

Effectiveness of the Edinburgh Postnatal Depression Scale (EPDS) as an early screening tool for detecting depression and anxiety in postpartum women

Efektivitas Edinburgh Postnatal Depression Scale (EPDS) sebagai Skrining Awal untuk Deteksi Dini Depresi dan Kecemasan pada Ibu Nifas

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ABSTRACT

Background: Depression and anxiety in postpartum women have a significant impact on the health of the mother, infant, and family. Early detection is essential to prevent long-term psychological complications.

Objective: This study aimed to evaluate whether completing the Edinburgh Postnatal Depression Scale (EPDS), followed by a 20-minute brief education session delivered by midwives, could reduce EPDS scores among postpartum women within two weeks after the intervention.

Methods: A quasi-experimental non-randomized controlled pre-post design was conducted at Pondok Bambu 1 Primary Health Center (intervention) and Pondok Gede District Hospital (control) using purposive sampling. A total of 52 postpartum women participated, with 26 assigned to the intervention group and 26 to the control group. The intervention consisted of EPDS screening followed by a brief education session on perinatal mental health, while the control group received routine care only.

Results: Results showed that the mean EPDS score in the intervention group decreased from 13.23 ± 2.50 to 6.96 ± 2.18 ($\Delta = 6.27$; 95% CI [-6.89; -5.65]; $p < 0.001$; $d = 2.07$), whereas the control group showed no significant change. The post-intervention Mann-Whitney test indicated a significant difference between groups ($p = 0.021$).

Conclusion: These findings highlight that EPDS screening followed by brief education by healthcare providers is effective in reducing psychological distress in postpartum women. Integration of this program into postnatal care services is highly recommended to improve maternal and infant mental health outcomes.

Keywords: EPDS, mental health, postpartum anxiety, postpartum women

ABSTRAK

Latar Belakang: Depresi dan kecemasan pada ibu nifas berdampak signifikan pada kesehatan ibu, bayi, dan keluarga. Deteksi dini sangat penting untuk mencegah komplikasi psikologis jangka panjang.

Tujuan: Penelitian ini bertujuan mengevaluasi apakah pengisian Edinburgh Postnatal Depression Scale (EPDS) yang diikuti edukasi singkat 20 menit oleh bidan dapat menurunkan skor EPDS pada ibu nifas dalam dua minggu pasca intervensi.

Metode: Desain penelitian adalah quasi-experimental non-randomized controlled pre-post yang dilaksanakan di Puskesmas Pondok Bambu 1 (intervensi) dan RSUD Kelas D Pondok Gede (kontrol) dengan teknik purposive sampling. Responden terdiri atas 52 ibu nifas, masing-masing 26 orang pada kelompok intervensi dan kontrol. Intervensi berupa pengisian EPDS dilanjutkan edukasi singkat mengenai kesehatan mental perinatal, sedangkan kelompok kontrol hanya menerima pelayanan rutin.

Hasil: Hasil menunjukkan skor EPDS pada kelompok intervensi turun dari $13,23 \pm 2,50$ menjadi $6,96 \pm 2,18$ ($\Delta = 6,27$; 95% CI [-6,89; -5,65]; $p < 0,001$; $d = 2,07$), sedangkan kelompok kontrol tidak mengalami perubahan signifikan. Uji Mann-Whitney

pascaintervensi menunjukkan perbedaan bermakna antar kelompok ($p= 0,021$).

Kesimpulan: Temuan ini menegaskan bahwa skrining EPDS yang diikuti edukasi singkat oleh tenaga kesehatan efektif menurunkan distress psikologis pada ibu nifas. Integrasi program ini ke dalam pelayanan postnatal sangat dianjurkan guna meningkatkan kualitas kesehatan mental ibu dan bayi.

Kata kunci: EPDS, ibu nifas, kesehatan mental, kecemasan postpartum

INTRODUCTION

Postpartum anxiety is an emotional state characterized by fear, nervousness, or worry that occurs 0-42 days postpartum. This condition is influenced by parity, physical condition, psychological aspects, and social support.[1]The prevalence of postpartum anxiety in Indonesia is reported to reach 28.7%, with the majority of cases occurring in primiparous mothers[2]. If left untreated, anxiety can develop into postpartum blues or postpartum depression, which can have implications for maternal health, infant development, the quality of family relationships, and even the burden on healthcare services[3].

Postpartum depression itself is a mood disorder with symptoms of sadness, hopelessness, loss of interest, and sleep and appetite disturbances, which affects 10–15% of new mothers and can increase to 35% in certain groups[4]. This condition can disrupt mother-child bonding, reduce the quality of family life, and increase the risk of delayed infant development[5]. Unfortunately, most cases of postpartum depression and anxiety go undetected in routine care[6]. This worsens the prognosis because postpartum mothers rarely seek help for their psychological problems, so an effective screening strategy is needed, easily implemented in primary care, and can be immediately followed by simple interventions[7].

