Postnatal Depression Scale against both DSM-5 and ICD-10 diagnostic criteria for depression	2018	Denmark	324	2-10 mths	Longitudinal	Health Centres	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Danish	Depression	>11	Cronbach's Alpha	0.82	Good	Content Validity Criterion Validity
Nurbaeti, Irma; Deoisres, Wannee; Hengudomsu, Pornpat	Association between psychosocial factors and postpartum depression in South Jakarta, Indonesia	2019	Indonesia	166	Not stated	Cross-sectional	Health Centres	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Indonesian	Depression	>12	Cronbach's Alpha	0.80	Good	Not mention
Nursazila Asikin, and	Reliability	2019	Malaysia	T1: 41	T1: 1 - 30	Cross-	Healthcare	Edinburgh Postnatal	EPDS 10	Likert	Malay		11.5	Cronbach's	T1: 0.78	Adequate	Concurrent

M. A. Siti Norhani, S., Nur Arzuar, A. R. m Azam, Omar Eshaifol	validity of the malay version of Edinburgh Postpartum Depression Scale (EPDS) when administered to postpartum mothers at two points in time		a	T2: 48 days	T2: 31 - 120 days	sectional	Clinic	Depression Scale (EPDS)					Depression		Alpha	T2: 0.62	Poor	t Validity
Shwartz, Nitza; Shoahm-Vardi, Ilana; Daoud, Nihaya	Postpartum depression among Arab and Jewish women in Israel: Ethnic inequalities and risk factors	2019	Israel	1128	6 weeks - 6mths	-Cross-sectional	Maternal and Child Health Clinics	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	Arabic/ Hebrew	Depression	≥ 10	Cronbach's Alpha	0.82	Good	Not mention	
Coffman, Marenm	Postpartum	2020	USA	302	0-12mth	Cross-sectional	Public Health	Edinburgh Postnatal	EPDS 10	Likert	English	Depression	>10	Cronbach's Alpha	0.89	Good	Not mention	

J.; Scott, Victoria C.; Schuch, Claire; Mele, Connie; Mayfield, Carlene; Balasubramanian, Vidhya; Stevens, Alexandra; Dulin, Michael	Depression Screening and Referrals in Special Supplemental Nutrition Program for Women, Infants, and Children Clinics					Clinic	Depression Scale (EPDS)					ion						
Flynn, Heather A.; Sexton, Minden; Ratliff, Scott; Porter, Katherine; Zivin, Kara	Comparative performance of the Edinburgh Postnatal Depression Scale and the Patient Health Questionnaire-9 in pregnant	2011	USA	104	Not stated	Cross-sectional	Outpatient psychiatric clinic	Patients Health Questionnaire-9 (PHQ 9)	PHQ 9	9	Likert	English	Depress ion	≥ 10	Cronbach's Alpha	0.85	Good	Predictive Validity

	and postpartum women seeking psychiatric services																	
Bobevisk, Irene; Rowe, Heather; Clarke, David M.; McKenzie, ie, Dean P.; Fisher, Jane	Early postnatal demoralisation among primiparous women in the community: Measurement, prevalence and associated factors	2015	USA	400	0-4 weeks	RCT	Local Maternal and Child Health Centres	Patients Health Questionnaire (PHQ 9)	PHQ 9	9	Likert	English	Depression	>10	Cronbach's Alpha	0.73	Adequate	Not mention
Green, Eric P.; Tuli, Hawa; Kwobah, Edith; Menya, D.; Chesire,	Developing and validating a perinatal depression screening tool in Kenya: blending	2018	Kenya	132	1-6mth	Longitudinal	Community-based	Patients Health Questionnaire (PHQ 9)	PHQ 9	9	Likert	Kiswahili	Depression	15	Cronbach's Alpha	0.81	Good	Concurrent Validity

Irene; Schmidt, Christina	Western criteria with local idioms: A mixed methods study																	
Nieto, Lourdes; Lara, Ma Asunción; Navarrete, Laura; Manzo, Gabriela	Infant temperament and perinatal depressive anxiety symptoms in Mexican women	2019	Mexico	210	6 mth	Longitudinal	Hospital	Patients Health Questionnaire 9 (PHQ 9)	PHQ 9	Likert	Not mention	Depression	>10	Cronbach's Alpha	0.85	Good	Not mention	
Coffman, Marenm J.; Scott, Victoria n C.; Schuch, Claire; Mele, Connie; Mayfield, Carlene; Balasubramanian	Postpartum Depression Screening and Referrals in Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)	2020	USA	302	0-12mth	Cross-sectional	Public Health Clinic	Patients Health Questionnaire 9 (PHQ 9)	PHQ 9	Likert	English	Depression	>10	Cronbach's Alpha	0.80	Good	Not mention	

amanian, Women, Vidhya; Infants, Stevens, and Alexand Children ra; Clinics Dulin, Michael																	
Green, Developin Eric P.;g and Tuli, validating Hawa; a perinatal Kwobah, depression Edith; tool in Menya, Kenya D.; blending Cheshire, criteria Irene; with local Schmidt, idioms: A Christina mixed methods study	2018	Kenya	132	1-6 mth	Longitudinal	Community-based	Perinatal Depression Screening (PDEPS)	PDEPS	20	Likert	Kiswahili	Depression	13	Cronbach's Alpha	0.77	Adequate	Criterion Validity Construct Validity Content Validity Diagnostic Validity
Pereira, The Ana Portugues Telma; e version Bos, of the Sandra; postpartu Marques m , depression Mariana; screening	2010	Portugal	486	3 mth	Cross-sectional	Medical Centre	Postpartum Depression Screening Scale (PDSS)	PDSS	35	Likert	Portuguese	Depression	Higher score indicate s worse symptoms	Cronbach's Alpha	0.96	Excellent	Concurrent Validity

Maia, Berta Rodrigues; Soares, Maria Joao; Valente, Jose; Gomes, Ana Allen; MacEdo, Antnio; Azevedo, Maria Helena	scale																	
Zubaran, Carlos; Schumacher, Marina V.; Foresti, Katia; Thorell, Mariana R.; Amoretti, Aline; Müller,	The Portuguese version of the Postpartum Depression Screening Scale-Short Form	2010	Brazil	101	2-12 weeks	Cross-sectional	Hospital	Postpartum Depression Screening Scale (PDSS)	PDSS 7	Likert	Portuguese	Depression	≥ 17	Cronbach's Alpha	0.78	Adequate	Criterion Validity Discriminant Validity	

Lúcia																		
Li, Lezhi; Liu, Fang; Zhang, Huilin; Wang, Li; Chen, Xiaofang	Chinese version of the postpartum depression screening scale: Translation and validation	2011	China	387	0-12 weeks	Cross-sectional	Hospital	Postpartum Depression Screening Scale (PDSS)	PDSS 35	Likert	Chinese	Depression	76.5	Cronbach's Alpha	0.96	Excellent	Content Validity Concurrent Validity Criterion Validity Discriminant Validity	
Lara, Marian; Asuncion; Navarrete, Laura; Navarro, Claudia; Le, Huynh Nhu	Evaluation of the Psychometric Measures for the Postpartum Depression Screening Scale - Spanish Version for Mexican Women	2013	Mexico	T1: 149 T2: 156	T1: 6 weeks T2: 4-6 mth	Cohort	Health Facilities	Postpartum Depression Screening Scale (PDSS)	PDSS 35 35	Likert	Spanish	Depression	Not mentioned	Cronbach's Alpha	T1: 0.96 T2: 0.96	Excellent	Concurrent Validity	

Lara, Mariana; Asuncion; Navarrete, Laura; Navarro, Claudia; Le, Huynh Nhu	Evaluation of the Psychometric Measures for the Postpartum Depression Screening Scale Spanish Version for Mexican Women	2013	Mexico	T1: 149 T2: 156	T1: 6 weeks T2: 4-6 mth	Cohort	Health Facilities	Postpartum Depression Screening Scale (PDSS)	PDSS 7	Likert	Spanish	Depression	Not mentioned	Cronbach's Alpha	T1: 0.80 T2: 0.77	Good Adequate	Concurrent Validity Criterion Validity
Pereira, Ana Telma; Bos, Sandra; Marques, Mariana; Maia, Berta Rodrigues; Soares, Maria Joao;	Short forms of the Postpartum Depression Screening Scale: As accurate as the original form	2013	Portugal	453	3 mth	Cohort	Medical Centre	Postpartum Depression Screening Scale (PDSS)	PDSS 7	Likert	Portuguese	Depression	15	Cronbach's Alpha	0.85	Good	Concurrent Validity Criterion Validity

Valente, Jose; Gomes, Ana Allen; MacEdo, Antnio; Azevedo, Maria Helena																		
Pereira, Ana Telma; Bos, Sandra; Marques, Mariana; Maia, Berta Rodrigues; Soares, Maria Joao; Valente, Jose; Gomes, Ana Allen; MacEdo, Antnio;	Short forms of the Postpartum Depression Screening Scale: As accurate as the original form	2013	Portugal	453	3 mth	Cohort	Medical Centre	Postpartum Depression Screening Scale (PDSS)	PDSS 21	Likert	Portuguese	Depress	43	Cronbach's Alpha	0.92	Excellent	Concurrent Validity Criterion Validity	

Azevedo, Maria Helena																		
Blucker, Ryan T.; Gillaspy, J. Arthur; Jackson, Dennis; Hetherington, Carla; Kyler, Kathy; Cherry, Amy; McCaffree, Mary Anne; Gillaspy, Stephen R.	Postpartum depression in the NICU: An examination of the factor structure of the postpartum depression screening scale	2014	USA	385	2 weeks	Retrospective descriptive	NICU	Postpartum Depression Screening Scale (PDSS)	PDSS 35	Likert	English	Depression	Not mentioned	Cronbach's Alpha	0.95	Excellent	Construct Validity	
Cunningham, Nadia K.; Brown, Philippa M.; Page,	Does the Edinburgh Postnatal Depression Scale measure the same constructs	2014	Australia	636	0-12mth	Longitudinal	Western Australian Mother and Baby Unit (WAMBU)	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depression & Anxiety	> 12	Cronbach's Alpha	0.87	Good	Construct Validity	

Andrew C.	across time?						BU)										
Torrek, Annamaria; Ando, Balint; Dudas, Robert B.; Dweik, Diana; Janka, Zoltan; Kozinszky, Zoltan; Kereszturi, Attila	Validation of the Edinburgh Postnatal Depression Scale as a screening tool for postpartum depression in a clinical sample in Hungary	2014	Hungary	266	6 - 8 weeks	Cross-sectional	Department of Obstetrics & Gynaecology, Edinburgh Postnatal Depression Scale (EPDS)	EPDS	10	Likert	Hungarian	Depression & Anxiety	12 or 13	Cronbach's Alpha	0.75	Adequate	Content Validity Criterion Validity
Bina, Rena; Harrington, Donna	Differential Predictors of Postpartum Depression and Anxiety: The Edinburgh Postnatal	2017	Israel	715	6 weeks	Cross-sectional	Edinburgh Postnatal Depression Scale (EPDS)	EPDS	10	Likert	Hebrew	Depression & Anxiety	9	Cronbach's Alpha	0.76	Adequate	Discriminant Validity

	Depression Scale Hebrew Version Two Factor Structure Construct Validity																
Martin, Colin R., Redshaw, Maggie	Establishing a coherent and replicable measurement model of the Edinburgh Postnatal Depression Scale	2018	England	T1: 245 T2: 217	T1: 3mth T2: 6mth	Cross-sectional	Community-based	Edinburgh Postnatal Depression Scale (EPDS)	EPDS 10	Likert	English	Depression & Anxiety	12 or 13	Cronbach's Alpha	0.84-0.85	Good	Construct Validity
Grylka-Baeschi, Susanne; van Teijlingen, Edwin; Stoll, Kathrin	Translation and validation of the German version of the Mother-Generated Index and	2015	Germany	T1: 128 T2: 82	T1: 1 week T2: 7 weeks	Longitudinal	Hospital	Hospital Anxiety and Depression Scale	HADS 14	Likert	German	Depression & Anxiety	Higher score indicates worse symptoms	Cronbach's Alpha	T1 A: 0.75 T1 D: 0.73 T2 A: 0.76 T2 D: 0.65	Adequate Adequate Adequate Poor	Face Validity Content Validity Concurrent validity

Gross, M.	its application during the postnatal period																	
Holt, Lyndsey; Sellwood, William; Slade, Pauline	Birth experiences, trauma responses and self-concept in postpartum psychotic-like experiences	2018	UK	1393	2-6 mth	Retrospective descriptive	Online website	Launey Slade Hallucination Scale	LSH	12	Binary	English	Psychosis	Higher score indicates worse symptoms	Cronbach's Alpha	0.66	Poor	Construct Validity
Mannion, Aisling; Slade, Pauline	Psychotic-like experiences in pregnant and postpartum women without a history of psychosis	2014	UK	66	5-38 days	Longitudinal	Hospital	Launey Slade Hallucination Scale	LSH	12	Binary	English	Psychosis	Higher score indicates worse symptoms	Cronbach's Alpha	0.72	Adequate	Construct Validity

Holt, Lyndsey; Sellwood, William; Slade, Pauline	Birth experiences, trauma responses and self-concept in postpartum psychotic-like experiences	2018	UK	1393	2-6 mth	Retrospective descriptive	Online website	Peters Delusion Inventory	PDI	21	Binary	English	Psychosis	Higher score indicates worse symptoms	Cronbach's Alpha	0.73	Adequate	Construct Validity
Mannion, Aisling; Slade, Pauline	Psychotic-like experiences in pregnant and postpartum women without a history of psychosis	2014	UK	66	5-38 days	Longitudinal	Hospital	Peters Delusion Inventory	PDI	21	Likert	English	Psychosis	Higher score indicates worse symptoms	Cronbach's Alpha	0.73	Adequate	Construct Validity
Clout, Danielle; Brown, Rhonda	Sociodemographic, pregnancy, obstetric, and postnatal predictors of	2015	Australia	105	4-6mth	Cross-sectional	Online forums and social media	Depression Anxiety Stress Scale	DASS	21	Likert	English	Psychological disorder	Higher score indicates worse symptoms	Cronbach's Alpha	D: 0.86 A: 0.79 S: 0.76	Adequate Good	Concurrent Validity

	postpartum stress, anxiety and depression in new mothers																
Meena, Parth Singh; Soni, Ruchi; Jain, Mahendra; Jilovva, Charan Singh; Omprakash	Cognitive dysfunction and associated behaviour problems postpartum women: A study from North India	2016	India	200	1 week	Cross-sectional	Department of Obstetrics & Gynaecology	Depression Anxiety Stress Scale	DASS 21	Likert	Not mention	Psychological disorder	D: 10 A: 8 S: 15	Cronbach's Alpha	D: 0.91 A: 0.80 S: 0.90	Good Excellent	-Not mention
Deltsidou, Anna; Pappa, Elli; Sarantak, Antigoni; Bouroutzoglou, Maria;	Postpartum Stress in Relation with Depression and Anxiety in a Sample of Greek Postpartum Women	2018	Greece	480	Not stated	Cross-sectional	Maternity Hospital	Depression Anxiety Stress Scale	DASS 21	Likert	Greek	Psychological disorder	D: 10 A: 8 S: 15	Cronbach's Alpha	D: 0.91 A: 0.77 S: 0.82	Adequate Good	Face Validity -Content Validity Concurrent Validity

