

Edinburgh Postnatal Depression Scale as a Screening Instrument for Postpartum Depression: A Literature Review

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Abstract

Background: Postpartum depression, a mental health problem that can affect maternal health and functioning, the mother–infant relationship, and family well-being. Screening is important to identify women who require further evaluation. The Edinburgh Postnatal Depression Scale (EPDS) is one of the most widely used instruments for screening perinatal depression. Objective: This review aimed to examine the use of the EPDS as a screening instrument for postpartum depression, including its characteristics, score interpretation, psychometric evidence for the Indonesian version, advantages, limitations, and application in healthcare settings. Methods: A narrative literature review was conducted using literature addressing postpartum depression, the EPDS, screening accuracy, cut-off values, psychometric properties, adaptation of the Indonesian EPDS, and its application in healthcare settings. Results: The EPDS is a brief and practical 10-items instrument with good performance. Studies in Indonesia have demonstrated psychometric properties supporting the use of the Indonesian EPDS. However, its performance may vary according to the selected cut-off and population characteristics. The EPDS is not a diagnostic instrument; therefore, positive screening results require clinical evaluation, safety assessment, and appropriate follow-up. Conclusion: The EPDS can be recommended as a screening instrument to support the early identification of postpartum depression, including in primary healthcare settings in Indonesia.

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1. INTRODUCTION

Pregnancy and the postpartum period are times of major change in a woman's life. Physical and hormonal changes occur alongside changes in roles, sleep patterns, relationships with partners and family, and the demands of caring for a newborn. For some mothers, this adaptation process can become more challenging and develop into a mental health problem, one of which is perinatal depression. Perinatal depression includes depressive episodes occurring during pregnancy and after childbirth and can affect not only the mother but also the mother–infant relationship and family well-being [1], [2].

Postpartum depression (PPD) is a condition that is often overlooked by many women after childbirth. Symptoms may include depressed mood, loss of interest or pleasure, fatigue, sleep and appetite disturbances, difficulty concentrating, feelings of guilt or worthlessness, and thoughts of self-harm or suicide. During the postpartum period, some of these symptoms are often considered a normal part of postpartum fatigue, so mothers and families may not recognize that the condition has become clinically significant and requires serious [2].

This condition has become a serious concern, as demonstrated by various epidemiological studies. A meta-analysis that included only studies using diagnostic interviews found that the prevalence of depression within one year after childbirth was 12.1%, while the prevalence of major depression was 7.0%. These figures were higher in low- and middle-income countries than in high-income countries [3]. Meanwhile, a systematic review reported an average prevalence of postpartum depression of 27.6%, with differences largely related to the measurement method, as prevalence estimates obtained using self-report instruments tended to be higher than those obtained through structured diagnostic interviews [4]. These differences indicate that screening results cannot be directly equated with clinical diagnosis.

In Southeast Asia, a systematic review and meta-analysis of 25 studies involving 19,924 postpartum women found a pooled prevalence of postpartum depression of 22.32%. The high heterogeneity across studies indicates that this figure should be interpreted in consideration of population characteristics, timing of assessment, screening instruments, cut-off values, and the social and cultural context of each country [5]. Based on these findings, postpartum depression is a relevant maternal health problem in Southeast Asia, including Indonesia.

Postpartum depression is multifactorial and is associated with various psychological, psychosocial, and environmental factors. A history of depression or psychiatric disorders, anxiety during pregnancy, intimate partner violence, lack of social support, unintended pregnancy, sleep disturbances, and life stress are among the factors consistently associated with an increased risk of postpartum depression [6], [7], [8]. Under these circumstances, structured screening instruments can help healthcare professionals identify mothers who require further evaluation. The American College of Obstetricians and Gynecologists (ACOG) recommends screening for depression and anxiety during pregnancy and the postpartum period using standardized and validated instruments. However, screening should be part of a healthcare system that allows for diagnostic assessment, treatment, and follow-up when screening results indicate risk [2].

One instrument used for this purpose is the Edinburgh Postnatal Depression Scale (EPDS). The Edinburgh Postnatal Depression Scale was specifically developed to detect depressive symptoms during the postpartum period and is brief, making it relatively easy to implement in healthcare settings. Since its initial development, the EPDS has been widely used and translated into various languages [9].

In Indonesia, the EPDS has also undergone various adaptation and psychometric evaluation studies. Research on the adaptation of the Indonesian version of the EPDS has demonstrated validity and reliability characteristics supporting its use in the Indonesian population [10], [11], [12]. Further research has also demonstrated a three-factor structure of the Indonesian EPDS consisting of depression, anxiety, and anhedonia [13].