The Edinburgh Postnatal Depression Scale (EPDS) is a 10-item screening instrument that has been validated across cultures and shown to be sensitive in detecting perinatal depression. However, implementation of the EPDS in Indonesia is still limited and is generally only administered to mothers who already show symptoms. Several international studies have reported that early screening combined with brief education can reduce the risk of progression to postpartum depression [8]. Scientific evidence on the effectiveness of implementing this intervention in primary care in Indonesia is still very limited[9]. Thus, this study aims to evaluate whether completing the EPDS followed by a brief 20-minute education by midwives can reduce EPDS scores in postpartum mothers within two weeks of the intervention[10].

METHODS

Study design

This study used a non-randomized, pre-post controlled quasi-experimental design with two groups: intervention and control. The study locations were the Pondok Bambu 1 Sub-district Health Center (Puskesmas Pembantu) as the intervention group, which received EPDS screening and brief education, and the Pondok Gede Class D Regional General Hospital (RSUD Kelas D) as the control group, which only received routine services. The study was conducted from June to August 2025[11].

Data source and sampling procedure

The sampling technique used was purposive sampling with inclusion criteria of postpartum mothers who visited health facilities during the study period, were willing to be respondents, and were able to complete the questionnaire independently. The total number of respondents consisted of 52 postpartum mothers (intervention = 26; control = 26).

The intervention consisted of completing a 10-item EPDS questionnaire, followed by a brief 20-minute education session by a midwife on perinatal mental health, supported by leaflets as supplementary material. The education session was provided only once at baseline, with a posttest conducted two weeks after the intervention. The control group received only routine care without screening or additional education[12].

Variables of the study

The independent variable in this study was group status (intervention vs. control), while the dependent variable was the total EPDS score with a range of 0–30, where a cutoff of ≥ 13 indicates possible perinatal depression. The research instrument used was the Indonesian version of the EPDS, which has been validated with a Cronbach's α reliability of 0.83[13].

Data Collection

At baseline, respondents in the intervention group were asked to complete the Edinburgh Postnatal Depression Scale (EPDS) questionnaire, consisting of 10 items to assess symptoms of postpartum depression. After completing the questionnaire, participants received a brief educational session delivered by a trained midwife regarding perinatal mental health, including signs, risk factors, and strategies to seek help. The educational session lasted approximately 20 minutes and was supported by leaflets as supplementary educational materials.

Measurement and Instruments

The primary instrument used in this study was the Edinburgh Postnatal Depression Scale (EPDS), consisting of 10 items with four response options for each item. The total score ranges from 0 to 30, where a score ≥ 13 indicates possible postpartum depression. The Indonesian version of the EPDS has been validated and demonstrated good reliability with a Cronbach's alpha coefficient of 0.83.

Ethical Considerations

This study adhered to ethical principles in research involving human participants. Before participating in the study, all respondents were informed about the purpose and procedures of the research. Participation was voluntary, and respondents were asked to sign an informed consent form prior to completing the questionnaire. Confidentiality and anonymity of the participants were strictly maintained. Personal identities were not recorded in the data collection forms, and all information obtained from respondents was used solely for research purposes.

Data analysis

Data were tested for normality using the Shapiro–Wilk. Pre–post analysis within groups was performed using the paired t-test for normally distributed data or the Wilcoxon signed-rank test for non-normal data. Intergroup comparisons were analyzed using the Mann–Whitney U test, while the proportion of scores ≥ 13 was compared using the McNemar and Chi-square tests. Results are reported as mean \pm standard deviation, mean difference \pm 95% CI, p-value, and effect size using Cohen's d.

RESULTS

The study respondents consisted of 52 postpartum mothers, 26 each in the intervention and control groups. The average age of respondents was 28.6 ± 5.2 years, with the majority in the 25–34 age group (57.7%). More than half of the respondents were primiparous (53.8%), had a secondary education (high school/equivalent, 61.5%), and the majority worked as housewives (63.5%). Complete characteristics of the respondents are shown in Tables 1 and 2.