Kallia, Thomai; Nanou, Christina																	
Shokuhi, Zahra Bakht; Ranjbar, Fatemeh; Hakimi, Sevil; Bahri, Rogayeh; Ghaffari, Saeideh	Psychometric properties of the Persian version of the postpartum distress measure scale	2020	Iran	150	0-12 month	Cross-sectional	Health Centres	Depression Anxiety Stress Scale	DASS 21	Likert	Persian	Psychological disorder	Higher score indicates worse symptoms	Cronbach's Alpha	D: 0.93 A: 0.90 S: 0.91	Excellent	Concurrent Validity
Tran, Thach D.; Tran, Tuan; La, Buoi; Lee, Dominic; Rosenthal, Doreen; Fisher, Jane	Screening for perinatal common mental disorders in women in the north of Vietnam: A comparison of three	2011	Vietnam	364	4 - 6 weeks	Cross-sectional	Health Centres	General Health Questionnaire (GHQ)	GHQ12	Binary	Vietnamese	Psychological disorder	0 or 1	Cronbach's Alpha	0.64	Poor	Content Validity Criterion Validity

	psychometric instruments																	
Spiteri, M. C.; Jomeen, J.; Martin, C. R.	Reimagining the General Health Questionnaire as a measure of emotional wellbeing: A study of postpartum women in Malta	2013	United Kingdom	124	2 days - 13 weeks	Longitudinal	Hospital	General Health Questionnaire (GHQ)	GHQ12	12	Binary	Maltese	Psychological disorder	Higher score indicates worse symptoms	Cronbach's Alpha Test-Retest	0.92 0.80	Excellent Good	Content Validity Construct Validity Discriminant Validity Divergent Validity
Ngai, Fei and Wan; Ngu, Siew Fei	Predictors of maternal and paternal depressive symptoms at postpartum	2015	Hong Kong	200	6 mth	Cross-sectional	Hospital	General Health Questionnaire (GHQ)	GHQ12	12	Binary	Chinese	Psychological disorder	Higher score indicates worse symptoms	Cronbach's Alpha	0.74-0.83	Adequate Good	Concurrent Validity
Tesfaye, Markos; Hanlon, Charlott	Detecting postnatal common mental	2010	Ethiopia	105	6 - 14 weeks	Cross-sectional	Health Centres	Kessler 10	K10	10	Likert	Amharic	Psychological disorder	6 or 7	Cronbach's Alpha	0.90	Excellent	Content Validity Criterion Validity

e; Wondim agegn, Dawit; Alem, Atalay	disorders in Addis Ababa, Ethiopia: Validation of the Edinburgh Postnatal Depressio n Scale and Kessler Scales																	Concurren t Validity
Tesfaye, Markos; Hanlon, Charlott e; Wondim agegn, Dawit; Alem, Atalay	Detecting postnatal common mental disorders in Addis Ababa, Ethiopia: Validation of the Edinburgh Postnatal Depressio n Scale and Kessler Scales	2010	Ethiopia	105	6 - 14 weeks	Cross- sectional	Health Centres	Kessler 6	K6	6	Likert	Amharic	Psychol ogical disorder	4 or 5	Cronbach's Alpha	0.86	Good	Content Validity Criterion Validity Concurren t Validity

Shokuhi, Zahra Bakht; Ranjbar, Fatemeh; Hakimi, Sevil; Bahri, Rogayeh; Ghaffari, Saeideh	Psychometric properties of the Persian version of the postpartum distress measure scale	2020	Iran	150	0-12 month	Cross-sectional	Health Centres	Postpartum Distress Measure Scale	PDM 10	Likert	Persian	Psychological disorder	Higher score indicates worse symptoms	Cronbach's Alpha	0.75	Adequate	Content Validity Concurrent Validity Construct Validity
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APPENDIX B: INVITATION LETTER



KULLIYAH OF NURSING



Research Title: Postnatal Mental Illness: Towards Designing an Assessment Tool for Malaysian mothers

Dear Prof/Dr/Sir/Madam

My name is Nur Liyana Shahmi Binti Ruslan, Research Postgraduate student from Kuliyah of Nursing, International Islamic University Malaysia (IIUM).

I would like to invite you to take part in my research project as stated above. This study is funded by the IIUM Collaborative Research Initiative Grant Scheme (C-RIGS) [Project ID: C-RIGS19-006-0012]. The purpose of this research is to gain better understanding of postnatal emotional well-being in Malaysia. As part of the study, I would like to explore health care professionals' experiences of caring for women with postnatal mental illness and your point of views pertaining to the sign and symptoms indicating postnatal mental illness.

Before you decide to take part, you are required to understand the purpose and what it would involve you if you take part in this research project. Please take time to read the information carefully. You can discuss with the others regarding on this study.

If you have any inquiry, please do not hesitate to contact me through telephone number or email address as stated in the information sheet enclosed

Thank You

Yours faithfully

Nur Liyana Shahmi Binti Ruslan
Research Postgraduate Student
Kuliyah of Nursing,
International Islamic University Malaysia (IIUM).

APPENDIX C: PATIENT/PARTICIPANT INFORMATION SHEET (PIS) – HEALTH CARE PRACTITIONER

PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

(For Healthcare Practitioner – Interview)

1. Title of Study: Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers

2. Name of investigator and institution:

NO	NAME	INSTITUTION
1	Nur Liyana Shahmi Binti Ruslan	International Islamic University Malaysia (IIUM), Kuantan Campus
2	Asst. Prof. Dr. Siti Roshaidai Binti Mohd Arifin	International Islamic University Malaysia (IIUM), Kuantan Campus
3	Asst. Prof. Dr. Karimah Hanim Binti Abd. Aziz	International Islamic University Malaysia (IIUM), Kuantan Campus
4	Siti Aishah Binti Daud	International Islamic University Malaysia (IIUM), Kuantan Campus
5	Dr. Asma Perveen	Universiti Pendidikan Sultan Idris (UPSI)
6	Dr. Nurul Ain Hidayah Binti Abas	Universiti Pendidikan Sultan Idris (UPSI)
7	Dr. Fathima Begum Binti Syed Mohideen	Universiti Sains Islam Malaysia (USIM)
8	Dr. Khadijah Hasanah Binti Abang Abdullah	Universiti Sains Islam Malaysia (USIM)

9	Assoc. Prof. Dr. Rohayah Binti Husain	Universiti Sultan Zainal Abidin (UniSZA)
10	Dr. Khairi Bin Che Mat	Universiti Sultan Zainal Abidin (UniSZA)
11	Dr. Siti Norazlina Binti Juhari	Universiti Sultan Zainal Abidin (UniSZA)

3. Name of sponsor: International Islamic University Malaysia (IIUM), Kuantan Campus

4. Introduction:

It is important that you understand why the research is being done and what it will involve. Please take your time to read through and consider this information carefully before you decide if you are willing to participate. Ask the study staff if anything is unclear or if you would like more information. After you are properly satisfied that you understand this study, and that you wish to participate, you must sign this informed consent form.

Your participation in this study is voluntary. You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time. If you withdraw, any data collected from you up to your withdrawal will still be used for the study. Your refusal to participate or withdrawal will not affect any medical or health benefits to which you are otherwise entitled.

This study has been approved by the Medical Research and Ethics Committee, Ministry of Health Malaysia.

5. What is the purpose of the study?

The purpose of this research is to gain more understanding of postnatal emotional well-being in Malaysia. As part of the study, the researcher will explore the knowledge and perception of Malaysian healthcare practitioners on postnatal mental health and illnesses. The knowledge and experiences from the experts will be used to develop an assessment tool to screen for postnatal mental health among Malaysian postnatal mothers.

This research will be conducted for duration of 5 month (10/03/2020 till 10/08/2020). The expected number of participants is 5 individuals.

6. What are my responsibilities when taking part in this study?

It is important that you answer all of the questions asked by the study staff honestly and completely which will take about 30 minutes of your time. You will be interviewed by one of the investigators mention above.

7. What are the potential risks and side effects of being in this study?

There are no serious risks anticipated by taking part in this study. However, if the participants feel upset by talking about her experience and opinion, she may take a break or stop to answer at any time. As the participants are registered with the MCH clinics, she may ask for any additional support that she may need as fast as she can.

8. What are the benefits of being in this study?

There will be no direct benefit to the participant at this phase. However, the information given by the participant will be used by the researcher to develop appropriate assessment tool to help assessing postnatal mental health after the childbirth as well as will help to improve health care system in the future. Thus, the participant will be contributing towards better health care quality in Malaysia by participating this study.

9. Who is funding the research?

This study is sponsored by International Islamic University Malaysia (IIUM), Kuantan Campus. You will not be paid for participating in this study.

10. Will my medical information be kept private?

All your information obtained in this study will be kept and handled in a confidential manner, in accordance with applicable laws and/or regulations. When publishing or presenting the study results, your identity will not be revealed without your expressed consent. Individuals involved in this study, qualified monitors and auditors, and governmental or regulatory authorities may inspect the study data, where appropriate and necessary.

11. Who should I call if I have questions?

If you have any questions about the study or if you think you have a study related injury and you want information about this study, please contact the Principal Investigator Nur Liyana Shahmi Binti Ruslan at telephone number 0179606027 or email me at liyana.shahmi@gmail.com.

If you have any questions about your rights as a participant in this study, please contact: The Secretary, Medical Research & Ethics Committee, Ministry of Health Malaysia, at telephone number 03-3362 8407/8205/8888/8100.

**RISALAH MAKLUMAT PESAKIT DAN BORANG PERSETUJUAN ATAU
KEIZINAN PESAKIT**

(untuk pengamal perubatan – temuduga/delphi)

1. Tajuk penyelidikan: Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers

2. Nama Institusi and nama penyelidik:

NO	NAMA	INSTITUSI
1	Nur Liyana Shahmi Binti Ruslan	Universiti Islam Antarabangsa (UIA), Kampus Kuantan
2	Asst. Prof. Dr. Siti Roshaidai Binti Mohd Arifin	Universiti Islam Antarabangsa (UIA), Kampus Kuantan
3	Asst. Prof. Dr. Karimah Hanim Binti Abd. Aziz	Universiti Islam Antarabangsa (UIA), Kampus Kuantan
4	Siti Aishah Binti Daud	Universiti Islam Antarabangsa (UIA), Kampus Kuantan
5	Dr. Asma Perveen	Universiti Pendidikan Sultan Idris (UPSI)
6	Dr. Nurul Ain Hidayah Binti Abas	Universiti Pendidikan Sultan Idris (UPSI)
7	Dr. Fathima Begum Binti Syed Mohideen	Universiti Sains Islam Malaysia (USIM)
8	Dr. Khadijah Hasanah Binti Abang Abdullah	Universiti Sains Islam Malaysia (USIM)
9	Assoc. Prof. Dr. Rohayah Binti Husain	Universiti Sultan Zainal Abidin (UniSZA)
10	Dr. Khairi Bin Che Mat	Universiti Sultan Zainal Abidin (UniSZA)

11	Dr. Siti Norazlina Binti Juhari	Universiti Sultan Zainal Abidin (UniSZA)
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3. Nama penaja: Universiti Islam Antarabangsa (UIA), Kampus Kuantan

4. Pengenalan:

Anda telah dijemput untuk menyertai penyelidikan ini kerana anda merupakan ibu selepas bersalin. Risalah ini menjelaskan hal-hal berkenaan penyelidikan tersebut dengan lebih mendalam dan terperinci. Amat penting anda memahami mengapa penyelidikan ini dilakukan dan apa yang dilakukan dalam penyelidikan ini. Sila ambil masa yang secukupnya untuk membaca dan mempertimbangkan dengan teliti penerangan yang diberi sebelum anda bersetuju untuk menyertai penyelidikan ini. Jika ada sebarang kemusykilan ataupun maklumat lanjut yang anda ingin tahu, anda boleh bertanya dengan mana-mana kakitangan yang terlibat dalam penyelidikan ini. Setelah anda berpuashati bahawa anda memahami penyelidikan ini, dan anda berminat untuk turut serta, anda dikehendaki untuk menandatangani Borang Persetujuan atau Keizinan Pesakit, pada muka surat akhir risalah ini. Untuk menyertai penyelidikan ini, anda perlu memberi doktor anda maklumat sejarah kesihatan ataupun penyakit anda yang lalu; jika anda tidak berterusterang anda mungkin boleh menimbulkan masalah pada diri anda di kemudian hari.

Penyertaan anda dalam penyelidikan ini adalah secara sukarela. Anda tidak perlu menyertai penyelidikan ini jika anda tidak mahu. Anda juga mempunyai hak untuk tidak menjawab mana-mana soalan yang anda tidak mahu jawab. Anda juga boleh menarik diri daripada penyelidikan ini pada bila-bila masa. Jika anda menarik diri, segala maklumat yang telah diperolehi sebelum anda menarik diri tetap akan digunakan dalam penyelidikan ini. Jika anda tidak mahu menyertai ataupun menarik diri dari penyelidikan ini, tindakan anda tidak akan menjejaskan segala hak dan keistimewaan perkhidmatan perubatan dan kesihatan yang selayaknya anda terima.

Penyelidikan ini telah mendapat kelulusan Jawatankuasa Etika dan Penyelidikan Perubatan, Kementerian Kesihatan Malaysia.

