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REVIEW

Assessment tools to measure postnatal mental illness: A 10-year scoping review

Nur Liyana Shahmi Ruslan, Siti Roshaidai Mohd Arifin, Khadijah Hasanah Abang Abdullah, Nurul Ain Hidayah Abas, Rohayah Husain, Karimah Hanim Abd Aziz, Ramli Musa, Fathima Begum Syed Mohideen, Asma Perveen, Khairi Che Mat

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Authors:

Siti Roshaidai Mohd Arifin
(Corresponding author)
RM, RN, BHsc, MNSc, PhD
Department of Special Care Nursing
Kulliyyah of Nursing, International Islamic University Malaysia, Pahang Malaysia
Email: roshaidai@iium.edu.my

Nur Liyana Shahmi Ruslan
RN, BNurs
Hospital Development Centre
UniSZA, Kampus Gong Badak
Kuala Nerus, Terengganu, Malaysia

Khadijah Hasanah Abang Abdullah
MBChB, DrPsych
Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Bandar Baru Nilai, Negeri Sembilan, Malaysia

Nurul Ain Hidayah Abas
BSc, MS, Dr Rer Nat
Department of Psychology and Counselling, Faculty of Human Development, Universiti Pendidikan Sultan Idris, Tanjung Malim, Perak Malaysia

Rohayah Husain
MD, MMed (Psych)
Psychological Medicine Unit, Faculty of Medicine, Universiti Sultan Zainal Abidin, Kuala Terengganu Terengganu, Malaysia

Abstract

Introduction: The use of assessment tools to measure postnatal mental illness is essential in healthcare settings. However, variations in the types of tools and their reliability in a particular population lead to under-recognition of mental health status in postnatal mothers. The aim of this review is to evaluate the most recent 10 year of research on the validity and reliability of postnatal mental illness assessment tools

Methods: A literature search of studies from online databases PubMed, Scopus, and Science Direct was conducted.

Results: A total of 59 studies were selected for this review. Several studies utilised multiple assessment tools, and a total of 96 assessment tools were identified and classified into six domains: postnatal blues, postnatal stress, postnatal anxiety, postnatal depression, postnatal psychosis, and postnatal psychological disorder. In this review, EPDS was the most common tool used to identify postnatal depression and anxiety while DASS 21 was the most common tool used to identify postnatal psychological disorder. There is a wide range in preponderance of evidence for the reliability of each assessment tool and there were inconsistencies in assessing the validity of the assessment tools.

Conclusion: This review provides information regarding some of the main assessment tools currently available to measure postnatal mental illnesses. There were no standardised tools that were used in a particular setting. The results may differ in different population because there are differences in not only languages and dialects, but also cultural and racial backgrounds, which greatly influences their perception and interpretation of postnatal mental illness.

Introduction

The postnatal period is one of the most transformative and critical times in a woman's life. A woman experiences not only physical changes, but also psychological, emotional, and social changes. Although childbirth is viewed as a joyous event filled with positive emotions, it may also cause postnatal mental illness due to the transition and adaptation of new demands and responsibilities.[1–3] The World Health Organization (WHO)[4] described postnatal mental health as 'a state of well-being in which the individual realises 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'. Therefore, postnatal mental illness 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 the postnatal period. This may include postnatal blues, stress, anxiety, depression, and psychosis.

Postnatal blues can be defined as a brief period of mild mood disturbance after childbirth. It is the most frequent mood disorder in postnatal mothers. Postnatal blues is considered a common reaction due to hormonal changes and gradually diminishes within 2 weeks of childbirth.[5] Postnatal stress is defined as a constraining force induced by postnatal stressors. The stressors can be social or non-social (physical) and occur within 6 weeks post-delivery.[6] Postnatal stress is characterised by tension, chronic arousal, and a degree of impaired functioning. Postnatal anxiety is characterised by feelings of tension, worried thoughts, and physical changes.[5] Postnatal depression is the most common mental health problem in postnatal mothers and is characterised by feeling of sadness, low mood, tearfulness, lack of enjoyment,