Although the EPDS has been widely used, evidence regarding its use concerns not only the instrument's ability to detect depressive symptoms but also the selection of cut-off values, language and cultural adaptation, interpretation of results, and the readiness of healthcare systems to follow up on screening results. Although studies on the adaptation and psychometric characteristics of the EPDS are available in Indonesia, this evidence needs to be further understood in relation to the limitations of the instrument and its implementation in healthcare settings. Therefore, a synthesis of the literature is needed that not only discusses the characteristics of the EPDS but also its use as a screening instrument and in clinical care.

This literature review aimed to discuss the role of the EPDS as a screening instrument for postpartum depression, including its characteristics and score interpretation,

psychometric evidence for the Indonesian version, advantages and limitations, and its application in healthcare settings as a basis for recommending its use in the early detection of postpartum depression.

2. METHOD

This study used a narrative literature review method to review the use of the Edinburgh Postnatal Depression Scale (EPDS) as a screening instrument for postpartum depression. The literature search was conducted through PubMed and Google Scholar using keywords related to postpartum depression, perinatal depression, Edinburgh Postnatal Depression Scale, EPDS, screening, psychometric properties, cut-off, and Indonesian version.

The included literature comprised research articles, systematic reviews, meta-analyses, and clinical guidelines relevant to postpartum depression, the EPDS, psychometric characteristics, screening accuracy, interpretation of cut-off values, and the use of the Indonesian version of the EPDS. Literature that was not relevant to the objectives of the review or did not provide information supporting the discussion was excluded. Eligible literature was then analyzed and narratively synthesized according to the main themes of the discussion.

3. RESULTS AND DISCUSSION

3.1. Postpartum Depression

Postpartum depression should not be regarded merely as a normal change in mood after childbirth. The postpartum period is indeed often accompanied by fatigue, sleep deprivation, changes in appetite, and emotional changes. However, when symptoms persist, become more severe, and begin to impair maternal functioning, the condition needs to be distinguished from normal postpartum emotional changes [2].

Clinically, depression is characterized primarily by depressed mood or loss of interest and pleasure accompanied by other symptoms such as changes in sleep or appetite, fatigue, impaired concentration, feelings of worthlessness or guilt, and thoughts of death or suicide. Diagnosis cannot be established solely based on the number of symptoms reported through a questionnaire but requires comprehensive clinical assessment. A common challenge is distinguishing postpartum depression from postpartum blues. Postpartum blues is generally mild and transient, whereas postpartum depression has more persistent symptoms and can cause functional impairment. In contrast, postpartum psychosis is a much more severe condition and may involve delusions, hallucinations, disorganized behavior, and impaired reality testing, requiring immediate management [2].

Distinguishing these conditions is important in the screening process because screening instruments are not intended to replace diagnosis. The Edinburgh Postnatal Depression Scale can help identify mothers who may have depressive symptoms, but diagnosis still requires clinical evaluation, including assessment of symptom duration and impact on maternal functioning as well as other mental health conditions.

3.2. Epidemiology and Risk Factors for Postpartum Depression

The prevalence of postpartum depression depends greatly on how the condition is measured. Studies using self-report instruments generally report higher prevalence estimates than studies using diagnostic interviews. A study by Al-abri, Edge and Armitage in 2023 showed that the average prevalence of postpartum depression across various systematic reviews was 27.6%, but prevalence was higher in studies using self-report measures than in those using diagnostic interviews [4]. This should be considered

when comparing study results. An EPDS score above the cut-off indicates that an individual may have depression and does not mean that the individual has met the diagnostic criteria for major depression. A meta-analysis by Bai et al. (2023) that specifically used diagnostic interviews found lower rates, namely 12.1% for all depression and 7.0% for major depression within one year postpartum [3].

These differences do not mean that one method is more correct and that the other is irrelevant. Screening instruments are intended to identify individuals who may have a condition, whereas diagnostic interviews are used to determine whether diagnostic criteria are actually met. Understanding this distinction is essential when interpreting the EPDS because prevalence obtained through screening cannot be treated as the prevalence of clinical diagnosis. In Southeast Asia, previous research found a pooled prevalence of postpartum depression of 22.32%. The substantial variation across studies indicates that cultural factors, timing of screening, maternal characteristics, and measurement methods can influence the results. Therefore, the use of consistent and standardized instruments is important to improve the detection of postpartum depression in healthcare settings [5].