5. Apakah tujuan penyelidikan ini dilakukan?

Tujuan penyelidikan ini dilakukan adalah untuk memahami pengalaman dan persepsi pengamal perubatan ke atas perubahan emosi ibu selepas bersalin. Pendapat daripada pengamal perubatan diperlukan bagi membentuk boring kaji selidik yang baru dan bersesuaian dengan populasi di Malaysia. Penyelidikan ini diperlukan kerana ingin meningkatkan kualiti penjagaan ke atas ibu selepas bersalin di Malaysia.

Dianggarkan sejumlah 15 orang pengamal perubatan seperti anda daripada segenap pelusuk negeri akan menyertai penyelidikan ini. Penyelidikan ini akan berlangsung selama 9 bulan dan tempoh pembabitan anda dianggarkan selama 5 bulan iaitu dari 10/03/2020 sehingga 10/08/2020.

6. Apakah tanggungjawab saya sewaktu menyertai penyelidikan ini?

Amat penting anda menjawab kesemua soalan yang ditanyakan oleh kakitangan penyelidikan dengan jujur dan lengkap. Jika keadaan atau kesihatan anda berubah sepanjang penyelidikan ini, anda mesti memberitahu doktor penyelidikan anda. Anggaran masa bagi sesi temuduga anda adalah 30 minit. Anda akan di temuduga oleh penyelidik seperti nama dia atas.

7. Apakah jenis rawatan yang akan saya terima selepas menyertai penyelidikan ini ?

Sekiranya penyelidik merasakan anda memerlukan bantuan dan rawatan lanjut berkaitan masalah emosi selepas bersalin sepanjang tempoh penyelidikan dijalankan, anda akan dirujuk kepada jururawat atau doktor yang bertugas di tempat penyelidikan.

8. Apakah risiko dan kesan-kesan sampingan menyertai penyelidikan ini?

Tiada risiko sampingan yang serius apabila anda mengambil bahagian di dalam penyelidikan ini. Namun, sekiranya anda merasa sedih ketika berbicara berkenaan persepsi dan pengalaman anda sepanjang temuduga dijalankan, anda boleh memohon untuk penyelidikan diberhentikan sementara bagi memberikan masa untuk anda

bertenang. Anda juga dapat memohon bantuan dengan perawat yang bertugas di tempat penyelidikan (klinik kesihatan/hospital) yang dijalankan.

9. Apakah manfaatnya saya menyertai kajian ini?

Penyelidikan ini tidak memberi apa-apa manfaat kepada anda secara langsung. Namun, segala maklumat yang diperolehi daripada penyelidikan ini akan dapat membantu dalam membentuk borang saringan kesihatan emosi kepada ibu selepas bersalin yang bersesuaian sekaligus menambah baik system kesihatan di Malaysia pada masa akan datang.

10. Siapakah yang membiayai penyelidikan ini?

Kajian ini ditaja sepenuhnya oleh Universiti Islam Antarabangsa (UIA), Kampus Kuantan. Namun, anda tidak akan dibayar ketika menyertai penyelidikan ini.

11. Bolehkah penyelidikan ataupun penyertaan saya ditamatkan lebih awal daripada yang dirancang?

Doktor penyelidikan atau penaja boleh menamatkan penyelidikan ini ataupun menamatkan penyertaan anda dalam penyelidikan ini pada bila-bila masa, jika ia perlu demi keselamatan anda. Jika penyelidikan ini dihentikan terlebih awal, di atas sebab-sebab tertentu, anda akan dimaklumkan dan rawatan yang bakal anda terima selepas itu akan diuruskan. Anda mungkin akan diminta menghadiri satu lawatan susulan terakhir untuk penyelidikan ini.

12. Adakah maklumat perubatan saya akan dirahsiakan?

Segala maklumat anda yang diperolehi dalam penyelidikan ini akan disimpan dan dikendalikan secara sulit, bersesuaian dengan peraturan-peraturan dan/atau undang-undang yang berkenaan. Sekiranya hasil penyelidikan ini diterbitkan atau dibentangkan kepada orang ramai, identiti anda tidak akan didedahkan tanpa kebenaran anda terlebih dahulu. Pihak-pihak tertentu seperti individu yang terlibat dalam penyelidikan

dan rawatan perubatan anda, juruaudit dan jurupantau yang terlatih, pihak penaja atau pihak gabungannya, pihak berkuasa kerajaan atau undang-undang, boleh memeriksa dan membuat salinan laporan perubatan anda jika berkenaan dan diperlukan. Segala data yang berkaitan dengan penyelidikan ini akan diarkib untuk tujuan analisis, tetapi identiti anda tidak akan didedahkan sama sekali pada bila-bila masa. Dengan izin anda, doktor yang biasa merawat anda akan dimaklumkan mengenai penyertaan anda dalam penyelidikan ini.

13. Siapakah yang perlu saya hubungi sekiranya saya mempunyai sebarang pertanyaan?

Anda boleh menghubungi penyelidik utama Nur Liyana Shami Binti Ruslan pada sambungan telefon 0179606027 penyelidikan ini atau jika anda mengesyaki anda mengalami kecederaan yang terhasil daripada penyelidikan ini dan anda mahukan maklumat tentang rawatannya.

Jika anda mempunyai sebarang pertanyaan berkaitan dengan hak-hak anda sebagai pesakit dalam penyelidikan ini, sila hubungi: Setiausaha, Jawatankuasa Etika & Penyelidikan Perubatan, Kementerian Kesihatan Malaysia, melalui talian telefon 03-3362 8407/ 8205 / 8888.

APPENDIX D: INFORMED CONSENT – HEALTH CARE PRACTITIONER

INFORMED CONSENT FORM

Title of Study: *Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers*

By signing below, I confirm the following:

- I have been given oral and written information for the above study and have read and understood the information given.
- I have had sufficient time to consider participation in the study and have had the opportunity to ask questions and all my questions have been answered satisfactorily.
- I understand that my participation is voluntary and I can at any time free withdraw from the study without giving a reason and this will in no way affect my future treatment. I am not taking part in any other research study at this time. I understand the risks and benefits, and I freely give my informed consent to participate under the conditions stated. I understand that I must follow the investigator's instructions related to my participation in the study.
- I understand that study staff, qualified monitors and auditors, the sponsor or its affiliates, and governmental or regulatory authorities, have direct access to my medical record in order to make sure that the study is conducted correctly and the data are recorded correctly. All personal details will be treated as STRICTLY CONFIDENTIAL
- I will receive a copy of this subject information/informed consent form signed and dated to bring home.
- I agree/disagree* for my family doctor to be informed of my participation in this study. (*delete which is not applicable)

Subject:

Signature:

I/C number:

Name:

Date:

Investigator conducting informed consent:

Signature:

I/C number:

Name:

Date:

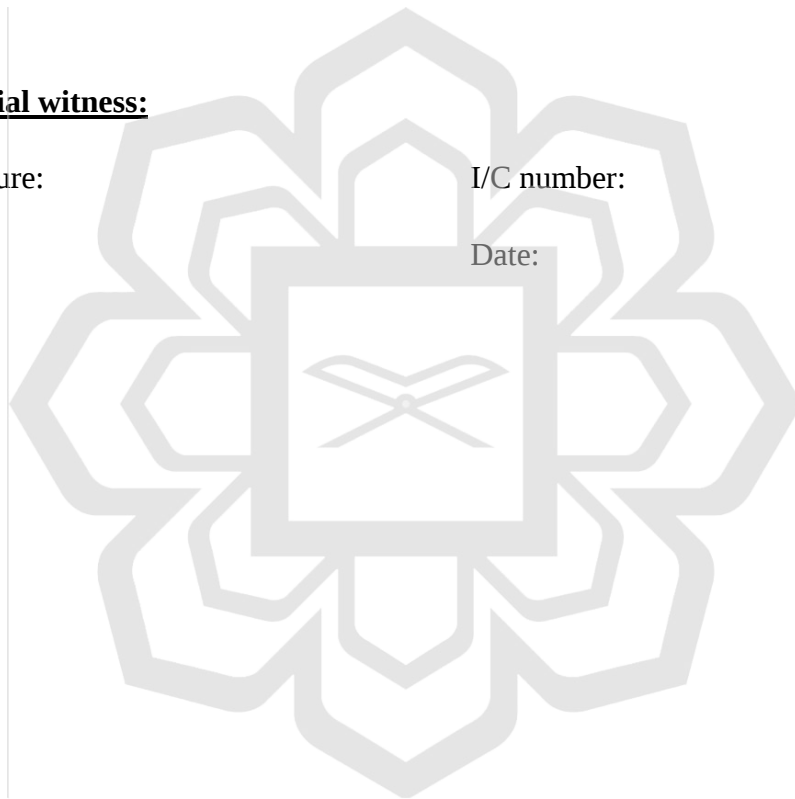
Impartial witness:

Signature:

I/C number:

Name:

Date:



BORANG PERSETUJUAN/ KEIZINAN PESERTA

Tajuk Penyelidikan: *Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers*

Dengan menandatangani di bawah, saya mengesahkan bahawa:

- Saya telah diberi maklumat tentang penyelidikan di atas secara lisan dan bertulis and saya telah membaca dan memahami segala maklumat yang diberikan dalam risalah ini.
- Saya telah diberikan masa yang secukupnya untuk mempertimbangkan penyertaan saya dalam penyelidikan ini dan telah diberi peluang untuk bertanya soalan dan semua persoalan saya telah dijawab dengan sempurna dan memuaskan.
- Saya juga faham bahawa penyertaan saya adalah secara sukarela dan pada bila-bila masa saya bebas menarik diri daripada penyelidikan ini tanpa harus memberi sebarang alasan dan ianya sama sekali tidak akan menjejaskan rawatan perubatan saya pada masa akan datang. Saya tidak mengambil bahagian dalam mana-mana penyelidikan lain pada masa ini. Saya juga memahami tentang risiko dan manfaat penyelidikan ini dan saya secara sukarela memberi persetujuan untuk menyertai penyelidikan ini di bawah syarat-syarat yang telah dinyatakan di atas. Saya faham saya harus mematuhi nasihat dan arahan yang berkaitan dengan penyertaan saya dalam penyelidikan ini daripada doktor penyelidikan (penyelidik).
- Saya faham bahawa kakitangan penyelidikan, pemantau dan juruaudit terlatih, pihak penaja atau gabungannya, dan pihak berkuasa kerajaan atau undang-undang, mempunyai akses langsung dan boleh menyemak laporan perubatan saya bagi memastikan penyelidikan ini dijalankan dengan betul dan data direkodkan dengan betul. Segala maklumat dan data peribadi akan dianggap sebagai SULIT.

- Saya akan menerima satu salinan ‘Risalah Maklumat Pesakit dan Borang Persetujuan atau Keizinan Pesakit’ yang telah lengkap dengan tarikh dan tandatangan untuk dibawa pulang ke rumah.
- Saya bersetuju/ tidak bersetuju* untuk doktor yang biasa merawat saya diberitahu tentang penyertaan saya dalam penyelidikan ini. (**Potong mana yang tidak berkenaan*)

Subjek :

Tandatangan:

Nombor K/P:

Nama:

Tarikh :

Penyelidik yang mengendalikan proses menandatangani borang keizinan:

Tandatangan:

Nombor K/P:

Nama:

Tarikh :

Saksi tidak-berpihak/adil: (*Diperlukan; jika subjek adalah buta huruf dan kandungan risalah maklumat pesakit disampaikan secara lisan kepada subjek*)

Tandatangan:

Nombor K/P:

Nama:

Tarikh:

APPENDIX E: PATIENT/PARTICIPANT INFORMATION SHEET (PIS) – POSTNATAL MOTHER

PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

(For Postnatal Mother - Interview)

12. Title of study: Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers

13. Name of investigator and institution:

NO	NAME	INSTITUTION
1	Nur Liyana Shahmi Binti Ruslan	International Islamic University Malaysia (IIUM), Kuantan Campus
2	Asst. Prof. Dr. Siti Roshaidai Binti Mohd Arifin	International Islamic University Malaysia (IIUM), Kuantan Campus
3	Asst. Prof. Dr. Karimah Hanim Binti Abd. Aziz	International Islamic University Malaysia (IIUM), Kuantan Campus
4	Siti Aishah Binti Daud	International Islamic University Malaysia (IIUM), Kuantan Campus
5	Dr. Asma Perveen	Universiti Pendidikan Sultan Idris (UPSI)
6	Dr. Nurul Ain Hidayah Binti Abas	Universiti Pendidikan Sultan Idris (UPSI)
7	Dr. Fathima Begum Binti Syed Mohideen	Universiti Sains Islam Malaysia (USIM)
8	Dr. Khadijah Hasanah Binti Abang Abdullah	Universiti Sains Islam Malaysia (USIM)
9	Assoc. Prof. Dr. Rohayah Binti Husain	Universiti Sultan Zainal Abidin (UniSZA)
10	Dr. Khairi Bin Che Mat	Universiti Sultan Zainal Abidin (UniSZA)
11	Dr. Siti Norazlina Binti Juhari	Universiti Sultan Zainal Abidin (UniSZA)

14. Name of sponsor: International Islamic University Malaysia (IIUM), Kuantan Campus

15. Introduction:

It is important that you understand why the research is being done and what it will involve. Please take your time to read through and consider this information carefully before you decide if you are willing to participate. Ask the study staff if anything is unclear or if you would like more information. After you are properly satisfied that you understand this study, and that you wish to participate, you must sign this informed consent form.

Your participation in this study is voluntary. You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time. If you withdraw, any data collected from you up to your withdrawal will still be used for the study. Your refusal to participate or withdrawal will not affect any medical or health benefits to which you are otherwise entitled.

This study has been approved by the Medical Research and Ethics Committee, Ministry of Health Malaysia.

16. What is the purpose of the study?

The purpose of this study is to understand more about the perception and experience of women who had emotional changes after the childbirth

This research will be conducted for duration of 2 month (10/03/2020 till 10/05/2020). The expected number of participants is 5 individuals.

17. What are my responsibilities when taking part in this study?

It is important that you answer all of the questions asked by the study staff honestly and completely which will take about 30 minutes of your time. Study team will also access your medical records for the following information. 1. Medical history 2. Surgical history 3. Psychological history 4. Socio-demographic. You will be interviewed by one of the investigators mention above.