Karimah Hanim Abd Aziz
MD, MPH, DrPH
Department of Community Medicine Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan Pahang, Malaysia

Ramli Musa
MD, M.Med (Psychiatry)
Department of Psychiatry, Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan Pahang, Malaysia

Fathima Begum Syed Mohideen
MD, MMed (Family Medicine)
Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Bandar Baru Nilai, Negeri Sembilan, Malaysia

Asma Perveen
MCPD, PhD
Department of Psychology and Counselling, Faculty of Human Development, Universiti Pendidikan Sultan Idris, Tanjung Malim, Perak Malaysia

Khairi Che Mat
MD, MMed (Psych)
Psychological Medicine Unit, Faculty of Medicine, Universiti Sultan Zainal Abidin, Kuala Terengganu Terengganu, Malaysia

lack of energy, loss of interest or pleasure, and impaired concentration, which are also referred to as 'depressive symptoms', during the postnatal period.[7] Postnatal psychosis is characterised by hallucinations, delusions, and having extreme difficulty in responding emotionally to the infant; it is considered the most severe form of postnatal mental illness.[8]

Studies have shown that availability of assessment tools increases healthcare providers' (HCPs) confidence in dealing with perinatal mental illness, whereas the absence of such tools was shown to limit the management of these illnesses.[9,10] Use of the assessment tools to detect postnatal mental illnesses in the primary healthcare setting is essential; however, most of HCPs have neither the time nor training to administer complex diagnostic interviews to all individuals at risk of mental illnesses.[11] Nevertheless, these assessment tools must be tested for their reliability and validity before being implemented in a particular population because cultural differences influence expression of mental distress, which includes physicalising symptoms. These differences may lead to under-recognition or misinterpretation of mental illnesses.[11,12] The aim of this review is to identify the validity and reliability of available assessment tools used in prior studies to measure postnatal mental illnesses. In this review, postnatal mental illness refers to postnatal blues, postnatal stress, postnatal anxiety, postnatal depression, and postnatal psychosis.

Methods

Scoping review

A systematic scoping review was conducted to gather evidence from the literature on the availability, validity, and reliability of postnatal mental illness assessment tools over the last 10 years. This method was selected to outline the different types of evidence available in the area of interest and to fill in the gaps for further research. This review was guided by the framework proposed by Arksey and O'Malley[13] and the Joanna Briggs Institute (JBI),[14] which recommend to follow five steps: (i) identifying the research question; (ii) identifying relevant studies; (iii) study selection; (iv) charting the data; and (v) collating, summarising, and reporting the results. Quality appraisal of the studies was not conducted as the review aimed to explore the general scope of the research conducted in this field.

Step 1: Identifying the research question

The main research question was 'What are the assessment tools used to assess postnatal mental illness?' The research sub-questions were: (i) 'What are the common assessment tools used to assess postnatal mental illness?' (ii) 'What types of postnatal mental illness were assessed?' (iii) 'Where were these assessment tool used?' and (iv) 'What is the reliability and validity of the assessment tools?'

Step 2: Identifying relevant studies

PubMed, Scopus, and Science Direct online database were searched from the years 2010 to 2020 to reflect the most up-to-date literature. The keywords were used in various combinations with AND and/or OR and the following MESH terms: 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 found through the electronic search were inspected to ensure that only relevant articles were included in the scoping review

Step 3: Study selection

This step aimed to identify the studies that would be included in the scoping review. The research team agreed on the eligibility criteria.

Inclusion criteria

The type of publication was journal articles. The language of publication was restricted to English or Malay. The articles reported psychometric properties of reliability or validity of the assessment tools used for any postnatal mental illnesses or postnatal psychological disorders in postnatal mothers within the first year of childbirth.