3.3.Risk Factors for Postpartum Depression

Postpartum depression is not caused by a single factor. It is better understood as the result of interactions among biological vulnerability, psychological conditions, and the mother's social environment. A history of depression is one of the factors most consistently associated with postpartum depression. A meta-analysis of family history of psychiatric disorders also showed that a family history of psychiatric disorders is associated with an increased risk of postpartum depression [14]. Depression or anxiety that has already emerged during pregnancy should also be considered because psychological symptoms during the antenatal period may continue into the postpartum period [2].

Psychosocial factors also play an important role. Lack of support from partners and family, relationship conflict, experiences of violence, unintended pregnancy, and life stress are factors consistently associated with postpartum depression [6], [7], [8]. These factors are important to consider in maternal healthcare because they can help healthcare professionals identify mothers at higher risk who require further attention.

Sleep disturbance is very common during the postpartum period. Changes in sleep patterns due to the baby's needs can result in prolonged sleep deprivation, and evidence indicates an association between sleep disturbance and an increased risk of postpartum depression [8].

3.4.Pathophysiology of Perinatal Depression

The pathophysiology of perinatal depression is multifactorial and involves interactions among neuroendocrine changes, stress responses, biological vulnerability, and psychosocial factors. Changes in reproductive hormones after childbirth may interact with neurobiological systems regulating mood, particularly in women with underlying vulnerability. At the same time, psychosocial stress, lack of social support, experiences of violence, sleep disturbance, and a history of mental disorders may increase this [4], [6].

3.5.Diagnosis and Screening of Postpartum Depression

Diagnosis of postpartum depression requires clinical evaluation. Healthcare professionals need to assess symptoms, duration, impact on activities, history of mental

disorders, differential diagnoses, and suicide risk. Screening has a different purpose. Screening is used to identify individuals who may have a condition, not to confirm a diagnosis. This is an important principle in the use of the EPDS and other screening instruments.

The United States Preventive Services Task Force also emphasizes the importance of identifying and intervening in women at risk of perinatal depression, particularly those with a history of depression, depressive symptoms, socioeconomic difficulties, intimate partner violence, or significant life stressors [15].

Thus, screening is not simply the process of completing a questionnaire. Screening results should initiate a care process that includes interpretation of the results, clinical evaluation, safety assessment, and determination of the need for intervention or referral.

3.6. Edinburgh Postnatal Depression Scale

The Edinburgh Postnatal Depression Scale was developed by Cox, Holden and Sagovsky in 1987 as a self-report instrument to detect postpartum depression in the community. The instrument was designed to be completed quickly. The original study was conducted among postpartum women by comparing the EPDS with diagnostic assessment and demonstrated that the instrument had adequate screening performance [9].

The Edinburgh Postnatal Depression Scale consists of ten questions, with each item scored from 0–3, resulting in a total score ranging from 0–30. Respondents are asked to answer based on their experiences during the previous seven days. Some items require reverse scoring so that a higher overall score indicates more severe symptoms.

An important feature of the EPDS is its focus on psychological symptoms. The instrument does not rely heavily on somatic symptoms such as fatigue or changes in appetite. This is advantageous during the postpartum period because these complaints may occur physiologically after childbirth. The Edinburgh Postnatal Depression Scale can also be used during pregnancy, although its name contains the term postnatal.

3.7. Interpretation of EPDS Score

Interpretation of EPDS scores is an important consideration because the EPDS does not have a single universal cut-off that applies to all populations and all purposes. In the original studies, the EPDS was used with various threshold values. In clinical practice, a cut-off of ≥ 10 is often used to identify mothers who may have depression and require further evaluation [9]. However, more recent evidence indicates that EPDS performance varies according to the cut-off used. An individual participant data meta-analysis by Levis et al. in 2020, including 58 datasets and 15,557 participants, found that a cut-off of ≥ 11 provided the most optimal overall combination of sensitivity and specificity. At a cut-off of ≥ 10 , sensitivity was approximately 85% and specificity 84%, whereas at a cut-off of ≥ 13 , sensitivity was approximately 66% and specificity 95% [16].

These findings demonstrate a trade-off between sensitivity and specificity. A lower threshold tends to increase the ability to identify mothers who may have depression but may produce more false-positive results. Conversely, a higher threshold increases specificity but may miss some cases. Therefore, the cut-off should be selected according to the purpose of screening and the characteristics of the population and should not be considered a universal diagnostic threshold.

Table 2.1. Example of EPDS performance according to cut-off value

EPDS cut-off	Sensitivity	Specificity	Interpretation
≥ 10	$\pm 85\%$	$\pm 84\%$	More sensitive for detecting possible cases
≥ 11	Overall optimal combination	Overall optimal combination	May provide a balance between sensitivity and specificity
≥ 13	$\pm 66\%$	$\pm 95\%$	More specific, but at risk of missing some cases

Note: These values are derived from the meta-analysis by Levis et al. (2020) and should not be considered universal performance estimates for all populations.