18. What are the potential risks and side effects of being in this study?

There are no serious risks anticipated by taking part in this study. However, if the participants feel upset by talking about her experience and opinion, she may take a break or stop to answer at any time. As the participants are registered with the MCH clinics, she may ask for any additional support that she may need as fast as she can.

19. What are the benefits of being in this study?

There will be no direct benefit to the participant at this phase. However, the information given by the participant will be used by the researcher to develop appropriate assessment tool to help assessing postnatal mental health after the childbirth as well as will help to improve health care system in the future. Thus, the participant will be contributing towards better health care quality in Malaysia by participating this study.

20. Who is funding the research?

This study is sponsored by International Islamic University Malaysia (IIUM), Kuantan Campus. You will not be paid for participating in this study.

21. Will my medical information be kept private?

All your information obtained in this study will be kept and handled in a confidential manner, in accordance with applicable laws and/or regulations. When publishing or presenting the study results, your identity will not be revealed without your expressed consent. Only members of this study team, qualified monitors and auditors, and governmental or regulatory authorities including MREC may inspect the study data and private information of the subjects, where appropriate and necessary. No identifiable information will be transmitted to other parties including sponsor

22. Who should I call if I have questions?

If you have any questions about the study or if you think you have a study related injury and you want information about this study, please contact the Principal Investigator Nur

Liyana Shahmi Binti Ruslan at telephone number 0179606027 or email me at liyana.shahmi@gmail.com.

If you have any questions about your rights as a participant in this study, please contact:
The Secretary, Medical Research & Ethics Committee, Ministry of Health Malaysia, at
telephone number 03-3362 8407/8205/8888/8100.



RISALAH MAKLUMAT PESAKIT DAN

BORANG PERSETUJUAN atau KEIZINAN PESAKIT

(untuk ibu selepas bersalin - temuduga)

1. Tajuk penyelidikan: Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers

2. Nama Institusi and nama penyelidik:

NO	NAMA	INSTITUSI
1	Nur Liyana Shahmi Binti Ruslan	Universiti Islam Antarabangsa (UIA), Kampus Kuantan
2	Asst. Prof. Dr. Siti Roshaidai Binti Mohd Arifin	Universiti Islam Antarabangsa (UIA), Kampus Kuantan
3	Asst. Prof. Dr. Karimah Hanim Binti Abd. Aziz	Universiti Islam Antarabangsa (UIA), Kampus Kuantan
4	Siti Aishah Binti Daud	Universiti Islam Antarabangsa (UIA), Kampus Kuantan
5	Dr. Asma Perveen	Universiti Pendidikan Sultan Idris (UPSI)
6	Dr. Nurul Ain Hidayah Binti Abas	Universiti Pendidikan Sultan Idris (UPSI)
7	Dr. Fathima Begum Binti Syed Mohideen	Universiti Sains Islam Malaysia (USIM)
8	Dr. Khadijah Hasanah Binti Abang Abdullah	Universiti Sains Islam Malaysia (USIM)
9	Assoc. Prof. Dr. Rohayah Binti Husain	Universiti Sultan Zainal Abidin (UniSZA)
10	Dr. Khairi Bin Che Mat	Universiti Sultan Zainal Abidin (UniSZA)
11	Dr. Siti Norazlina Binti Juhari	Universiti Sultan Zainal Abidin (UniSZA)

3. Nama penaja: Universiti Islam Antarabangsa (UIA), Kampus Kuantan

4. Pengenalan:

Anda telah dijemput untuk menyertai penyelidikan ini kerana anda merupakan ibu selepas bersalin. Risalah ini menjelaskan hal-hal berkenaan penyelidikan tersebut dengan lebih mendalam dan terperinci. Amat penting anda memahami mengapa

penyelidikan ini dilakukan dan apa yang dilakukan dalam penyelidikan ini. Sila ambil masa yang secukupnya untuk membaca dan mempertimbangkan dengan teliti penerangan yang diberi sebelum anda bersetuju untuk menyertai penyelidikan ini. Jika ada sebarang kemusykilan ataupun maklumat lanjut yang anda ingin tahu, anda boleh bertanya dengan mana-mana kakitangan yang terlibat dalam penyelidikan ini. Setelah anda berpuashati bahawa anda memahami penyelidikan ini, dan anda berminat untuk turut serta, anda dikehendaki untuk menandatangani Borang Persetujuan atau Keizinan Pesakit, pada muka surat akhir risalah ini. Untuk menyertai penyelidikan ini, anda perlu memberi doktor anda maklumat sejarah kesihatan ataupun penyakit anda yang lalu; jika anda tidak berterusterang anda mungkin boleh menimbulkan masalah pada diri anda di kemudian hari.

Penyertaan anda dalam penyelidikan ini adalah secara sukarela. Anda tidak perlu menyertai penyelidikan ini jika anda tidak mahu. Anda juga mempunyai hak untuk tidak menjawab mana-mana soalan yang anda tidak mahu jawab. Anda juga boleh menarik diri daripada penyelidikan ini pada bila-bila masa. Jika anda menarik diri, segala maklumat yang telah diperolehi sebelum anda menarik diri tetap akan digunakan dalam penyelidikan ini. Jika anda tidak mahu menyertai ataupun menarik diri dari penyelidikan ini, tindakan anda tidak akan menjejaskan segala hak dan keistimewaan perkhidmatan perubatan dan kesihatan yang selayaknya anda terima.

Penyelidikan ini telah mendapat kelulusan Jawatankuasa Etika dan Penyelidikan Perubatan, Kementerian Kesihatan Malaysia.

5. Apakah tujuan penyelidikan ini dilakukan?

Tujuan penyelidikan ini dilakukan adalah untuk memahami pengalaman dan persepsi ibu yang mengalami perubahan emosi selepas bersalin. Penyelidikan ini diperlukan kerana ingin meningkatkan kualiti penjagaan ke atas ibu selepas bersalin di Malaysia.

Dianggarkan sejumlah 5 orang pesakit seperti anda daripada segenap pelusuk negeri akan menyertai penyelidikan ini. Penyelidikan ini akan berlangsung selama 9 bulan dan tempoh pembabitan anda dianggarkan selama 2 bulan iaitu dari 10/03/2020 sehingga 10/05/2020.

6. Apakah tanggungjawab saya sewaktu menyertai penyelidikan ini?

Amat penting anda menjawab kesemua soalan yang ditanyakan oleh kakitangan penyelidikan dengan jujur dan lengkap. Jika keadaan atau kesihatan anda berubah sepanjang penyelidikan ini, anda mesti memberitahu doktor penyelidikan anda. Anggaran masa bagi sesi temuduga anda adalah 30 minit. Kumpulan penyelidik mungkin akan meneliti rekod kesihatan anda seperti 1. Sejarah penyakit 2. Sejarah pembedahan 3. Sejarah psikologi dan 4. Sosio-demografik. Anda akan di temuduga oleh penyelidik seperti nama dia atas.

7. Apakah jenis rawatan yang akan saya terima selepas menyertai penyelidikan ini ?

Sekiranya penyelidik merasakan anda memerlukan bantuan dan rawatan lanjut berkaitan masalah emosi selepas bersalin sepanjang tempoh penyelidikan dijalankan, anda akan dirujuk kepada jururawat atau doktor yang bertugas di tempat penyelidikan.

8. Apakah risiko dan kesan-kesan sampingan menyertai penyelidikan ini?

Tiada risiko sampingan yang serius apabila anda mengambil bahagian di dalam penyelidikan ini. Namun, sekiranya anda merasa sedih ketika berbicara berkenaan persepsi dan pengalaman anda sepanjang temuduga dijalankan, anda boleh memohon untuk penyelidikan diberhentikan sementara bagi memberikan masa untuk anda bertenang. Anda juga dapat memohon bantuan dengan perawat yang bertugas di tempat penyelidikan (klinik kesihatan) yang dijalankan.

9. Apakah manfaatnya saya menyertai kajian ini?

Penyelidikan ini tidak memberi apa-apa manfaat kepada anda secara langsung. Namun, segala maklumat yang diperolehi daripada penyelidikan ini akan dapat membantu dalam membentuk borang saringan kesihatan emosi kepada ibu selepas bersalin yang bersesuaian sekaligus menambah baik system kesihatan di Malaysia pada masa akan datang.

10. Siapakah yang membiayai penyelidikan ini?

Kajian ini ditaja sepenuhnya oleh Universiti Islam Antarabangsa (UIA), Kampus Kuantan. Namun, anda tidak akan dibayar ketika menyertai penyelidikan ini.

11. Bolehkah penyelidikan ataupun penyertaan saya ditamatkan lebih awal daripada yang dirancang?

Doktor penyelidikan atau penaja boleh menamatkan penyelidikan ini ataupun menamatkan penyertaan anda dalam penyelidikan ini pada bila-bila masa, jika ia perlu demi keselamatan anda. Jika penyelidikan ini dihentikan terlebih awal, di atas sebab-sebab tertentu, anda akan dimaklumkan dan rawatan yang bakal anda terima selepas itu akan diuruskan. Anda mungkin akan diminta menghadiri satu lawatan susulan terakhir untuk penyelidikan ini.

12. Adakah maklumat perubatan saya akan dirahsiakan?

Segala maklumat anda yang diperolehi dalam penyelidikan ini akan disimpan dan dikendalikan secara sulit, bersesuaian dengan peraturan-peraturan dan/ atau undang-undang yang berkenaan. Sekiranya hasil penyelidikan ini diterbitkan atau dibentangkan kepada orang ramai, identiti anda tidak akan didedahkan tanpa kebenaran anda terlebih dahulu. Pihak- pihak tertentu seperti individu yang terlibat dalam penyelidikan dan rawatan perubatan anda, juruaudit dan jurupantau yang terlatih, pihak penaja atau pihak gabungannya, pihak berkuasa kerajaan atau undang-undang termasuk MREC, boleh memeriksa dan membuat salinan laporan perubatan anda jika berkenaan dan diperlukan. Tiada data anda yang jelas akan didedahkan kepada pihak lain termasuk pembiaya penyelidikan ini. Segala data yang berkaitan dengan penyelidikan ini akan diarkib untuk tujuan analisis, tetapi identiti anda tidak akan didedahkan sama sekali pada bila-bila masa. Dengan izin anda, doktor yang biasa merawat anda akan dimaklumkan mengenai penyertaan anda dalam penyelidikan ini.

13. Siapakah yang perlu saya hubungi sekiranya saya mempunyai sebarang pertanyaan?

Anda boleh menghubungi penyelidik utama Nur Liyana Shami Binti Ruslan pada sambungan telefon 0179606027 penyelidikan ini atau jika anda mengesyaki anda mengalami kecederaan yang terhasil daripada penyelidikan ini dan anda mahukan maklumat tentang rawatannya. Jika anda mempunyai sebarang pertanyaan berkaitan dengan hak-hak anda sebagai pesakit dalam penyelidikan ini, sila hubungi: Setiausaha, Jawatankuasa Etika & Penyelidikan Perubatan, Kementerian Kesihatan Malaysia, melalui talian telefon 03-3362 8407/ 8205 / 8888.



APPENDIX F: INFORMED CONSENT – POSTNATAL MOTHER

INFORMED CONSENT FORM

Title of Study: *Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers*

By signing below, I confirm the following:

- I have been given oral and written information for the above study and have read and understood the information given.
- I have had sufficient time to consider participation in the study and have had the opportunity to ask questions and all my questions have been answered satisfactorily.
- I understand that my participation is voluntary and I can at anytime free withdraw from the study without giving a reason and this will in no way affect my future treatment. I am not taking part in any other research study at this time. I understand the risks and benefits, and I freely give my informed consent to participate under the conditions stated. I understand that I must follow the investigator's instructions related to my participation in the study.
- I understand that study staff, qualified monitors and auditors, the sponsor or its affiliates, and governmental or regulatory authorities, have direct access to my medical record in order to make sure that the study is conducted correctly and the data are recorded correctly. All personal details will be treated as STRICTLY CONFIDENTIAL
- I will receive a copy of this subject information/informed consent form signed and dated to bring home.
- I agree/disagree* for my family doctor to be informed of my participation in this study. (*delete which is not applicable)

Subject:

Signature:

I/C number:

Name:

Date:

Investigator conducting informed consent:

Signature:

I/C number:

Name:

Date:

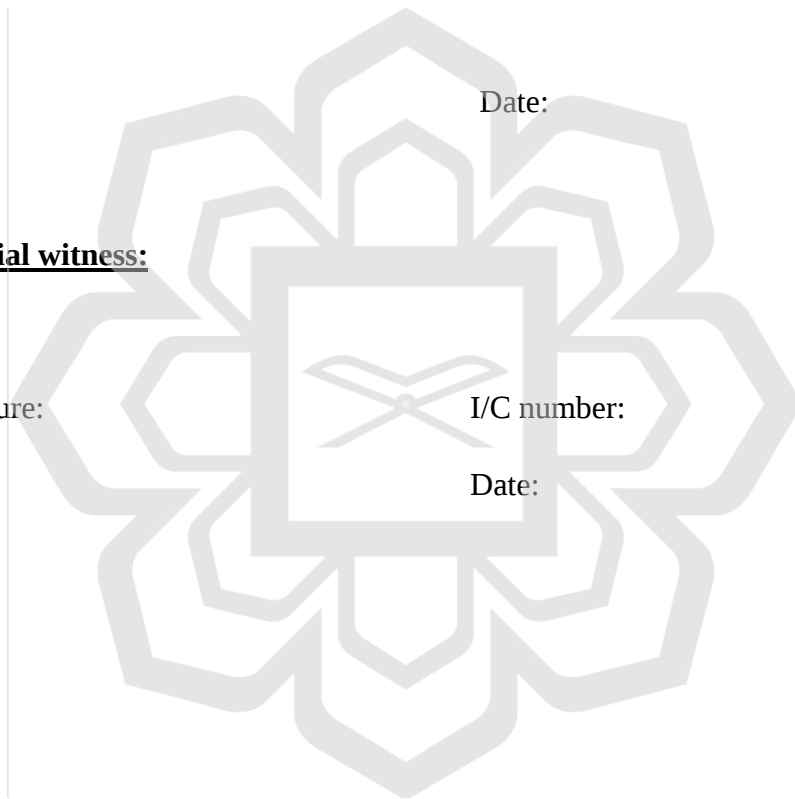
Impartial witness:

Signature:

I/C number:

Name:

Date:



BORANG PERSETUJUAN/ KEIZINAN PESAKIT

Tajuk Penyelidikan : *Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers*

Dengan menandatangani di bawah, saya mengesahkan bahawa :

- Saya telah diberi maklumat tentang penyelidikan di atas secara lisan dan bertulis and saya telah membaca dan memahami segala maklumat yang diberikan dalam risalah ini.
- Saya telah diberikan masa yang secukupnya untuk mempertimbangkan penyertaan saya dalam penyelidikan ini dan telah diberi peluang untuk bertanyakan soalan dan semua persoalan saya telah dijawab dengan sempurna dan memuaskan.
- Saya juga faham bahawa penyertaan saya adalah secara sukarela dan pada bila-bila masa saya bebas menarik diri daripada penyelidikan ini tanpa harus memberi sebarang alasan dan ianya sama sekali tidak akan menjejaskan rawatan perubatan saya pada masa akan datang. Saya tidak mengambil bahagian dalam mana-mana penyelidikan lain pada masa ini. Saya juga memahami tentang risiko dan manfaat penyelidikan ini dan saya secara sukarela memberi persetujuan untuk menyertai penyelidikan ini di bawah syarat-syarat yang telah dinyatakan di atas. Saya faham saya harus mematuhi nasihat dan arahan yang berkaitan dengan penyertaan saya dalam penyelidikan ini daripada doktor penyelidikan (penyelidik).
- Saya faham bahawa kakitangan penyelidikan, pemantau dan juruaudit terlatih, pihak penaja atau gabungannya, dan pihak berkuasa kerajaan atau undang-undang, mempunyai akses langsung dan boleh menyemak laporan perubatan saya bagi memastikan penyelidikan ini dijalankan dengan betul dan data direkodkan dengan betul. Segala maklumat dan data peribadi akan dianggap sebagai SULIT.