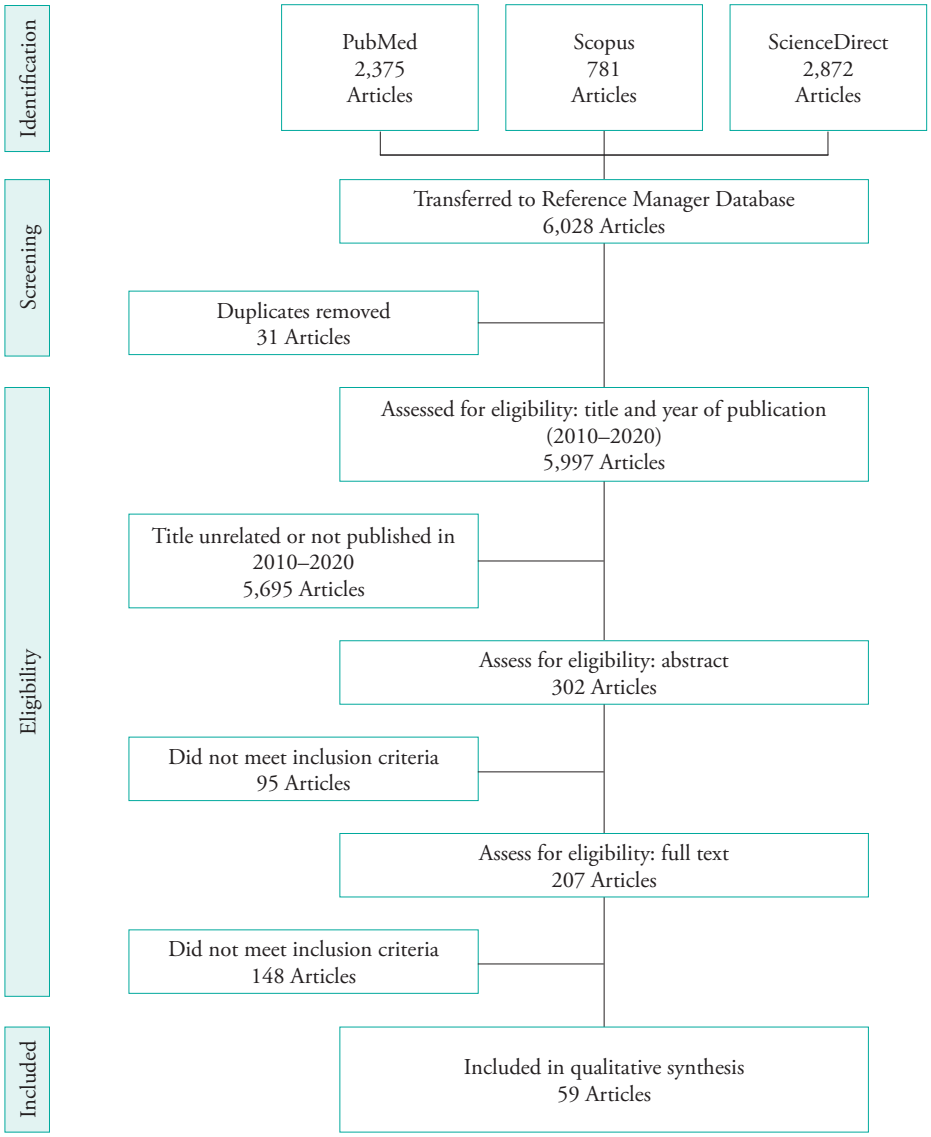
Exclusion criteria

Articles were excluded if they were review papers or if postnatal women were not the focus group of the study.

The application of further eligibility criteria ensured that the content of the included studies was relevant to the aim of the study

and research questions. All articles found in the databases were transferred to the reference manager database and duplicates were removed. The titles and abstracts were screened by a member of the team. The articles that did not meet the eligibility criteria were excluded and the full articles that fulfilled the eligibility criteria were retrieved. A sample of the retrieved articles was screened by another team member to ensure consistent application of the eligibility criteria. The results were reviewed by two researchers (primary and secondary researcher). Disagreements were discussed until a consensus was reached or by arbitration by a third researcher, if required. The article was included with a minimum agreement of at least 50% among the research team. The process of study selection was reported using a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart.

Figure 1. Flow diagram of the search strategy for assessment tools used for postnatal mental illness.



