The Difference of EPDS Examination Results before and after Delivery in High-Risk Pregnant Woman at Unair Hospital

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Abstract

Background: Pregnancy is an exceptional condition for a woman who will become a mother. The prospective mother will experience a phase to continue the offspring, and depression is a complication that generally does not occur in childbirth. **Objective:** To determine the differencein the prevalence of depression through the results of the EPDS examination before and after delivery in high-risk pregnant women at Unair Hospital. **Method:** This research will use an observational analytic study design with a one-group pretest-posttest design strategy—data retrieval using primary and secondary data, namely by questionnaires and medical records at Unair Hospital. The sample in this study consisted of 23 multigravida pregnant women and one primigravida mother who sought treatment at the Outpatient Installation of Unair Hospital in March 2021 - May 2021. **Results:** The prevalence of pregnant women with a tendency to postpartum depression on the EPDS scores before and after delivery are 8% and 17%, respectively. There is a very weak positive correlation between pre-delivery EPDS scores and post-delivery EPDS scores. **Conclusion:** There is no significant difference between the scores before and after delivery in a high-risk pregnant woman at Unair Hospital.

Keywords: *EPDS Score, High-Risk Pregnant Woman, Pre and Post Partum.*

Introduction

Perinatal mental disorders refer to disorders that are common during pregnancy and one year after delivery. The postpartum time frame is debatable as most investigators use a period ranging from 4 weeks to 3 months postpartum. In addition, disorders that occur before pregnancy, or recur with disorders during pregnancy or in the postpartum period, are all considered perinatal mental illnesses[1]. Depression postpartumgenerally does not occur in childbirth but is quite often reported in women.Women have twice the risk of depression as men, and it is often associated with severe symptoms[2].Studies show that the factors associated with postpartum depression can be classified into four broad categories: risk factors for psychiatric, obstetrics, social factors, and lifestyle factors. This mix of factors makes women vulnerable to postpartum depression[3].

There is study estimated that one in seven women globally has experienced postpartum depression. However, depression is often underdiagnosed and untreated[4]. The recorded prevalence of postpartum depression ranges from as low as 0.5% to 60% globally. The prevalence for countries in Asia ranges

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from 3.5% to 63.3%, with Malaysia as the lowest and Pakistan occupying the highest position[5]. In Indonesia, the prevalence of postpartum depression is estimated at 22.3%[6]. There is a study that says that the prevalence of antenatal depression risk in Surabaya reaches 18.95%. This value beats infection, which is the third cause of death (11%) in childbirth[7].

Postnatal depression can be detected as early as possible through the Edinburgh Postnatal Depression Scale (EPDS). The use of routine screening aims to identify symptoms of depression effectively, simply, and economically in women at risk for postpartum depression. In the postpartum period, the EPDS has become the most widely used instrument to identify postpartum depression, and the results of this screening can be used as an additional clinical test[8]. The purpose of this study was to carry out early detection to find out the symptoms of depression in pregnant women on the front lines and to determine the difference in the results of the EPDS examination before and after delivery in high-risk pregnant women.

Materials and Methods

In this research design, the data used primary and secondary data. Primary data was obtained by filling out the Edinburgh Postnatal Depression Scale (EPDS) to measure the level of depression before and after childbirth. In contrast, secondary data was obtained through medical records as a requirement for the sample used in this study. The women will be given a pre-test or initial test to determine the development of the mother during pregnancy. After the subject has passed the labor for two weeks, a post-test or final test will be given to determine the extent of the mother's development after labor. The data processing is done through editing, coding, tabulating and data entry stages using SPSS 26.0 software. A statistical test was carried out to find out the difference in EPDS scores before and after labor in high-risk pregnant women.

The sampling will be carried out through consecutive sampling techniques. It means all women must meet the inclusion and exclusion criteria and will be included in the study. The inclusion criteria are 36–42 weeks gestation, have a high and very high-risk pregnancy, the baby is alive, have a married status and living husband, live in the same house, the prominent family does not face financial problems, the primary family does not have work problems, does not have mental disorders, and not feeling grief in the last three months.