- Saya akan menerima satu salinan ‘Risalah Maklumat Pesakit dan Borang Persetujuan atau Keizinan Pesakit’ yang telah lengkap dengan tarikh dan tandatangan untuk dibawa pulang ke rumah.
- Saya bersetuju/ tidak bersetuju* untuk doktor yang biasa merawat saya diberitahu tentang penyertaan saya dalam penyelidikan ini. (**Potong mana yang tidak berkenaan*)

Subjek :

Tandatangan:

Nombor K/P:

Nama:

Tarikh:

Penyelidik yang mengendalikan proses menandatangani borang keizinan:

Tandatangan:

Nombor K/P:

Nama:

Tarikh:

Saksi tidak-berpihak/adil: (*Diperlukan; jika subjek adalah buta huruf dan kandungan risalah maklumat pesakit disampaikan secara lisan kepada subjek*)

Tandatangan:

Nombor K/P:

Nama:

Tarikh:

APPENDIX G: EDINBURGH POSTNATAL DEPRESSION SCALE (EPDS)

English Version

Screening Tool 1: -----
Name: -----
Age: -----
Weeks/Months after your last childbirth: -----
Nationality: -----
Race: -----
Phone Number: -----

Please choose the answer that comes closest to how you have felt after your last childbirth, not just how you feel today. Please answer all questions. For each question, please put a tick in the box next to the answer that best matches your own experience.

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

0 As much as I always could

1 Not quite so much now

2 Definitely not so much now

3 Not at all

2. I have looked forward with enjoyment to things.

0 As much as I ever did

1 Rather less than I used to

2 Definitely less than I used to

3 Hardly at all

3. I have blamed myself unnecessarily when things went wrong.

3 Yes, most of the time

2 Yes, some of the time

1 Not very often

0 No, never

4. I have been anxious or worried for no good reason.

0 No, not at all

1 Hardly ever

2 Yes, sometimes

3 Yes, very often

5. I have felt scared or panicky for not very good reason.

3 Yes, quite a lot

2 Yes, sometimes

1 No, not much

0 No, not at all

6. Things have been getting on top of me.

3 Yes, most of the time I haven't been able to cope at all

2 Yes, sometimes I haven't been coping as well as usual

1 No, most of the time I have coped quite well

0 No, I have been coping as well as ever

7. I have been so unhappy that I have had difficulty sleeping. 3 Yes, most of the time

2 Yes, sometimes

1 Not very often

0 No, not at all

8. I have felt sad or miserable.

3 Yes, most of the time

2 Yes, quite often

1 Not very often

0 No, not at all

9. I have been so unhappy that I have been crying.

3 Yes, most of the time

2 Yes, quite often

1 Only occasionally

0 No, never

10. The thought of harming myself has occurred to me.

3 Yes, quite often

2 Sometimes

1 Hardly ever

0 Never

Thank you for taking time to fill in the questionnaire.

Please return the questionnaire in the given envelope to the researcher.

Ujian saringan 1

Edinburgh Postnatal Depression Scale (EPDS)

Malay Version

Nama: -----

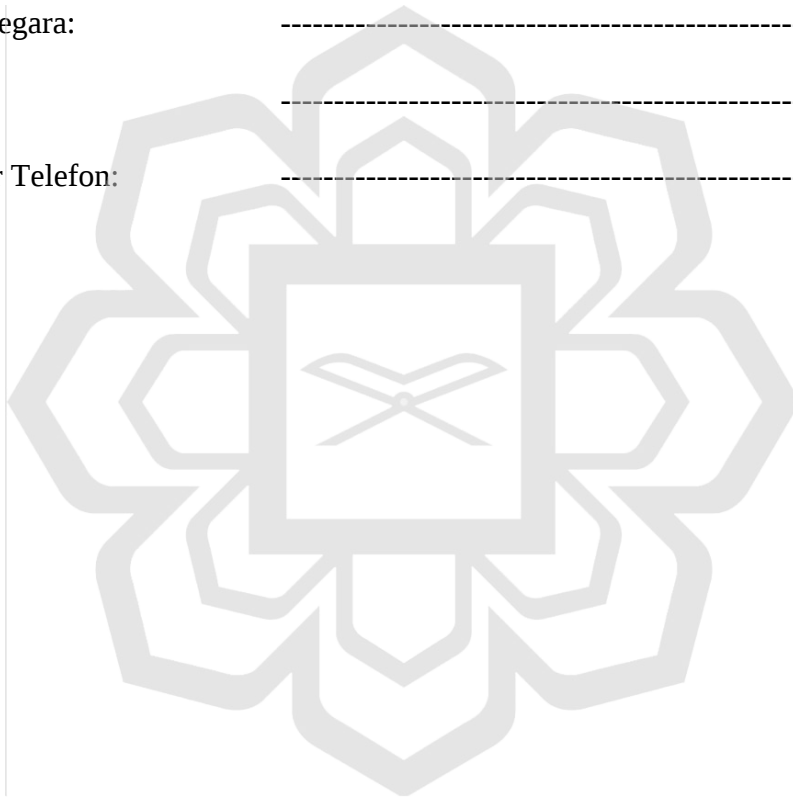
Umur: -----

Tarikh Lahir anak yang bongsu: -----

Warganegara: -----

Bangsa: -----

Nombor Telefon: -----



Sila tandakan jawapan yang paling hampir bagi menggambarkan apa yang Puan rasakan selepas melahirkan bayi anda dan bukan hanya sekadar hari ini sahaja. Sila jawab kesemua soalan. Untuk setiap soalan, sila tandakan $\surd$ di dalam kotak yang telah disediakan.

1. Saya dapat bergelak ketawa seperti biasa apabila melihat sesuatu perkara yang lucu.

- ☐ 0 Sebagaimana biasa.
- ☐ 1 Kurang daripada biasa.
- ☐ 2 Sangat kurang daripada biasa.
- ☐ 3 Tidak langsung.

2. Saya rasa bersemangat untuk melakukan sebarang aktiviti.

- ☐ 0 Sebanyak mana biasa.
- ☐ 1 Agak kurang daripada biasa.
- ☐ 2 Sangat kurang daripada biasa.
- ☐ 3 Tidak pernah langsung.

3. Saya menyalahkan diri sendiri apabila sesuatu yang tidak baik terjadi.

- ☐ 3 Ya, sepanjang masa.
- ☐ 2 Ya, kadangkala.
- ☐ 1 Jarang sekali.
- ☐ 0 Tidak pernah.

4. Saya berasa risau dan bimbang tanpa sebab.

- ☐ 0 Tidak langsung
- ☐ 1 Jarang sekali.
- ☐ 2 Ya, kadangkala.
- ☐ 3 Ya, sangat kerap.

5. Saya berasa takut dan panik tanpa sebab.

- ☐ 3 Ya, sangat kerap.
- ☐ 2 Ya, kadangkala.
- ☐ 1 Jarang sekali.
- ☐ 0 Tidak pernah.

6. Saya dibebani oleh banyak masalah.

- ☐ 3 Ya, kebanyakan masa saya tidak berupaya menanganinya langsung.
- ☐ 2 Ya, kadangkala saya tidak berupaya menanganinya seperti biasa.
- ☐ 1 Tidak, kebanyakan masa saya berupaya menanganinya dengan baik.
- ☐ 0 Tidak, saya berupaya menangani semua masalah dengan baik pada setiap masa.

7. Saya mengalami kesedihan sehingga sukar untuk tidur.

- ☐ 3 Ya, kebanyakan masa
- ☐ 2 Ya, kadang-kadang
- ☐ 1 Jarang-jarang sekali
- ☐ 0 Tidak pernah

8. Saya berasa sedih atau serabut.

☐ 3 Ya, kebanyakan masa.

☐ 2 Ya, kadang-kadang.

☐ 1 Jarang-jarang sekali.

0 Tidak pernah.

9. Saya berasa sangat sedih sehingga menangis.

☐ 3 Ya, kebanyakan masa.

☐ 2 Ya, agak kerap.

☐ 1 Hanya sekali sekala.

☐ 0 Tidak pernah.

10. Saya pernah terfikir untuk mencederakan diri sendiri.

☐ 3 Ya, kebanyakan masa.

☐ 2 Ya, agak kerap.

☐ 1 Amat jarang sekali.

☐ 0 Tidak pernah.

Terima kasih kerana telah meluangkan masa untuk menjawab soalan ini.

Sila masukkan soalan yang telah dijawab ke dalam sampul surat yang telah diberi dan serahkan soalan yang telah dijawab kepada penyelidik. Puan boleh mendapatkan maklumbalas tentang skor yang Puan perolehi dalam ujian saringan ini daripada pihak penyelidik.

APPENDIX H: DEPRESSION, ANXIETY, STRESS SCALE (DASS)

English Version

DASS 21 NAME _____ DATE _____

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all - NEVER
- 1 Applied to me to some degree, or some of the time - SOMETIMES
- 2 Applied to me to a considerable degree, or a good part of time - OFTEN
- 3 Applied to me very much, or most of the time - ALMOST ALWAYS

		N	S	O	AA	FOR OFFICE USE		
						D	A	S
1	I found it hard to wind down	0	1	2	3			
2	I was aware of dryness of my mouth	0	1	2	3			
3	I couldn't seem to experience any positive feeling at all	0	1	2	3			
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3			
5	I found it difficult to work up the initiative to do things	0	1	2	3			
6	I tended to over-react to situations	0	1	2	3			
7	I experienced trembling (eg, in the hands)	0	1	2	3			
8	I felt that I was using a lot of nervous energy	0	1	2	3			
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3			
10	I felt that I had nothing to look forward to	0	1	2	3			
11	I found myself getting agitated	0	1	2	3			
12	I found it difficult to relax	0	1	2	3			
13	I felt down-hearted and blue	0	1	2	3			
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3			
15	I felt I was close to panic	0	1	2	3			
16	I was unable to become enthusiastic about anything	0	1	2	3			
17	I felt I wasn't worth much as a person	0	1	2	3			
18	I felt that I was rather touchy	0	1	2	3			
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3			
20	I felt scared without any good reason	0	1	2	3			
21	I felt that life was meaningless	0	1	2	3			
TOTALS								

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Depression, Anxiety, Stress Scale (DASS)

Malay Version

SARINGAN MINDA SIHAT

SOAL SELIDIK DASS₂₁

- LANGKAH 1 : Sila baca dan jawab soal selidik DASS₂₁
 LANGKAH 2 : Masukkan skala markah jawapan ke dalam ruangan kosong dibahagian 2, mengikut soalan (s) bagi setiap kategori (Stress, Anzieti dan Kemurungan)
 LANGKAH 3 : Jumlahkan skala markah bagi setiap kategori bagi mengetahui tahap status kesihatan
 LANGKAH 4 : Sila isikan keputusan dalam bahagian 3 dan isikan dalam keratan di muka hadapan

BAHAGIAN 1

Sila baca kenyataan dan bulatkan jawapan (skala markah 0,1,2,3) yang menggambarkan keadaan anda **SEMINGGU** yang lepas. Tidak ada jawapan yang betul atau salah. JANGAN guna terlalu banyak masa untuk mana-mana kenyataan.