Step 4: Charting the data

A data charting form was used to record relevant information from each of the included studies and the extracted data were entered into the database programme Excel as follows:

- Author(s), title, year of publication, country of origin
- Sample size, assessment time (week of postnatal period), study methods
- Types and characteristics of assessment tools used to assess postnatal mental illness
- Reliability and validity of the assessment tools

The charting form was tested by two members on a sample from the included studies to ensure that the coding categories were applied consistently. If necessary, the categories were modified, and the charting form was revised accordingly. Questions that arose during this step were discussed by the team and disagreements were resolved through team consultation. The same two members oversaw independent charting of the data from each included study using the coding categories agreed on by the research team. Discrepancies in the extracted data were discussed between the two reviewers until a consensus was reached or by arbitration by a third researcher, if required.

Step 5: Collating, summarising, and reporting the results

A report was produced to summarise the extracted data, which provided information on the types of postnatal mental illnesses assessed by the tools, types of assessment tools used, location and language used in the assessment tools, and their reliability and validity. These results were described in relation to the research question and in the context of the overall study purpose. Gap identification highlighted the most common type of postnatal mental illness that was assessed and the countries with the most research on psychometric properties of postnatal mental illness assessment tools.

Results

A total of 6,028 articles were identified, 5,695 were removed as the titles were unrelated or were not published between 2010 and 2020, 301 abstracts were screened after 31 duplicates were removed, and 207 articles were retrieved for full-text review. Further elimination was performed if the articles did not report on psychometric properties, reliability, or validity of the assessment tools, were not conducted within the first year of childbirth, did not focus on postnatal mothers, were not in English or Malay, or were published as review papers; 59 articles remained. Data were extracted in the data charting form (Appendix 1). A summary of the studies can be found in **Table 1**.

There were wide variations in the types of assessment tools used for screening of each postnatal mental illness. Several studies validated multiple tools. Therefore, the 59 included articles corresponded to 96 assessment tools for assessing postnatal mental illnesses. From these articles, 2 validated tools were for postnatal blues, 11 for postnatal stress, 12 for postnatal anxiety, 52 for postnatal depression, 5 for the combination of postnatal depression and postnatal anxiety, 4 for postnatal psychosis, and 10 for postnatal psychological disorder.

Out of the 96 tools eligible for inclusion in this review, 7 were utilised in Africa, 24 in Asia, 7 in Australia, 36 in Europe, 20 in North America, and 2 in South America. This observation implies that more research on postnatal mental illness assessment tool psychometric properties was conducted in Western countries compared with Eastern countries.

Table 1. Flow diagram of the search strategy for assessment tools used for postnatal mental illness.

POSTNATAL BLUES							2
INSTRUMENT	**AUTHOR (YEAR)**	**COUNTRY**	**LANGUAGE**	**RELIABILITY**	**VALUE**	**CRITERIA**	**NO. OF ARTICLES**
Daily Experiences Questionnaire (DEQ)	Buttner et al. (2012)	USA	English	Cronbach's alpha (α)	0.88–0.94	Good–Excellent	1
Maternity Blues Scale (MBS)	Pop et al. (2015)	The Netherlands	Dutch	(α)	0.76–0.87	Adequate–Good	1

POSTNATAL STRESS							11
INSTRUMENT	**AUTHOR (YEAR)**	**COUNTRY**	**LANGUAGE**	**RELIABILITY**	**VALUE**	**CRITERIA**	**NO. OF ARTICLES**
Acculturative Stress Index	Dennis et al. (2018)	Canada	Not mentioned	(α)	0.93	Excellent	1
Childcare Stress Inventory	Nurbaeti et al. (2019)	Indonesia	Indonesian	(α)	0.74	Adequate	1
Parenting Stress Index (PSI) - Short Form	Gray et al. (2012)	Australia	English	(α)	0.91	Excellent	1
German Parental Stress Questionnaire (GPSQ) - Modified PSI	Anding et al. (2016)	Germany	German	(α)	0.85	Good	2