EPDS results cannot be used directly to establish a diagnosis of postpartum depression. A score reaching the cut-off, including ≥ 10 , which is commonly used in screening practice, indicates a possibility of depression or depressive symptoms and requires further evaluation. Diagnosis still requires comprehensive clinical assessment.

3.8.Evidence on the Use of EPDS in the Indonesian Population

The use of the EPDS in Indonesia has a reasonably strong evidence base. One of the early studies on cross-cultural adaptation of the Indonesian version of the EPDS was conducted by Hutaaruk in 2011. The study evaluated the adaptation and validity of the EPDS among women in Jakarta and provided support for the use of the EPDS as a screening instrument for postpartum depression in Indonesia [10].

Paramita, Faradiba and Febrayosi (2020) subsequently evaluated the psychometric properties of the Indonesian version of the EPDS through translation, back-translation, content validity assessment, reliability testing, and factor analysis. The study supported the use of the EPDS as an instrument for measuring postpartum depressive symptoms in the Indonesian population [11].

Sari et al. (2021) provided more recent evidence regarding the adaptation of the Indonesian version of the EPDS. In that study, the EPDS demonstrated a content validity index of 0.98 and a three-factor structure consisting of depression, anxiety, and anhedonia, with good internal reliability [12].

Similar findings were obtained in a study of 616 pregnant women in Makassar. Exploratory and confirmatory analyses supported a three-factor model of the Indonesian EPDS, namely anxiety, depression, and anhedonia [13].

Overall, these studies provide support for the content validity, reliability, and factor structure of the Indonesian version of the EPDS. However, the available evidence comes from different populations and research contexts, including pregnant women and postpartum women. Therefore, these findings support the use of the EPDS as a screening instrument in Indonesia, but do not mean that a single psychometric characteristic or a single cut-off value can be directly generalized to all postpartum women in Indonesia.

This is important in the application of the EPDS because the validity of an instrument depends not only on the instrument itself but also on population characteristics, language, culture, intended use, and healthcare context. Therefore, using an Indonesian version that has undergone appropriate adaptation and psychometric evaluation is preferable to using an unvalidated translation.

3.9. Advantages and Limitations of the EPDS

The Edinburgh Postnatal Depression Scale has several characteristics that support its use as a screening instrument for postpartum depression. The instrument consists of ten items and is designed to be completed in approximately five minutes, making it relatively easy to integrate into maternal healthcare services with limited consultation time [9]. The self-report format also allows mothers to report their emotional experiences independently, including symptoms that may not be spontaneously disclosed during consultations. In addition, the EPDS places relatively little emphasis on somatic symptoms commonly experienced during the postpartum period, such as fatigue and sleep disturbance. These characteristics make the EPDS suitable for screening in maternal healthcare settings that require a brief and easy-to-administer instrument.

The Edinburgh Postnatal Depression Scale has also been widely used across various populations and adapted into multiple languages. A systematic review using the COSMIN framework indicated that the EPDS is one of the instruments with strong measurement evidence for assessing postpartum depression [17].

Despite its advantages, the use of the EPDS has several limitations. The main limitation is that the EPDS is a screening instrument rather than a diagnostic instrument. A high score indicates the possibility of depressive symptoms and cannot be used directly to establish a diagnosis of postpartum depression. Positive screening results need to be followed by clinical evaluation to determine the diagnosis and the need for intervention.

EPDS performance is also influenced by the cut-off value used. Levis et al. (2020) showed that changes in the threshold can result in differences in sensitivity and specificity; therefore, cut-off selection should consider the purpose of screening and the characteristics of the population being assessed [16].

Another limitation relates to language and cultural context. Responses to individual items may be influenced by how individuals understand and express emotional symptoms. Therefore, the EPDS used in a particular population should have undergone appropriate linguistic and cultural adaptation as well as psychometric evaluation. In Indonesia, several studies have provided support for the psychometric characteristics of the Indonesian version of the EPDS, although further research in more diverse postpartum populations and healthcare contexts is still needed [10], [12], [13].

The Edinburgh Postnatal Depression Scale is also not designed to identify all mental health disorders during the postpartum period. Conditions such as postpartum psychosis or bipolar disorder require separate history-taking and clinical evaluation; therefore, EPDS screening should not replace comprehensive mental health assessment.