Skala markah adalah seperti berikut:

0 = Tidak pernah sama sekali 1 = Jarang 2 = Kerap 3 = Sangat Kerap

S		Tidak Pernah	Jarang	Kerap	Sangat Kerap
1	Saya rasa susah untuk bertenang	0	1	2	3
2	Saya sedar mulut saya rasa kering	0	1	2	3
3	Saya seolah-olah tidak dapat mengalami perasaan positif sama sekali	0	1	2	3
4	Saya mengalami kesukaran bernafas (contohnya, bernafas terlalu cepat Tercungap-cungap walaupun tidak melakukan aktiviti fizikal)	0	1	2	3
5	Saya rasa tidak bersemangat untuk memulakan sesuatu keadaan	0	1	2	3
6	Saya cenderung bertindak secara berlebihan kepada sesuatu keadaan	0	1	2	3
7	Saya pernah menggeletar (contohnya tangan)	0	1	2	3
8	Saya rasa saya terlalu gelisah	0	1	2	3
9	Saya risau akan berlaku keadaan di mana saya panik dan berkelakuan bodoh	0	1	2	3
10	Saya rasa tidak ada yang saya harapkan (putus harapan)	0	1	2	3
11	Saya dapati saya mudah resah	0	1	2	3
12	Saya merasa sukar untuk relaks	0	1	2	3
13	Saya rasa muram dan sedih	0	1	2	3
14	Saya tidak boleh terima apa jua yang menghalangi saya daripada meneruskan apa yang saya sedang lakukan	0	1	2	3
15	Saya rasa hampir panik	0	1	2	3
16	Saya tidak bersemangat langsung	0	1	2	3
17	Saya rasa diri saya tidak berharga	0	1	2	3
18	Saya mudah tersinggung	0	1	2	3
19	Walaupun saya tidak melakukan aktiviti fizikal, saya sedar akan debaran Jantung saya (contoh: degupan jantung lebih cepat)	0	1	2	3
20	Saya rasa takut tanpa sebab	0	1	2	3
21	Saya rasa hidup ini tidak beerti lagi	0	1	2	3

BAHAGIAN 2

Panduan Mengira Skor :
Masukkan skala markah jawapan bagi soalan (S) bagi setiap kategori

STRESS (TEKANAN)								
Soalan	S1	S6	S8	S11	S12	S14	S18	Jumlah
Markah								

ANZIETI (KERISAUAN)								
Soalan	S2	S4	S7	S9	S15	S19	S20	Jumlah
Markah								

DEPRESSION (KEMURUNGAN)								
Soalan	S3	S5	S10	S13	S16	S17	S21	Jumlah
Markah								

Selepas dijumlahkan, sila rujuk kepada petak skor jaringan dan terjemahkan jumlah skor untuk mengetahui tahap status kesihatan mental anda

SKOR SARINGAN			
	Kemurungan	Anzieti	Stress
Normal	0-5	0-4	0-7
Ringan	6-7	5-6	8-9
Sederhana	8-10	7-8	10-13
Teruk	11-14	9-10	14-17
Sangat Teruk	15+	11+	18+

BAHAGIAN 3

Isikan keputusan (normal, ringan, sederhana, teruk atau sangat teruk) dalam jadual di bawah.

KEPUTUSAN UJIAN DASS

Ujian	Tahap
Stres	
Anzieti	
Kemurungan	

APPENDIX I: INTERVIEW GUIDE

Health Care Practitioner (HCP)

1. General knowledge
 - Professional background and experience
 - General understanding on postnatal mental health
 - General knowledge on types of postnatal mental illness
2. HCPs perception and understanding on the indicators of postnatal mental illness
 - Importance of assessing and indicating postnatal mental illness
 - Manifestation / sign & symptoms which indicate each type postnatal mental illness
 - Sociodemographic factors which influence on the status of postnatal mental health
 - Issues in relation to multicultural and multiracial background in Malaysia
3. Differentiation between each postnatal mental illness
 - HCPs perception and experience to differentiate each type of postnatal mental illness
4. Mechanism to screen / detect postnatal mental illness within primary care setting
 - Current mechanism / tool to measure level of postnatal mental illness
 - Availability in primary care setting in Malaysia
 - HCPs perception on current assessment tool for early detection of postnatal mental illness
5. Limitation, constrain and suggestions
 - Problems occur in delivering current assessment tools in primary care setting
 - Suggestion to encounter those problems

Postnatal Mother

1. General Background

- Sociodemographic factor – age, parity, cultural background, family situation

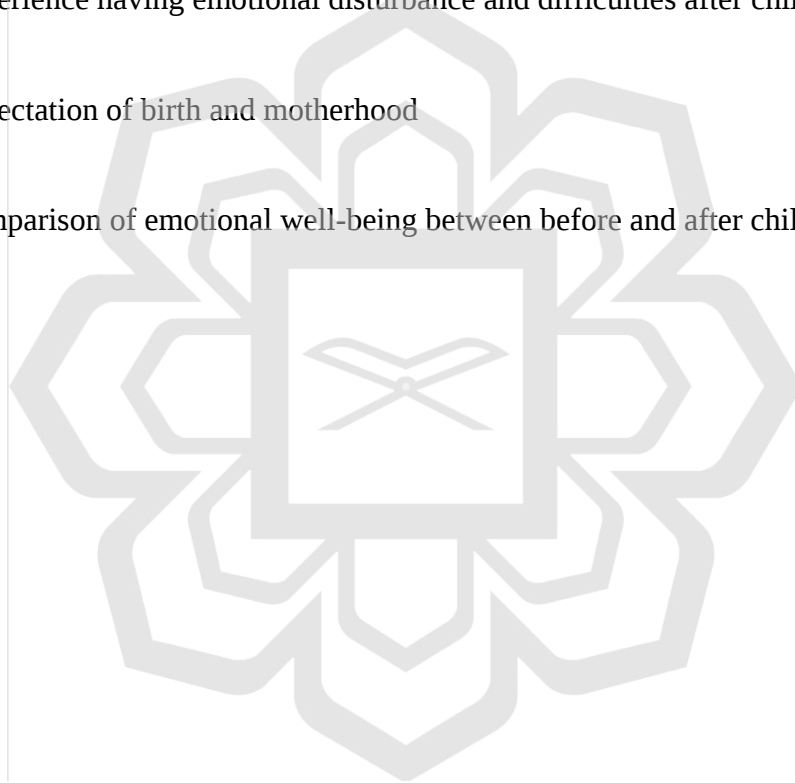
2. Perception of emotional well-being after childbirth

- Understanding on emotional well-being after child birth
- Exploration of current emotional status
- What influence emotional well being

3. Experience having emotional disturbance and difficulties after childbirth

4. Expectation of birth and motherhood

5. Comparison of emotional well-being between before and after childbirth



APPENDIX J: CONSOLIDATED CRITERIA FOR REPORTING QUALITATIVE STUDIES (COREQ) – ITEM CHECKLIST

No	Item	Guide question/description	Answer
Domain 1: Research team and reflexivity			
Personal characteristics			
1	Interviewer	Which author conducted the interviewer	The researcher
2	Credentials	What were the researcher's credentials?	Student master
3	Occupation	What was their occupation at the time of the study	Master student and nurse
4	Gender	Was the researcher male or female?	Female
5	Experience & training	What experience or training did the researcher have?	Methodology research course
Relationship with participants			
6	Relationship establish	Was a relationship established prior to study commencement?	Relationship commenced during researcher's visit to the clinic or general hospital
7	Participants knowledge on the interview	What did the participants know about the researcher	Participants knew the reasons for doing the research
8	Interviewer characteristic	What characteristics were reported about the interviewer?	The interviewer has knowledge and

			expertise in the field of the study
Domain 2: Study design			
Theoretical framework			
9	Methodological orientation & theory	What methodological orientation underpinned the study was stated?	Yes
Participant selection			
10	Sampling	How participants were selected?	Purposive sampling
11	Method approach	How were participants approached?	Face to face
12	Sample size	How many participants were in the study?	32 participants
13	Non-participation	How many people refused to participate or dropped out? Reason?	3 due to not fit in criteria (postnatal mother)
Setting			
14	Setting of data collection	Where was the data collected?	Participants' workplace / health care setting / home
15	Presence of non-participation	Was anyone else present beside the participants and researchers?	Yes. They were accompanied by their children or spouse (postnatal mother)
16	Description of sample	What are the important characteristics of the sample?	Demographic data and experience

Data collection			
17	Interview guide	Were questions, prompts, guides provided by the author?	Yes
18	Repeat interview	Were repeat interviews carried out? If yes, how many?	No
19	Audio/visual recording	Did the researcher use audio or visual recording to collect data?	Yes. 1 digital voice recorder and 1 smart phone equipped with voice recorder were used for this study. Visual recording was use for virtual interview (webex)
20	Field notes	Were field notes made during and/or after the interview?	Yes
21	Duration	What was the duration of the interview?	Approximately an hour
22	Saturation	Was the data saturation discussed?	Yes
23	Transcript returned	Were the transcript returned to the participants for the comment and correction?	Participants acknowledge their information as true at the end of the interview.
Domain 3: Analysis & finding			
Data analysis			
24	Number of data coders	How many data coders coded the data	Triangulations Transcripts

			Reflective journal Field notes
25	Description of coding tree	Did the author provide a description of the coding trees?	Yes
26	Derivation of themes	Were themes identified in the advance or derived from the data?	The themes derived from the data
27	Software	What software, if applicable, was used to manage the data?	NVivo
28	Participants checking	Did participants provide feedback on the findings?	No
Reporting			
29	Quotations presented	Were participant's quotations presented to illustrate the themes/findings? Was each quotation identified?	Yes, pseudonyms were used in each quotation
30	Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31	Clarity of major	Were major themes clearly presented in the findings?	Yes
32	Clarity of minor themes	Is there a description of the diverse cases or discussion of minor themes?	Yes

APPENDIX K: ETHICAL APPROVAL



KULLIYAH OF NURSING

Our Reference : IIUM/313/G/14/3/1
Date : 18th December 2019 (21 Rabiulakhir 1441H)

Asst. Prof. Dr. Siti Roshaidai Mohd Arifin
Department of Professional Nursing Studies
Kulliyyah of Nursing

Dear Asst. Prof. Dr,

السلام عليكم ورحمة الله وبركاته

APPROVAL OF RESEARCH PROPOSAL ENTITLED "POSTNATAL MENTAL ILLNESS: TOWARDS DESIGNING AN ASSESSMENT TOOL FOR MALAYSIAN MOTHERS"

With reference to the above matter, we would like to inform you that your research proposal entitled "Postnatal Mental Illness: Towards Designing an Assessment Tool for Malaysian Mothers" had been approved by Kulliyyah of Nursing Postgraduate and Research Committee (KNPGRC) No. 8/2019 dated 18th December 2019.

Thus, you may proceed with the necessary actions with regards to your proposal.

Thank you. والسلام

Yours sincerely,

ASSOC. PROF. DR. SALIZAR MOHAMED LUDIN
Dean
Kulliyyah of Nursing

cc : Deputy Dean (Postgraduate & Research)
Kulliyyah of Nursing

: Filing



Office Address: Kulliyyah of Nursing, International Islamic University Malaysia, Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, 25200 Kuantan, Pahang
Tel: +609-570 7300 | E-mail: nursingadmin@iiu.edu.my | Website: <http://www.iiu.edu.my/kulliyyah/kon>

RESEARCH MANAGEMENT CENTRE

Our Ref. : IIUM/504/14/11/2/ IREC 2021-239
 Date : 16 August 2021

Asst. Prof. Dr. Siti Roshaidai Binti Mohd Arifin (Principal Investigator)
 Kuliyah of Nursing
 IIUM Kuantan Campus
 25200 Kuantan Pahang

Dear Asst. Prof. Dr.,

The IIUM Research Ethics Committee (IREC) has reviewed your study protocol as mentioned below:-

ID NO.	: IREC 2021-239
TITLE	: Postnatal Mental Illness: Towards Designing An Assessment Tool For Malaysian Mothers
REGISTRATION DATE	: 11 August 2021
CO-INVESTIGATOR	: Nil
STUDY SITE	: Peninsular Malaysia
SAMPLE SIZE	: Phase 1= 10 to 15 participants and phase 3= 300 participants
ETHICAL EXPIRY DATE	: 14 August 2022

The IIUM Research Ethics Committee (IREC) operates in accordance to the Declaration of Helsinki, International Conference of Harmonization Good Clinical Practice Guidelines (ICH-GCP), Malaysia Good Clinical Practice Guidelines and Council for International Organizations of Medical Sciences (CIOMS) International Ethical Guidelines

The following documents have been received and reviewed to the above study:-

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Study Proposal/Protocol: Version 1, dated 11 Aug 2021 2. Informed Consent Form (ICF) – <ol style="list-style-type: none"> i. Information Sheet (English) – Version 1 , dated 11 Aug 2021 ii. Consent Form (English) – Version 1, dated 11 Aug 2021 3. Interview – Version 1, dated 11 Aug 2021 4. Approval Letter from Kuliyah of Nursing, IIUM 5. Principal Investigator's CV | |
|--|--|

Decision by IIUM Research Ethics Committee (IREC):

(√) Approved
() Disapproved

Date of Approval: 14 August 2021

The investigator(s) are required to:

- a) submit the 'Continuing Review Form' 30 days before **EXPIRY DATE** to renew Ethical Approval.
- b) notify IREC of any change in protocol and obtaining further ethical approval as appropriate.
- c) report any adverse incident during the course of a study to IREC even if the incident is not directly related to the study.
- d) report to the IREC within 72 hours for all internal SAEs (occurring in IIUM PI site).
- e) report in a prompt manner if the information impacts the continued ethical acceptability of the trial for external SAEs (occurring in participants at other sites).
- f) provide information of minor protocol deviation in Progress Report or End Report whichever necessary.
- g) report any major protocol deviation occurs within 5 working days.
- h) submit Progress Report Form before the end of six (6) month given by IREC.
- i) complete and submit the End of Project Report Form to the IREC Secretariat's Office.
- j) All records and data subjects are **CONFIDENTIAL** and used only for the purposes of this study and all issues and procedures on data confidentiality must be observed.

Thank you.

PROF. DR. NASSER MUHAMMAD AMJAD
Chairman,
IIUM Research Ethics Committee (IREC)

Copy : *File –IREC 2021-239*

DISCLAIMER: The approval letter only covers the ethical aspect of your study only. Any other permission/approval to use any facilities, data or human resource should fall under applicant's responsibility.



JAWATANKUASA ETIKA & PENYELIDIKAN PERUBATAN
(MEDICAL RESEARCH & ETHICS COMMITTEE)
KEMENTERIAN KESIHATAN MALAYSIA
MINISTRY OF HEALTH MALAYSIA
Kompleks Institut Kesihatan Negara (NIH)
No.1, Jalan Setia Murni U13/52,
Seksyen U13 Bandar Setia Alam,
40170 Shah Alam, Selangor.



Tel.: +(6)03-33628888/ 33628205

Ref. : KKM/NIHSEC/P20-1138(11)

Date : **20-July-2020**

NUR LIYANA SHAHMI BINTI RUSLAN
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA (IIUM) - KUANTAN CAMPUS

Dear Dato'/ Dr/ Sir/ Madam,

LETTER OF ETHICAL APPROVAL:

NMRR-20-475-52538 (IIR)

POSTNATAL MENTAL HEALTH: TOWARDS DESIGNING AN ASSESSMENT TOOL FOR MALAYSIAN MOTHERS

This letter is made in reference to the matter above.