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO. OF ARTICLES
Swedish Parental Stress Questionnaire (SPSQ) - Modified PSI	Andersson & Hildingsson (2016)	Sweden	Swedish	(α)	0.81	Good	2
Hung Postpartum Stress Scale	Ugurlu et al. (2012)	Turkey	Turkish	(α)	0.93	Excellent	2
	Deltsidou et al. (2018)	Greece	Greek	(α)	0.95	Excellent	
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							12
INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO. OF ARTICLES
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	
Generalised Anxiety Disorder 7 (GAD 7)	Bobevski et al. (2015)	USA	English	(α)	0.85	Good	1
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 mentioned	(α)	0.82	Good	1
Postpartum Specific Anxiety Scale (PSAS)	Fallon et al. (2016)	UK	English	(α) Test-Retest	0.96 0.88	Excellent	1
State-Trait Anxiety Inventory (STAI)	Razurel et al. (2013)	Switzerland	French	(α)	0.95	Excellent	5
	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 mentioned	(α)	0.92	Excellent	
Zung Anxiety Scale	Tran et al. (2011)	Vietnam	Vietnamese	(α)	0.76	Adequate	1

POSTNATAL DEPRESSION							52
INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO. OF ARTICLES
Centre for Epidemiological Studies Depression scale (CES-D)	Deltsidou et al. (2018)	Greece	Greek	(α)	0.91	Excellent	1
Edinburgh Postnatal Depression Scale (EPDS)	Chibanda et al. (2010)	Africa	Shona	(α)	0.87	Good	19
	Lau et al. (2010)	China	Chinese	(α) Test-Retest	0.78 0.90	Adequate Excellent	
	Tesfaye et al. (2010)	Ethiopia	Amharic	(α)	0.71	Adequate	
	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. (2011)	Australia	English	(α)	0.87	Good	
	Kuo et al. (2012)	Taiwan	Chinese	(α)	0.82	Good	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO. OF ARTICLES
	Razurel et al. (2013)	Switzerland	French	(α)	0.72	Adequate	
	Bayrampour et al. (2014)	Canada	English	(α)	0.87	Good	
	Gaillard et al. (2014)	France	French	(α)	0.85	Good	
	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	
	Iwata et al. (2016)	Japan	Japanese	(α)	0.81–0.82	Good	
Edinburgh Postnatal Depression Scale (EPDS)	Bina & Harrington (2017)	Israel	Hebrew	(α)	0.71	Adequate	18
	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	
	Kozinszkv 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	
	Bhusal & Bhandari (2018)	Nepal	Nepalese	(α)	0.74	Adequate	
	Delvari 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	
	Nurbaeti et al. (2019)	Indonesia	Indonesian	(α)	0.80	Good	
	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	
Patient Health Questionnaire 9 (PHQ 9)	Flynn et al. (2011)	USA	English	(α)	0.85	Good	5
	Bobevski et al. (2015)	USA	English	(α)	0.73	Adequate	
	Green et al. (2018)	Kenya	Kiswahili	(α)	0.81	Good	
	Nieto et al. (2019)	Mexico	Not mentioned	(α)	0.85	Good	
	Coffman et al. (2020)	USA	English	(α)	0.80	Good	

INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO. OF ARTICLES
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	8
	Zubran 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	
	Lara et al. (2013)	Mexico	Spanish	(α)	0.77–0.80	Adequate–Good	
	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	

POSTNATAL DEPRESSION							5
INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO. OF ARTICLES
Edinburgh Postnatal Depression Scale (EPDS)	Cunningham et al. (2014)	Australia	English	(α)	0.87	Good	1
	Torreki et al. (2014)	Hungary	Hungarian	(α)	0.75	Adequate	1
	Bina & Harrington (2017)	Israel	Hebrew	(α)	0.76	Adequate	1
	Martin & Redshaw (2018)	England	English	(α)	0.84–0.85	Good	1
Hospital Anxiety and Depression Scale (HADS)	Grylka-Baeschlin et al. (2015)	Germany	German	(α)	A: 0.75–0.76 D: 0.65–0.75	Adequate Poor–Adequate	1

POSTNATAL DEPRESSION							4
INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO. OF ARTICLES
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	