One of the most widely used in clinical practice is the Edinburgh Postnatal Depression Scale (EPDS) score. It showed a sensitivity of 92% and a specificity of 72% for a cut-off of 8 as well as a sensitivity of 81% and a specificity of 88% for a cut-off of 11[9]. The Edinburgh Postnatal Depression Scale (EPDS) was initially developed in the UK. The EPDS is one of the commonly used screening instruments to assess the symptoms of Perinatal Common Mental Disorder (PCMD) in depression and anxiety[10]. EPDS is used to assess the level of depression of postpartum women from the side of the race, ethnicity, and socioeconomic background of the risk of postpartum depression. The EPDS can be used for approximately seven days postpartum to six weeks and includes ten questions[11]. The use of routine screening aims to identify symptoms of depression effectively, simply, and economically in women at risk for postpartum depression; the results of this screening can be used as an additional clinical test[10].

Scores ranging from 0-30 suggest using 12/13 as the cut-off score can be used for clinical screening, but also recommend a lower cut-off score (9/10) for use in community samples[12].A lower cut-off was found in other EPDS whose population does not speak English, i.e., Cut-off the optimal 8/9 off in Myanmar when combining the probability of major and minor depression[13], the 8/9 cut-off was also performed in

Greek, Japanese, and Croatian[14,15,16], and in the United Kingdom for EPDS English and Punjabi or Urdu also use a cut-off of 8[17]. In this study, we use an 8/9 cut-off point on the EPDS, which has been translated and validated in Bahasa Indonesia

Result and Discussion

Table 1 Results of the Wilcoxon Signed Rank Test Difference Test on EPDS Examination Results Before and After Labor in High-Risk Pregnant Women

	N (Total)	Median (Minimum-Maximum)	p Score
EPDS Before Labor	24	2.50 (0 - 8)	0.295
EPDS After Labor	24	2.00 (0 – 9)	

Wilcoxon Signed Rank Test; 12 sample scores decreased, 7 remained, and 5 increased

A statistical test was carried out to find out the difference in EPDS scores before and after delivery in pregnant women. The normality test of EPDS score before and after labor using the Saphiro-Wilk test was not normally distributed ($p < 0.05$). Furthermore, a different test will be carried out using the Wilcoxon Signed Rank Test (Table 1). However, the difference test also did not show a significant difference between scores before and after delivery ($p= 0.295$)

Table 2 Data frequency of research variable

Variables	Category	Total	%
Age	≤ 16 years	0	0
	17-35 years	14	58
	≥ 36 years	10	42
Last Education	Primary School	7	29
	Junior High School	5	21
	High School	9	38
	Higher Education	3	12
Profession	Housewife	17	71
	Employed	7	29
Types of Delivery Methods	C-Section	17	71
	Vaginal Delivery	7	29
Baby Weight	≤ 2999 gram	8	33
	3000 – 3499 gram	10	42
	≥ 3500 gram	6	25
Baby Length	≤ 49 cm	17	71
	≥ 50 cm	7	29
EPDS Score Before Labor	≥ 8	2	
	< 8	22	
EPDS Score After Labor	≥ 8	4	
	< 8	24	

Based onTable 2, 24 total pregnant women met the inclusion criteria determined during the study,which sought treatment at the Outpatient Installation of Unair Hospital in March-May 2021. EPDS results can detect depression in pregnant women without a significant difference in diagnostic value with the postpartum population[9]. This study tried to compare the EPDS screening scores performed before and after delivery.A study in Iran with a population of women giving birth with a history of high-risk pregnancies even reported a higher prevalence of depressive episodes, namely 68.0% consisting of 15.5% mild depression, 23.5% moderate depression, and 29% major depression[18]. The prevalence of depressive episodes, both major and minor, reaches 6.5 – 12.9% during pregnancy and 19% of postpartum mothers experience major depressive episodes in the three months postpartum[19]; This can be a rationale for screening for postpartum depression in the perinatal period, including before delivery.This study found that on examination of the EPDS score before delivery, the prevalence depression of high-risk pregnant women reached 8.33%. Previous studies have unfortunately reported the prevalence of postpartum depression in normal pregnancies. However, when looking at the data on normal pregnancies, this is slightly lower than the previous systematic review reports that reported the prevalence of depression reaching 20% in teenage pregnancies and 10-25% in adult pregnancies[20,21].