Table 1. Characteristics of Postpartum Mother Respondents (n = 52)

Variables	Category / Value	Intervention (n=26)	Control (n=26)	Total (n=52)	Percentage (%)
Age (years)	Mean ± SD	28.4 ± 5.1	28.8 ± 5.3	28.6 ± 5.2	–
	< 25 years	6	6	12	23.1
	25–34 years	15	15	30	57.7
	≥ 35 years	5	5	10	19.2
Parity	Primipara	13	15	28	53.8
	Multipara	13	11	24	46.2
Last education	Elementary–Middle School	3	2	5	9.6
	High school/equivalent	16	16	32	61.5
	Diploma–Bachelor	7	8	15	28.9
Occupation	Housewife	17	16	33	63.5
	Working (employee/self-employed)	9	10	19	36.5

Table 2. Research Structure

Population	Location	Group	n	Information
Postpartum mothers (n=52)	Pondok Gede Regional Hospital	Control	26	Routine care without screening/education
	Pondok Bambu Community Health Center 1	Intervention	26	EPDS screening + brief education

Table 3. Comparison of Pre–Post EPDS Scores in Postpartum Mothers (n = 52)

Group	Pretest (Mean ± SD)	Posttest (Mean ± SD)	Δ (95% CI)	p-value	Cohen's d
Intervention (n=26)	13.23 ± 2.50	6.96 ± 2.18	6.27 (–6.89; –5.65)	<0.001	2.07
Control (n=26)	14.85 ± 2.13	14.24 ± 2.01	0.61 (–0.12; 1.34)	0.054	0.29

Table 3 shows a significant decrease in the intervention group, with a very large effect size, while the control group showed no significant change.

DISCUSSION

The study results showed that screening using the Edinburgh Postnatal Depression Scale (EPDS) followed by brief education by midwives significantly reduced psychological distress scores in postpartum mothers. The reduction in scores by $\Delta = 6.27$ ($p < 0.001$) indicated a very strong intervention effect (Cohen's $d = 2.07$). This finding, in its own right, confirms the effectiveness of a simple screening-and-education-based intervention in the postpartum context.

This decline in EPDS scores is likely influenced by several factors. First, the brief post-screening education provided helps increase mothers' understanding of perinatal mental health and provides simple coping strategies for managing postpartum anxiety. Second, the interaction between midwives and mothers during screening has the potential to provide a calming social support effect and strengthen mothers' confidence in navigating the postpartum period. Third, early detection through the EPDS allows at-risk mothers to receive prompt attention and appropriate follow-up.

In terms of respondent characteristics, the majority of postpartum mothers were aged 25–34 years, had secondary education, and were primiparous. Young age and first-time birth experience are known to increase vulnerability to postpartum anxiety, especially when accompanied by limited knowledge about infant care and postpartum emotional changes [8]. However, the relatively homogeneous distribution of respondent characteristics between the intervention and control groups suggests that the decrease in EPDS scores was more likely due to the intervention, rather than differences in demographic background.

The results of this study align with those of Anggarani et al. (2024), who demonstrated that early screening using the EPDS effectively detects the risk of postpartum depression in postpartum mothers in Indonesia [3]. Furthermore, Adli (2022) also emphasized that using the EPDS as a routine screening can help midwives recognize symptoms of depression early and reduce the psychological burden on mothers after childbirth.[14] Similar findings were reported in the study by Zulaiha and ER Surjaningrum (2024), who found that a brief educational intervention after screening was able to significantly reduce perinatal depression symptoms by 30–40% [15], [16].

Thus, the results of this study strengthen the evidence that implementing the EPDS as an initial screening program for postpartum mothers in primary care in Indonesia is an effective and realistic step to improve early detection of postpartum mental health issues. Integrating this program into postpartum services at community health centers (Puskesmas), not just antenatal visits, warrants immediate consideration. Furthermore, the results of this study provide a basis for developing training policies for midwives and other health workers in conducting routine psychological screenings and brief postpartum education. Such training programs can strengthen the role of midwives as frontline providers in maintaining maternal and infant mental health in the community.

However, this study is limited by its relatively small sample size and non-randomized design, so the results need to be confirmed through further studies with experimental designs and larger numbers of participants. Nevertheless, the large effect size suggests the potential for significant clinical benefit and merits integration into daily midwifery practice.

CONCLUSION

This study demonstrated that screening with the EPDS followed by a brief 20-minute education session by midwives effectively reduced EPDS scores in postpartum women within two weeks of the intervention. The average reduction was 6.27 points, with a very large effect size (Cohen's $d = 2.07$), indicating a significant clinical benefit.

These findings confirm that the EPDS is not solely a measurement instrument, but rather a series of interventions, including EPDS screening followed by brief educational sessions. Therefore, this program is recommended to be integrated into antenatal and postnatal services, with a cutoff score of ≥ 13 as the referral threshold for tiered follow-up: additional education, counseling, or referral to a psychologist/psychiatrist, depending on the severity of symptoms.

The study on pregnant women in this sample could not be analyzed pre-post, so further research is needed. Future studies are recommended to use a randomized design with a larger sample size and long-term evaluation to assess the sustainability of the intervention's impact.

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