POSTNATAL DEPRESSION							10
INSTRUMENT	AUTHOR (YEAR)	COUNTRY	LANGUAGE	RELIABILITY	VALUE	CRITERIA	NO. OF ARTICLES
Depression Anxiety Stress Scale (DASS 21)	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 mentioned	(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	
General Health Questionnaire (GHQ 12)	Tran et al. (2011)	Vietnam	Vietnamese	(α)	0.64	Poor	3
	Spiteri et al. (2013)	UK	Maltese	(α) Test-Retest	0.92 0.80	Excellent Good	
	Ngai & Ngu (2015)	Hong Kong	Chinese	(α)	0.74–0.83	Adequate–Good	
Kessler	Tesfaye et al. (2010)	Ethiopia	Amharic	(α)	0.90	Excellent	2
	Tesfaye et al. (2010)	Ethiopia	Amharic	(α)	0.86	Good	
Postpartum Distress Measure Scale (PDMS)	Shokuhi et al. (2020)	Iran	Persian	(α)	0.75	Adequate	1

Reliability and validity of the assessment tools

There were inconsistencies in assessing the validity of the data across the measures, such as concurrent validity, convergent validity, divergent validity, and predictive validity; therefore, a validity coding scheme could not be implemented across the assessment tools. A summary on any evidence of validity presented in the original psychometric papers is presented in Appendix 1.

Reliability data were categorised as adequate, good, or excellent based on the criteria suggested by Hunsley & Mash in 2008. These criteria are reviewed in **Table 2**.

Table 2. Reliability criteria.

Type of reliability	Criteria	Preponderance of evidence
Internal consistency Cronbach's 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 value 0.60–0.74 ICC or p-value 0.70–0.79
	Good	κ values 0.75–0.84 ICC or p-value 0.80–0.79
	Excellent	κ value ≥0.85 ICC or p-value ≥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 1 year or longer

Postnatal blues

In this review, only two articles reported on the psychometric properties of assessment tools used to screen postnatal blues: the Daily Experiences Questionnaire (DEQ) and the Maternity Blues Scale (MBS), and both were conducted in Western countries. Although both assessment tools had adequate-to-excellent reliability in these studies, they cannot be suggested as appropriate assessment tools for the screening of postnatal blues in Malaysia as they have yet to be tested in a Malaysian population or setting. The study that utilised the DEQ as its assessment tool used a modified version of the MBS, and the MBS (Dutch version) had modified rating scale to make it suitable for their study setting.

Postnatal stress

A total of 11 studies were identified assessing postnatal stress, with the most used tools being the Parental Stress Questionnaire (PSQ), Hung Postpartum Stress Scale (HPSS), and the Perceived Stress Scale (PSS), which were represented in two articles each. Among these three tools, the HPSS showed the highest reliability, with an excellent Cronbach's alpha range (0.93–0.95).[16,17] Both the PSQ and HPSS had subscales regarding maternal role attainment, social support, and physical health problems. The PSS only measured negative emotions and coping capability generally. Based on the current assessment tools used to measure postnatal stress in this review, it can be concluded that these three subscales might be important when developing an assessment tool to measure postnatal stress.

Postnatal anxiety

A total of 12 studies fulfilled the inclusion criteria to be included in this review and all were developed by researchers based on the observations and experiences of Western postnatal mothers; 10 were conducted in Western countries and 2 were conducted in Eastern countries. The reliability criteria of these assessment tools were adequate to excellent in Western countries compared with poor to adequate in Eastern countries. The most used tool to measure postnatal anxiety was the State-Trait Anxiety Inventory (STAI), and all the studies were conducted in Western countries had good-to-excellent reliability.[18–22] The main subscales used to measure postnatal anxiety in STAI were the State-Trait Anxiety Inventory- State (STAI-S), which measures anxiety state as a temporary condition of a subjective feelings, and the State-Trait Anxiety Inventory- Trait STAI-T, which measures anxiety as a general characteristic.