2. The Medical Research and Ethics Committee (MREC), Ministry of Health Malaysia (MOH) has provided ethical approval for this study. Please take note that all records and data are to be kept strictly **CONFIDENTIAL** and can only be used for the purpose of this study. All precautions are taken to maintain data confidentiality. Permission from the District Health Officer / Hospital Administrator/ Hospital Director and all relevant heads of departments /units where the study will be carried out must be obtained prior to the study. You are required to follow and comply with their decision and all other relevant regulations including the Access to the Biological and Benefit Sharing Act 2017.

3. The investigators and sites involved in this study are:

Hospital Sultanah Nur Zahirah, Kuala Terengganu

Nur Liyana Shahmi Binti Ruslan (Principal / Coordinating Investigator)
Dr. Khairi Che Mat
Dr. Rohayah Husain
Dr. Tuan Sharipah Tuan Hadi

Klinik Kesihatan Seri Medang

Nur Liyana Shahmi Binti Ruslan (Principal / Coordinating Investigator)

Klinik Kesihatan Seberang Takir

Nur Liyana Shahmi Binti Ruslan (Principal / Coordinating Investigator)
Dr. Rohayah Husain
Dr. Siti Norazlina Binti Juhari

Klinik Kesihatan Jerleh

Nur Liyana Shahmi Binti Ruslan (Principal / Coordinating Investigator)

Klinik Kesihatan Batu Rakit

Nur Liyana Shahmi Binti Ruslan (Principal / Coordinating Investigator)
Dr. Rohayah Husain
Dr. Siti Norazlina Binti Juhari

.../4-

Klinik Kesihatan Bukit Tunggul

Nur Liyana Shahmi Binti Ruslan (Principal / Coordinating Investigator)
Dr. Rohayah Husain
Dr. Siti Norazlina Binti Juhari

Klinik Kesihatan Hiliran

Nur Liyana Shahmi Binti Ruslan (Principal / Coordinating Investigator)
Dr. Rohayah Husain
Dr. Siti Norazlina Binti Juhari

Hospital Ampang

Dr. Fathima Begum Bt Syed Mohideen
Dr. Khadijah Hasanah Abang Abdullah

Hospital Raja Permaisuri Bainun, Ipoh

Dr. Asma Perveen Asma
Dr. Nurul Ain Hidayah Binti Abas

Hospital Slim River

Dr. Asma Perveen Asma
Dr. Nurul Ain Hidayah Binti Abas

Hospital Tengku Ampuan Afzan, Kuantan

Siti Aishah Binti Daud
Siti Roshaidai Binti Mohd Arifin

Klinik Ibu Dan Anak Cheras Baru

Dr. Fathima Begum Bt Syed Mohideen
Dr. Khadijah Hasanah Abang Abdullah

Klinik Kesihatan Ampang

Dr. Fathima Begum Bt Syed Mohideen
Dr. Khadijah Hasanah Abang Abdullah

Klinik Kesihatan Balok

Dr. Karimah Hanim Binti Abd. Aziz
Siti Aishah Binti Daud
Siti Roshaidai Binti Mohd Arifin

Klinik Kesihatan Beserah

Dr. Karimah Hanim Binti Abd. Aziz
Siti Aishah Binti Daud
Siti Roshaidai Binti Mohd Arifin

Klinik Kesihatan Bidor

Dr. Asma Perveen Asma
Dr. Nurul Ain Hidayah Binti Abas

Klinik Kesihatan Indera Mahkota

Dr. Karimah Hanim Binti Abd. Aziz
Siti Aishah Binti Daud
Siti Roshaidai Binti Mohd Arifin

Klinik Kesihatan Nilai

Dr. Fathima Begum Bt Syed Mohideen
Dr. Khadijah Hasanah Abang Abdullah

Ref : KKM/NIHSEC/P20-1138(11)

Klinik Kesihatan Jaya Gading

Dr. Karimah Hanim Binti Abd. Aziz
Siti Aishah Binti Daud
Siti Roshaidai Binti Mohd Arifin

Klinik Kesihatan Kuarters KLIA

Dr. Fathima Begum Bt Syed Mohideen
Dr. Khadijah Hasanah Abang Abdullah

Klinik Kesihatan Rawang

Dr. Fathima Begum Bt Syed Mohideen
Dr. Khadijah Hasanah Abang Abdullah

Klinik Kesihatan Slim River

Dr. Asma Perveen Asma
Dr. Nurul Ain Hidayah Binti Abas

Klinik Kesihatan Tanjung Malim

Dr. Asma Perveen Asma
Dr. Nurul Ain Hidayah Binti Abas

4. The following study documents have been received and reviewed with reference to the above study:

Documents received and reviewed with reference to the above study:

1. Cover letter to MREC (Version 2, dated 16-07-2020)
2. Declaration of Conflict of Interest (COI) (Version 2, dated 17-07-2020)
3. Protocol (Version 5, dated 16-07-2020)
4. English: Patient Information Sheet/ Informed Consent Form (Version 3, dated 08-04-2020)
5. Malay: Patient Information Sheet/ Informed Consent Form (Version 3, dated 08-04-2020)
6. Questionnaire (Version 3, dated 08-04-2020)
7. Follow-up Review Report (Version 1, dated 16-07-2020)
8. IA-HOD-IA, CV and GCP Certification of:
 - Dr. Khairi Che Mat
 - Dr. Rohayah Husain
 - Dr. Karimah Hanim Binti Abd. Aziz
9. IA-HOD-IA and CV of:
 - Nur Liyana Shahmi Binti Ruslan
 - Dr. Siti Norazlina Binti Juhari
 - Dr. Fathima Begum Bt Syed Mohideen
 - Dr. Khadijah Hasanah Abang Abdullah
 - Dr. Asma Perveen Asma
 - Dr. Nurul Ain Hidayah Binti Abas
 - Siti Aishah Binti Daud
 - Siti Roshaidai Binti Mohd Arifin
10. CV and GCP Certification of:
 - Dr. Tuan Sharipah Tuan Hadi

5. Please note that the approval is valid until **19-July-2021**. The following are to be reported upon receiving ethical approval. Required forms can be obtained from the National Medical Research Registry (NMRR) website.

- i. **Continuing Review Form** has to be submitted to MREC within 2 months (60 days) prior to the expiry of ethical approval.
- ii. **Study Final Report** upon study completion to the MREC.

Ref : KKM/NIHSEC/P20-1138(11)

- iii. Ethical approval is required in the case of **amendments/ changes** to the **study documents/ study sites/ study team**. MREC reserves the right to withdraw ethical approval if changes to study documents are not completely declared.
 - iv. **Applicable for Clinical interventional Studies only:** Report occurrences of **all Serious Adverse Events (SAEs), Suspected Unexpected Serious Adverse Reaction (SUSARs) and Protocol Deviation/Violation** at all MREC approved sites to MREC. SAEs are to be reported within 15 calendar days from awareness of event by investigator. Initial report of SUSARs are to be reported as soon as possible but not later than 7 calendar days from awareness of event by investigator, followed by a complete report within 8 additional calendar days.
6. There will be **5 subjects/ patients/ respondents** targeted to be enrolled in this study within Malaysia.
7. Please take note that the reference number of this letter must be stated in all future correspondence related to this study to facilitate the administrative processes.

Project Sites:

HOSPITAL AMPANG
HOSPITAL RAJA PERMAISURI BAINUN, IPOH
HOSPITAL SLIM RIVER
HOSPITAL SULTANAH NUR ZAHIRAH, KUALA TERENGGANU
HOSPITAL TENGKU AMPUAN AFZAN, KUANTAN
KLINIK IBU DAN ANAK CHERAS BARU
KLINIK KESIHATAN AMPANG
KLINIK KESIHATAN BALOK
KLINIK KESIHATAN BATU RAKIT
KLINIK KESIHATAN BESERAH
KLINIK KESIHATAN BIDOR
KLINIK KESIHATAN BUKIT TUNGGAL
KLINIK KESIHATAN HILIRAN
KLINIK KESIHATAN INDERA MAHKOTA
KLINIK KESIHATAN JAYA GADING
KLINIK KESIHATAN JERTEH
KLINIK KESIHATAN KUARTERS KLIA
KLINIK KESIHATAN NILAI
KLINIK KESIHATAN RAWANG
KLINIK KESIHATAN SEBERANG TAKIR
KLINIK KESIHATAN SERI MEDANG
KLINIK KESIHATAN SLIM RIVER
KLINIK KESIHATAN TANJUNG MALIM

Decision by Medical Research & Ethics Committee:

(☒) Approved
(☐) Disapproved

Date of Approval : **20-July-2020**


.....
DR. HJH SALINA BINTI ABDUL AZIZ
Chairperson
Medical Research & Ethics Committee
Ministry of Health Malaysia
(MMC No: 27117)

CM\MREC_Share\Approval 2020\Expedited by Primary Reviewer\July 2020\52538



HOSPITAL AMPANG
JALAN MEWAH UTARA
PANDAN MEWAH
68000 AMPANG
SELANGOR DARUL EHSAN



Telefon : 03-42896000
Fax : 03-42954666 (Pengurusan)
03-42957026 (Pej. Pakar)

Ruj.Tuan : NMRR-20-475-
52538/MREC/PMH(8)
Ruj.Kami : () dlm HA/184/01 Jilid 9
Tarikh : 19 Ogos 2020

Nur Liyana Shahmi Binti Ruslan,
Kuliyah of Nursing
Universiti Islam Antarabangsa Malaysia (UAIM)

Melalui,

Pengarah Hospital Ampang,

Ybhg Tuan/ Puan,

DR. GHAFIL ABD MANAF
No. Pend. Penuh MPM: 28965
Pegawai Hospital Ampang
Selangor Darul Ehsan.

PERMOHONAN KEBENARAN PENGGUNAAN FASILITI HOSPITAL AMPANG SELANGOR UNTUK MENJALANKAN PENYELIDIKAN

Dengan hormatnya saya merujuk kepada surat puan bertarikh 06 Ogos 2020.

2. Pihak Hospital Ampang mengambil maklum permohonan puan menjalankan kajian bertajuk, **"NMRR-20-475-52538 – Postnatal Mental Health : Towards Designing An Assessment Tool For Malaysian Mothers"**.

3. Pihak kami juga mengambil maklum bahawa kajian tersebut telahpun didaftarkan secara on-line di *National Medical Research Register* dan memperoleh kelulusan dari Jawatankuasa Etika dan Penyelidikan Perubatan Kementerian Kesihatan Malaysia. Sehubungan dengan itu pihak Hospital Ampang tiada halangan untuk tujuan tersebut di atas.

4. Segala rekod dan data-data yang diperolehi adalah **SULIT** dan hanya digunakan untuk tujuan kajian dan semua isu serta prosedur mengenai **data confidentiality** mesti dipatuhi. Semua penerbitan, diseminasi atau sebarang hasil penyelidikan samada melalui penulisan, pengiklanan, pembentangan atau untuk ke media perlu mendapat kelulusan Ketua Pengarah Kesihatan, Kementerian Kesihatan Malaysia.

5. Pihak puan boleh menghubungi **Dr Khadijah Hasanah Abang Abdullah, Pakar Psikiatri Hospital Ampang dan Dr Noorazizah Arshad, Pakar O&G** untuk menentukan tarikh yang sesuai bagi memulakan kajian tersebut.

Sekian, terima kasih.

Yang benar,

DR JEROME TAN TSEN CHUEN
Pakar Perubatan Hematologi UD54
MRCP (UK) M-MED (Int. Med, S'pore)
MPBS (MAL)
No Pendaftaran Penuh : MPM38293
Hospital Ampang, Selangor

(Dr JEROME TAN TSEN CHUEN)
Ketua Unit Pusat Penyelidikan Klinikal (CRC)
Hospital Ampang
b.p Pengarah Hospital

sk:

1. Dr Khamisah Binti Alias, Ketua Jabatan Psikiatri dan Kesihatan Mental, Hospital Ampang
2. Dr Carol Lim kar Koong, Ketua Jabatan Obstetrik & Ginekologi, Hospital Ampang



JABATAN KESIHATAN NEGERI TERENGGANU
(KEMENTERIAN KESIHATAN MALAYSIA)
TINGKAT 5, WISMA PERSEKUTUAN
JALAN SULTAN ISMAIL
20920 KUALA TERENGGANU
TERENGGANU DARUL IMAN

Telefon : 09-6222866 (Wisma)
/ 09-6226028 (KTBC)
Faks : 09-6235001 / 09-6248367
/ 09-6221385 (KTBC)
<http://jknterengganu.moh.gov.my>

Ruj.Kami.JKN.TR:701-03-12 (21)

Tarikh : 27 Oktober 2020

Nur Liyana Shahmi Binti Ruslan
Kuliyah of Nursing (KON)
Universiti Islam Antarabangsa Malaysia (UIAM)

Tuan,

**PERMOHONAN KEBENARAN MENJALANKAN PENYELIDIKAN DI KLINIK-
KLINIK KESIHATAN DAERAH KUALA TERENGGANU, DAERAH KUALA NERUS
DAN DAERAH BESUT**

Saya dengan hormatnya merujuk kepada perkara di atas dan rujukan emel bertarikh 3 September 2020 adalah berkaitan.

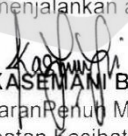
2. Untuk makluman, pihak kami tiada halangan untuk membenarkan penyelidikan tersebut dijalankan di klinik – klinik kesihatan di tiga (3) daerah berkaitan tetapi dengan memenuhi syarat-syarat yang telah ditetapkan oleh Kementerian Kesihatan Malaysia mengikut garis panduan yang sedang berkuatkuasa.

3. Sehubungan dengan itu, bersama-sama ini dikembalikan maklumbalas permohonan kebenaran penggunaan Klinik Kesihatan daripada pejabat kesihatan daerah terlibat untuk menjalankan penyelidikan yang telah ditandatangani untuk tindakan dan perhatian pihak tuan selanjutnya.

Sekian terima kasih.