Ultimately, the benefit of the EPDS depends greatly on follow-up after screening. Identifying mothers with positive screening results will not provide optimal clinical benefit if it is not accompanied by access to diagnostic evaluation, mental health services, intervention, and ongoing monitoring.

3.10. Use and Application of the EPDS in Postpartum Depression Screening

The Edinburgh Postnatal Depression Scale should be implemented as part of the maternal healthcare pathway and should not be used as a stand-alone assessment. Screening results should be followed by score interpretation and clinical evaluation to determine whether the mother requires further assessment, intervention, or referral. In mothers with positive screening results, assessment of depressive symptoms, functional

impairment, other mental health conditions, and safety risk should be conducted before determining the diagnosis and appropriate management.

In general, the implementation of the EPDS can be integrated into the healthcare pathway as follows:

EPDS screening → score interpretation → clinical evaluation → safety risk assessment → diagnosis when criteria are met → intervention/referral → follow-up.

At the screening stage, the EPDS is used to identify mothers who may have depressive symptoms. The score is then interpreted according to the cut-off used. A positive screening result does not directly indicate a diagnosis of depression but serves as a basis for further clinical evaluation. This evaluation includes symptoms, duration, functional impairment, risk factors, other mental health conditions, and the risk of suicide or self-harm. Based on the evaluation, healthcare professionals can determine the need for diagnosis, intervention, referral, and follow-up.

In practice, the EPDS can be completed independently by the mother and subsequently assessed by a healthcare professional. For mothers with positive screening results, healthcare professionals should conduct further history-taking to assess depressive symptoms, their duration and impact on functioning, psychosocial risk factors, history of mental disorders, and the possibility of other mental health conditions.

Safety risk assessment is an important part of this evaluation. If thoughts of self-harm or suicide are present, the condition should not be managed solely on the basis of the EPDS score but requires safety assessment and prompt clinical management according to the level of risk.

In Indonesia, the implementation of the EPDS in healthcare facilities is supported by the availability of an Indonesian version that has undergone adaptation and psychometric evaluation. However, this psychometric evidence should be regarded as supporting the use of the instrument rather than replacing evaluation of the instrument's suitability in each healthcare context.

In primary healthcare facilities, the EPDS can potentially be administered by healthcare professionals involved in maternal care, including physicians, midwives, and nurses, according to their competencies and the applicable healthcare system. Clinical decisions should remain based on the screening results together with the patient's overall clinical condition.

Implementation of the EPDS in healthcare facilities should also be supported by a clear follow-up pathway. Screening should be linked to clinical evaluation, management, and referral when the healthcare facility does not have the capacity to provide the required intervention. This approach is important because the benefit of screening is determined not only by the instrument's ability to identify individuals at risk but also by the health system's ability to respond after screening results are obtained.

Thus, successful implementation of the EPDS depends not only on the validity and practicality of the instrument but also on the readiness of healthcare facilities to conduct evaluation, provide intervention, arrange referral, and ensure follow-up.

3.11. Recommendations for the Use of the EPDS

Based on the overall available evidence, the EPDS can be recommended as one of the instruments for screening postpartum depression in healthcare facilities. This

recommendation is supported by the EPDS's brief and easy-to-use characteristics, extensive experience of use, psychometric evidence across various populations, and the availability of an Indonesian version that has undergone adaptation and evaluation [12], [13], [17].

The use of the EPDS should follow several principles. First, the EPDS should be positioned as a screening tool, not a diagnostic tool. Second, interpretation of the results should consider the cut-off and population characteristics. Third, positive screening results should be followed by clinical evaluation. Fourth, the presence of suicidal or self-harm risk requires specific safety assessment. Fifth, healthcare facilities implementing screening should have follow-up and referral mechanisms.

With these principles, the EPDS serves not only as a questionnaire that generates a score but also as a tool to help identify mothers who may have mental health problems and connect them with appropriate evaluation and care.

4. CONCLUSION

The Edinburgh Postnatal Depression Scale is a practical screening instrument with evidence supporting its use for detecting depressive symptoms during the perinatal period, including evidence of adaptation and psychometric characteristics of the Indonesian version. The Edinburgh Postnatal Depression Scale can be used as one of the screening instruments for postpartum depression in healthcare facilities, particularly as part of early detection in maternal healthcare.

The use of the EPDS should be accompanied by interpretation based on an appropriate cut-off and clinical evaluation of mothers with positive screening results. The Edinburgh Postnatal Depression Scale serves as a screening tool rather than a diagnostic tool; therefore, its benefits are maximized when it is integrated with follow-up, intervention, and referral systems available in healthcare facilities.

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