Postnatal depression

Postnatal depression is the most common postnatal mental illness worldwide. Of the 52 studies included in this review, 37 used the Edinburgh Postnatal Depression Scale (EPDS) as their assessment tool to measure postnatal depression. From this figure, four out of five studies used the EPDS to measure both postnatal anxiety and postnatal depression. The EPDS is the most diverse assessment tool for the postnatal population, with reliability criteria ranging from poor to excellent. In this review, Western countries showed adequate-to-excellent reliability; in contrast, Eastern countries showed poor-to-good reliability. The EPDS has three main subscales: anhedonia, anxiety, and depression, with one question on suicidal ideation and self-harming. The second most popular assessment tool used for postnatal depression is the Postpartum Depression Screening Scale (PDSS). The PDSS also has subscales that are included in the EPDS but uses different points, a Likert scale, and more subscales. In this study, the PDSS showed adequate-to-excellent reliability criteria. The third most common assessment tool is the Patients Health Questionnaire 9 (PHQ 9), which only measures the symptoms of depression with one question on self-harming. It was designed for general use rather than specifically for postpartum patients. The subscales found in the EPDS, PDSS, and PHQ 9 can be considered when developing an assessment tool to measure postnatal depression.

In Malaysia, the most recent study conducted by Nursazila Asikin et al. in 2019 found that the internal consistency of the EPDS (with a cut-off point of 12) was adequate during the first month of the postnatal period (Group 1) with an α value of 0.78; however, this value declined to 0.62 during the period of 1–3 months postnatally (Group 2). Nevertheless, when item 2 was deleted from the tool, the internal consistency of Group 1 increased to 0.85 (good) and the internal consistency of Group 2 increased to 0.71 (adequate). This was the only study conducted in Malaysia in this review, and the findings will be considered when developing an assessment tool appropriate for Malaysian mothers.

Postnatal psychosis

The only study found to measure the psychotic-like experience (PLE) in postnatal psychosis was conducted by Holt et al. in 2018 in the United Kingdom. This study used two assessment tools, the Launay Slade Hallucination Scale (LSHS) and the Peters Delusion Inventory (PDI), which measure characteristics of psychotic disorders. The LSHS has poor reliability criteria and PDI has adequate reliability criteria. These tools have not yet been used in Malaysian studies, but these items might be necessary for the measurement of postnatal mental illnesses.

Postnatal psychological disorder

This review found four types of assessment tools that were used to measure postnatal psychological disorders: the Depression Anxiety Stress Scale (DASS), the General Health Questionnaire-12 (GHQ 12), Kessler, and a new scale known as the Postpartum Distress Measure Scale (PDMS). These types of assessment tools aim to measure common postnatal mental illnesses, such as stress, anxiety, and depression. The most common tool is the DASS (4 out of 10 studies).[17, 25–27] The DASS presents adequate-to-excellent reliability criteria in both Western and Eastern countries.

Discussion

A wide variety of assessment tools to assess postnatal mental illnesses were identified; however, several were modified based on the objective of the study, the study population, and the setting. This implies that the assessment tools were locally adapted to improved their reliability and validity. According to Ali et al.[11], local validation should be conducted whenever possible to ensure all questions are correctly understood and to ensure better understanding of postnatal mental illness expression and experience, allowing for local idioms to be incorporated into the assessment tools. In the Malaysian National Health and Morbidity Survey report,[28] three recommendations were made regarding perinatal mental illness screening. First, it was recommended that the promotion of mental health should be enhanced towards antenatal and postnatal mothers. Second, the HCPs should increase their knowledge and skills regarding perinatal mental health. Third, screening opportunities for postnatal mental illness in healthcare should be explored.

The results of this review showed that the EPDS was the most common assessment tool used to measure postnatal depression; it was also used to measure postnatal anxiety. The DASS was the most common assessment tool used to measure postnatal psychological

disorder. However, the EPDS has poor internal consistency among postnatal mothers in Malaysian population.[28] Even though DASS has been shown to have adequate-to-excellent reliability in both Eastern and Western countries, it has not yet been tested in postnatal Malaysian mothers; therefore, it is considered unreliable until validated. Furthermore, both the EPDS and DASS lacked items related to fatigue, appetite disturbances, and decision-making, which are characteristics of depressive mood disorder.