**"BERKHIDMAT UNTUK NEGARA"
"PENYAYANG, PROFESIONALISME DAN KERJA BERPASUKAN
ADALAH BUDAYA KERJA KITA"**

Saya yang menjalankan amanah,


(DR. HJH. KASEH BINTI EMBONG)
No. Pendaftaran Perubatan MMC: 030297
Pakar Perubatan Kesihatan Awam (NSR : 127675)
Timbalan Pengarah Kesihatan Negeri (Kesihatan Awam)
b.p. Pengarah Kesihatan Negeri
Terengganu
emel: drkase@moh.gov.my
Kuala Terengganu 11100

"Sila catatkan rujukan surat ini apabila menjawab"



s.k Pegawai Kesihatan Daerah
Kuala Terengganu / Kuala Nerus / Besut

Ketua Jabatan
Pusat Penyelidikan Klinikal Negeri
Hospital Sultanah Nur Zahirah



**MAKLUMBALAS PERMOHONAN KEBENARAN PENGGUNAAN FASILITI DI
BAWAH JABATAN KESIHATAN NEGERI TERENGGANU UNTUK
MENJALANKAN PENYELIDIKAN**

Tajuk Penyelidikan : Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers

Nama dan Jabatan Ketua Penyelidik : Nur Liyana Shahmi Binti Ruslan, Kuliyah of Nursing, UIAM

Pihak hospital/institusi dengan ini membuat keputusan seperti berikut : -



Membenarkan projek penyelidikan dijalankan



Tidak membenarkan projek penyelidikan dijalankan

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah


DR. KHAIRI CHE MAT
(No. Pendaftaran Penuh MMC: 2801)
Pakar Perubatan Kesihatan Awam
Pegawai Kesihatan Daerah
Kuala Terengganu


Pegawai Jabatan Kesihatan
Negeri Terengganu
DR. NOR AZIMI BINTI YUNUS
(No. Pendaftaran Penuh MMC: 29844)
Pegawai Kesihatan Negeri
Jabatan Kesihatan Negeri Terengganu

S. K.
Pejabat Kesihatan Daerah Kuala Terengganu
Pejabat Kesihatan Daerah Kuala Nerus
Pejabat Kesihatan Daerah Besut
Klinik Kesihatan Batu Rakit
Klinik Kesihatan Bukit Tunggul
Klinik Kesihatan Hiliran
Klinik Kesihatan Seberang Takir
Klinik Kesihatan Jerleh
Klinik Kesihatan Seri Medang
Dr. Khairi Che Mat
Dr. Rohayah Husain

26/10/2021

Appendix 5 (b)

MAKLUMBALAS PERMOHONAN KEBENARAN PENGGUNAAN FASILITI DI
BAWAH JABATAN KESIHATAN NEGERI TERENGGANU UNTUK
MENJALANKAN PENYELIDIKAN

Tajuk Penyelidikan : Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers

Nama dan Jabatan Ketua Penyelidik : Nur Liyana Shahmi Binti Ruslan, Kuliyah of Nursing, UIAM

Pihak hospital/institusi dengan ini membuat keputusan seperti berikut :-



Membenarkan projek penyelidikan dijalankan



Tidak membenarkan projek penyelidikan dijalankan

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah


DR. MOHD. KHAIRUL ANUAR BIN ROSELAN
(No. Pendaftaran Penuh MPM: 49303)

Pegawai Kesihatan Daerah
Pejabat Kesihatan Daerah Besut,
Terengganu.

S.K.

Pejabat Kesihatan Daerah Kuala Terengganu

Pejabat Kesihatan Daerah Kuala Nerus

Pejabat Kesihatan Daerah Besut

Klinik Kesihatan Batu Rakit

Klinik Kesihatan Bukit Tunggul

Klinik Kesihatan Hiliran

Klinik Kesihatan Seberang Takir

Klinik Kesihatan Jerleh

Klinik Kesihatan Seri Medang

Dr. Khairi Che Mat

Dr. Rohayah Husain


Pengarah Jabatan Kesihatan
Negeri Terengganu

DR. NOR AZIMI BINTI YUNUS
(No. Pendaftaran Penuh MMC: 29834)
Pegawai Kesihatan Negeri
Jabatan Kesihatan Negeri Terengganu

26/10/2020

**MAKLUMBALAS PERMOHONAN KEBENARAN PENGGUNAAN FASILITI DI
BAWAH JABATAN KESIHATAN NEGERI TERENGGANU UNTUK
MENJALANKAN PENYELIDIKAN**

Tajuk Penyelidikan : Postnatal Mental Health: Towards Designing an Assessment Tool for Malaysian Mothers

Nama dan Jabatan Ketua Penyelidik : Nur Liyana Shahmi Binti Ruslan, Kuliyah of Nursing, UIAM

Pihak hospital/institusi dengan ini membuat keputusan seperti berikut : -



Membenarkan projek penyelidikan dijalankan



Tidak membenarkan projek penyelidikan dijalankan

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah

DR. MUHAMMAD AMANUS BIN UJANG
No. Pendaftaran Penuh MMC: 48585
Pegawai Kesihatan Daerah
Jabatan Kesihatan Daerah
Kuala Nerus

Pengarah Jabatan Kesihatan
Negeri Terengganu

DR. NOR AZIMI BINTI YUNUS
(No. Pendaftaran Penuh MMC: 29884)
Pegarah Kesihatan Negeri
Jabatan Kesihatan Negeri Terengganu

S.K.
Pejabat Kesihatan Daerah Kuala Terengganu
Pejabat Kesihatan Daerah Kuala Nerus
Pejabat Kesihatan Daerah Besut
Klinik Kesihatan Batu Rakit
Klinik Kesihatan Bukit Tunggal
Klinik Kesihatan Hiliran
Klinik Kesihatan Seberang Takir
Klinik Kesihatan Jerteh
Klinik Kesihatan Seri Medang
Dr. Khairi Che Mat
Dr. Rohayah Husain



JABATAN KESIHATAN NEGERI PAHANG

Jalan IM4, Bandar Indera Mahkota
25582 Kuantan
Pahang Darul Makmur

Pengarah : 09 570 7799 Pengurusan : 09 570 7798
Perubatan : 09 570 7797 Pergigian : 09 570 7796
Farmasi : 09 570 7795/92 BKMM : 09 570 7794
Kesihatan Awam : 09 570 7793



Tel : 09 5707 999
Laman Web : <http://jknpahang.moh.gov.my>

Ruj. Kami: Bil. (29) dlm. JKN.PHG.(KA) 1/81 Jld.2

Tarikh: 3 September 2020

Nur Liyana Shahmi binti Ruslan
Penyelidik Utama
Kuliyah Kejururawatan
Universiti Islam Antarabangsa Malaysia
Jalan Sultan Haji Ahmad Shah, Bandar Indera Mahkota
25200 Kuantan Pahang

Puan,

PERMOHONAN MENJALANKAN KAJIAN POSTNATAL MENTAL HEALTH: TOWARDS DESIGNING AN ASSESSMENT TOOLS OF MALAYSIAN MOTHERS DI FASILITI JABATAN KESIHATAN NEGERI PAHANG

Dengan hormatnya merujuk kepada perkara di atas berhubung perkara di atas.

2. Setelah meneliti permohonan tuan, pihak Jabatan ini tiada halangan kepada Puan untuk menjalankan kajian bertajuk **"Postnatal Mental Health: Towards Designing an Assessment Tools of Malaysian Mothers"** - NMRR-20-475-52538 di daerah Kuantan yang melibatkan Klinik Kesihatan Balok, Beserah, Indera Mahkota dan Jaya Gading.

3. Sehubungan dengan itu, Puan perlulah mematuhi peraturan-peraturan yang telah ditetapkan oleh Kerajaan dalam **Standard Operating Procedure (SOP)** tertentu bagi mengelakkan sebarang jangkitan serta penularan wabak. Puan juga dikehendaki melapor diri kepada Pegawai di daerah yang terlibat dan mematuhi peraturan sepanjang berada di fasiliti berkenaan.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(DATO' DR. MOHAMED SAPIEN BIN MOHAMED, DIMP., SMP.)

No.Pendaftaran Penuh MPM: 27276

Pakar Perunding Perubatan Kesihatan Awam

Timbalan Pengarah Kesihatan Negeri (Kesihatan Awam)

b.p Pengarah Kesihatan Negeri Pahang

☎ 09-5707900

✉ drhjsapien26@moh.gov.my

s.k.: 1. Pejabat Kesihatan Daerah Kuantan,
2. Unit Latihan Induk, JKN Pahang.

Dr.HY/..nma

"PENYAYANG, BEKERJA BERPASUKAN DAN PROFESIONALISME ADALAH BUDAYA KERJA KITA"



MS ISO 9001:2008 REG. NO. AK 2557

**MAKLUMBALAS PERMOHONAN KEBENARAN PENGGUNAAN KLINIK KESIHATAN
DI BAWAH JABATAN KESIHATAN NEGERI PAHANG UNTUK MENJALANKAN PENYELIDIKAN**

Tajik Penyelidikan:

"Postnatal Mental Health: Towards Designing an Assessment Tools of Malaysian Mothers"

Nama dan Jabatan Ketua Penyelidik:

Nur Liyana Shahmi binti Ruslan
Penyelidik Utama
Kuliyah Kejururawatan
Universiti Islam Antarabangsa Malaysia
Jalan Sultan Haji Ahmad Shah, Bandar Indera Mahkota
25200 Kuantan Pahang

Melalui:

Asst. Prof. Dr. Lee Siew Pien,
Timbalan dekan (Pascasiswazah & Penyelidikan),
Kuliyah Kejururawatan,
Universiti Islam Antarabangsa Malaysia,
Kampus Indera Mahkota, 25200 Kuantan, Pahang.

Pihak Jabatan dengan ini membuat keputusan seperti berikut:-



Membenarkan projek penyelidikan dijalankan



Tidak membenarkan projek penyelidikan dijalankan

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,

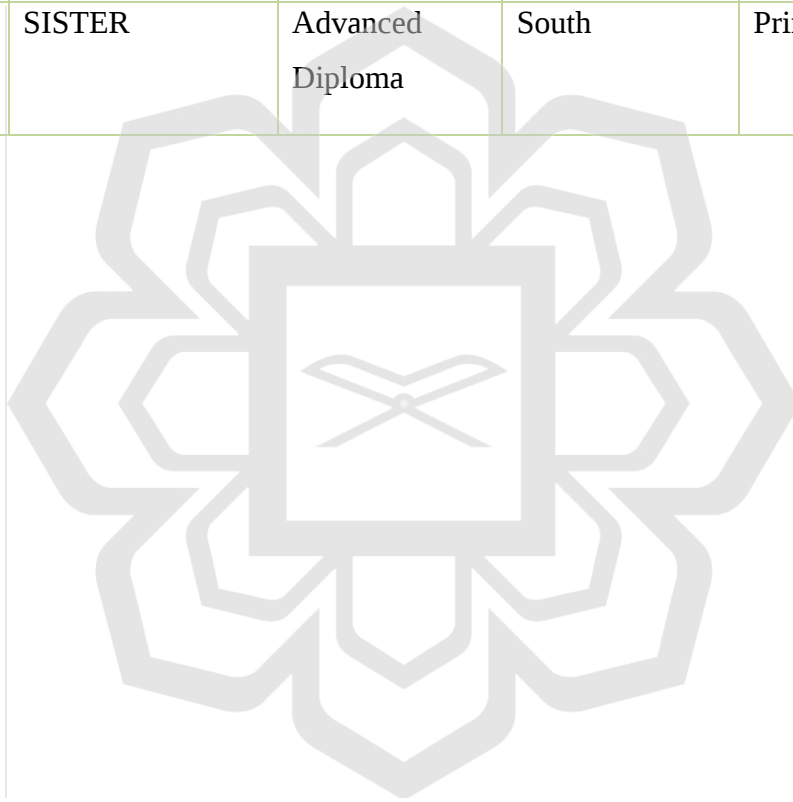
DATO' DR MOHAMED SAPIAN BIN MOHAMED
Pakar Perunding Perubatan Kesihatan Awam
Timbalan Kesihatan Negeri (Kesihatan Awam)
b.p.: Pengarah Kesihatan Negeri Pahang

APPENDIX L: CHARACTERISTICS OF HEALTHCARE PRACTITIONERS

ID	PROFESSION	EDUCATION	PENINSULAR REGION	WORK SETTING	EXP YEARS
HCP 1	MO	Bachelor's Degree	East	Primary	9
HCP 2	PSYCHIATRIST	Master's Degree	East	Tertiary	13
HCP 3	MO	Bachelor's Degree	East	Primary	10
HCP 4	FMS	Master's Degree	East	Primary	28
HCP 5	FMS	Master's Degree	East	Primary	18
HCP 6	MO	Bachelor's Degree	East	Tertiary	5
HCP 7	PSYCHIATRIST	Master's Degree	East	Tertiary	18
HCP 8	O&G	Master's Degree	East	Tertiary	11
HCP 9	MATRON	Advanced Diploma	East	Primary	22
HCP 10	MATRON	Advanced Diploma	East	Primary	26

HCP 11	MATRON	Advanced Diploma	East	Tertiary	25
HCP 12	SISTER	Advanced Diploma	East	Tertiary	25
HCP 13	STAFF NURSE	Diploma	East	Primary	16
HCP 14	STAFF NURSE	Diploma	East	Tertiary	23
HCP 15	STAFF NURSE	Advanced Diploma	East	Tertiary	12
HCP 16	PSYCHIATRIST	Master's Degree	East	Tertiary	12
HCP 17	PSYCHIATRIST	Master's Degree	East	Tertiary	12
HCP 18	CLINICAL PSYCHOLOGIST	Master's Degree	North	Tertiary	13
HCP 19	FMS	Master's Degree	North	Primary	25
HCP 20	O&G	Master's Degree	North	Tertiary	14
HCP 21	PSYCHIATRIST	Master's Degree	North	Tertiary	10
HCP 22	PSYCHIATRIST	Master's Degree	Central	Tertiary	20
HCP 23	O&G	Master's Degree	Central	Tertiary	9

HCP 24	O&G	Master's Degree	Central	Tertiary	16
HCP 25	MO	Bachelor's Degree	South	Primary	4
HCP 26	FMS	Master's Degree	South	Primary	11
HCP 27	SISTER	Advanced Diploma	South	Primary	21
HCP 28	SISTER	Advanced Diploma	South	Primary	24



APPENDIX M: CHARACTERISTICS OF POSTNATAL MOTHER

ID	PSEUDONYM	EDUCATION	PENINSULAR REGION	AGE	RACE
PM 1	Ayu	Degree	East	28	Malay
PM 2	Aini	Diploma	East	24	Malay
PM 3	Himalata	UPSR	North	28	Indian
PM 4	Joanne	SPM	North	33	Chinese
PM 5	Zurina	SPM	Central	28	Bajau
PM 6	Farah	PMR	South	20	Malay