The results showed no statistically significant difference between the EPDS score before delivery and the EPDS score after delivery. These results can be understood that an increase in the EPDS score before delivery may predict an increase in the EPDS score after delivery. The score represents the possibility of postpartum depression. The current study reported the prevalence of postnatal depression tendencies in high-risk pregnant women using the EPDS score and found that 16.67% of high-risk pregnant women had a predisposition to postpartum depression (EPDS≥8), its increase two times compared to the pre-tested prevalence of depression before labor. Its similar to a study in Ethiopia with 308 subjects also reported a prevalence of postpartum depression of 15.6%[22].

The increasing prevalence of depression tendencies is a possible phenomenon, especially for mothers with high-risk pregnancies. A history of previous depressive episodes is one of the main risk factors that increase the risk of postpartum depression[23,24]. A systematic review reported that mental disorders such as depressive episodes occurring during pregnancy are strong predictors of postpartum depression[25]. This may explain the increasing prevalence of depression in high-risk pregnant women before and after delivery, coupled with the risk factors for the pregnancy itself, which can also predispose to the emergence of postpartum depression[3]. This is supported by the findings in a systematic review and meta-analysis, which found that cesarean section procedures increased the risk of postpartum depression 1.15 – 1.36 times[26]. The same thing was also reported in 2017, which showed that there was an increased risk of postpartum depression in patients with cesarean section[27].

Meanwhile, the observed decrease in EPDS scores can also be explained by the same approach. A study of pregnant women's perceptions of cesarean section in Ghana showed that subjects had positive perceptions of cesarean section and its role in reducing perinatal and neonatal mortality[28]. This actually provides an alternative explanation that is different from the previous review because cesarean section can act as a reliever factor from the triggers of depression and anxiety that he experienced before the delivery process. Furthermore, similar to the approach used to explain the increased risk of postpartum depression, acceptance of the newborn, adequate self-esteem and parenting skills, good coping mechanisms for pregnant women, positive perception

of cesarean section, exemplary implementation of exclusive breastfeeding, Adequate nutrition, adequate socioeconomic support and empathy from family and the surrounding environment, a good lifestyle such as eating balanced nutritious foods and regular exercise according to ability can have a positive impact and reduce the risk of postpartum depression[3].

Each pregnant woman has very different predisposing factors, especially in relation to the complexity of social life in Indonesia as a developing country. The factors such as maternal insight, self-esteem, coping mechanisms, social and environmental support are different that can explain the findings of increased EPDS scores, persistent EPDS scores, or decreased EPDS scores in high-risk pregnant women with cesarean section.

Conclusion & Acknowledgment

In conclusion, This study showed that the prevalence of pregnant women with a tendency to postpartum depression on the EPDS scores before and after delivery were 8% and 17%, respectively. In this study, there was a fragile positive relationship between the EPDS scores before delivery and the EPDS after delivery. Then the statistical tests found that the data were not normally distributed. The results of the different tests did not show any significant difference between scores before and after delivery. Various efforts and preventive measures can be prepared and carried out so that postpartum depression does not occur with minimal severity and does not interfere with daily activities.

Conflict of Interest: There was no conflict of interest in this study

Ethical Clearance: This study had been approved by the Research Ethics Committee of Airlangga University Hospital, Surabaya, Indonesia.

Source of Founding: Self-funding

References

1. O'Hara MW, Wisner KL. Perinatal mental illness: definition, description and aetiology. Best practice & research Clinical obstetrics & gynaecology. 2014 Jan 1;28(1):3-12.
2. Brummelte S, Galea LA. Postpartum depression: Etiology, treatment and consequences for maternal care. Hormones and behavior. 2016 Jan 1;77:153-66.
3. Ghaedrahmati M, Kazemi A, Kheirabadi G, Ebrahimi A, Bahrami M. Postpartum depression risk factors: A narrative review. Journal of education and health promotion. 2017;6.
4. Bobo WV, Yawn BP. Concise review for physicians and other clinicians: postpartum depression. InMayo Clinic Proceedings 2014 Jun 1 (Vol. 89, No. 6, pp. 835-844). Elsevier.
5. Abdollahi F, Lye MS, Zain AM, Ghazali SS, Zarghami M. Postnatal depression and its associated factors in women from different cultures. Iranian journal of psychiatry and behavioral sciences. 2011;5(2):5.
6. Idaiani S, Basuki B. Postpartum depression in Indonesia women: a national study. Health Science Journal of Indonesia. 2012 Jun;3(1):3-8.
7. Hasanah Z, Joewono HT, Muhdi N. Faktor Risiko Depresi Antenatal Di Puskesmas Jagir Dan Tanah Kali Kedinding Surabaya. Jurnal Keperawatan Muhammadiyah. 2019;4(2):56-66.
8. Azad R, Fahmi R, Shrestha S, Joshi H, Hasan M, Khan AN, Chowdhury MA, Arifeen SE, Billah SM. Prevalence and risk factors of postpartum depression within one year after birth in urban slums of Dhaka, Bangladesh. PloS one. 2019 May 2;14(5):e0215735.
9. Levis B, Negeri Z, Sun Y, Benedetti A, Thombs BD. Accuracy of the Edinburgh Postnatal Depression Scale (EPDS) for screening to detect major depression among pregnant and postpartum women: systematic review and meta-analysis of individual participant data. bmj. 2020