The EPDS, PDSS, PHQ 9, and DASS did not contain items on harming the baby or infanticide. These items may represent a critical omission, as a positive score on this item might indicate postnatal psychosis, which is a psychiatric emergency. Furthermore, current assessment tools used in Malaysia only focus on postnatal depression, while postnatal anxiety and stress have a high comorbidity with depression. A comprehensive assessment tool is required to screen postnatal mental illnesses among mothers that is not only specific to postnatal depression. Not all postnatal mental illnesses need to be screened, as the purpose of screening is to identify people in an apparently healthy population who are at a higher risk of developing a health problem or a condition so that early treatment or intervention can be offered.[29]

Overall, this review indicated the items generated to assess postnatal mental illness were generated based on the Western woman's experience. The experience of postnatal mental illness is not an experience that is expressed uniformly by woman around the world, possibly due to postnatal mental illness being interpreted differently from one person to another.[30] For example, culture and tradition were reported as the factors contributing to postnatal depression among Asian women due to the lack of the empowerment to reject traditional rituals that were imposed on them by their female caregivers.[31,32] Several features of these traditional rituals may cause tension, stress, and emotional distress. Therefore, using Western-oriented screening tools to detect postnatal mental illness among Malaysian mothers may not be appropriate or equally valid in this population.

In current practice, the nurse and midwife play an important role in screening and identifying signs and symptoms of postnatal mental illness in postnatal mothers.[33] The Perinatal Care Manual recommends at least nine postnatal visits by the nurse or midwife on days 1, 2, 3, 4, 6, 8, 10, and 15 of postnatal period for normal pregnancy and delivery cases.[34] During this visit, women should be asked about their emotional wellbeing, family, and social support in addition to their coping strategies. Any abnormalities identified during these visits may require appropriate referral and additional visits. The WHO recommends that HCPs working within perinatal care provisions be able to assess mental illnesses in women receiving antenatal and postnatal healthcare.[35] In summary, HCPs in Malaysia should have the appropriate knowledge, skills, and relevant assessment tools to detect perinatal mental illnesses.

Limitations

This review encompassed literature spanning the 10 years prior to the study to ensure its reliability and relevance to the current healthcare situation. Novel and older studies that were closely related to the research question might have been missed during the literature review process. In addition, only three online databases were used, which might yield limited and biased search results. Geographical and cultural differences may have influenced the study, as the study is one of a kind in Malaysia.

A review protocol was not established for this scoping review. However, the researchers followed the five-step framework proposed by Arksey and O'Malley and the JBI regarding scoping reviews to ensure that the results were rigorous, explicit, transparent, and trustworthy.

Implications for future research and recommendations

Despite the variety of assessment tools available to assess postnatal mental illnesses (e.g., EPDS, PDSS, PHQ 9, DASS, and GHQ 12), they were developed based on the Western woman's experience of postnatal mental illness.[11,36] An in-depth understanding of the symptoms, experiences, and local idioms of a population is needed to develop an appropriate assessment tool in a diverse ethnic and cultural environment, like that of Malaysia. It is recommended that this assessment tool should be developed by a group of HCPs who are familiar with

postnatal mental illnesses among Malaysian postnatal mothers.

Conclusion

This review has provided information about some of the main assessment tools currently available to measure postnatal mental illnesses. While HCPs recognise the importance of the assessment tools, especially in a primary healthcare setting,[11] there are no standard tools available that have been deemed appropriate in a particular population. Because most of the assessment tools were developed based on Western cultures and languages, these scales may lead to inconsistency and inaccuracy when used in a population that differs in not only language and dialect but also in cultural and racial background; furthermore, these factors greatly influence the perception and interpretation of postnatal mental illnesses. This observation indicates the need for the development of assessment tools for postnatal mental illnesses that are validated within the culture they are evaluating.

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Conflicts of Interest

The authors declare no conflict of interest, financial or otherwise.

How does this paper make a difference to general practice?

- This review consolidates the most common assessment tools used to measure postnatal mental illnesses and their reliability in different populations.
- This review will help the researchers to compare and develop an appropriate tool that can be used to assess postnatal mothers' mental health status in the future.

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