Nov 11;371.

10. Bhusal BR, Bhandari N. Identifying the factors associated with depressive symptoms among postpartum mothers in Kathmandu, Nepal. International journal of nursing sciences. 2018 Jul 10;5(3):268-74.
11. Diniyah K. Gambaran depresi postpartum di rskia sadewa. Media Ilmu Kesehatan. 2017;6(2):162-7.
12. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: development of the 10-item Edinburgh Postnatal Depression Scale. The British journal of psychiatry. 1987 Jun;150(6):782-6.
13. Aung O, Howteerakul N, Suwannapong N, Chansatitporn N, Tangjitgamol S. Validating The Myanmar Version Of The Edinburgh Postnatal Depression Scale As A Screening Tool For Postpartum Depression. Southeast Asian Journal of Tropical Medicine and Public Health. 2020 May 1;51(3):353-65.
14. Vivilaki VG, Dafermos V, Kogevinas M, Bitsios P, Lionis C. The Edinburgh Postnatal Depression Scale: translation and validation for a Greek sample. BMC public health. 2009 Dec;9(1):1-1.
15. Yamashita H, Yoshida K, Nakano H, Tashiro N. Postnatal depression in Japanese women: detecting the early onset of postnatal depression by closely monitoring the postpartum mood. Journal of affective disorders. 2000 May 1;58(2):145-54.
16. Radoš SN, Tadinac M, Herman R. Validation study of the Croatian version of the Edinburgh Postnatal Depression Scale (EPDS). Suvremena Psihologija/Contemporary Psychology. 2013;16:203-18.
17. Husain N, Rahman A, Husain M, Khan SM, Vyas A, Tomenson B, Cruickshank KJ. Detecting depression in pregnancy: validation of EPDS in British Pakistani mothers. Journal of immigrant and minority health. 2014 Dec 1;16(6):1085-92.
18. Khojasteh F, Arbabisarjou A, Boryri T, Safarzadeh A, Pourkahkhaei M. The relationship between maternal employment status and pregnancy outcomes. Global journal of health science. 2016 Sep;8(9):37.
19. Gavin NI, Gaynes BN, Lohr KN, Meltzer-Brody S, Gartlehner G, Swinson T. Perinatal depression: a systematic review of prevalence and incidence. Obstetrics & Gynecology. 2005 Nov 1;106(5 Part 1):1071-83.
20. Abajobir AA, Maravilla JC, Alati R, Najman JM. A systematic review and meta-analysis of the association between unintended pregnancy and perinatal depression. Journal of affective disorders. 2016 Mar 1;192:56-63.
21. Accortt EE, Cheadle AC, Schetter CD. Prenatal depression and adverse birth outcomes: an updated systematic review. Maternal and child health journal. 2015 Jun 1;19(6):1306-37.
22. Wubetu AD, Engidaw NA, Gizachew KD. Prevalence of postpartum depression and associated factors among postnatal care attendees in Debre Berhan, Ethiopia, 2018. BMC pregnancy and childbirth. 2020 Dec;20(1):1-9.
23. Lee DT, Yip AS, Leung TY, Chung TK. Identifying women at risk of postnatal depression: prospective longitudinal study. Hong Kong Med J. 2000 Dec 1;6(4):349-54.
24. Davey HL, Tough SC, Adair CE, Benzies KM. Risk factors for sub-clinical and major postpartum depression among a community cohort of Canadian women. Maternal and child health journal. 2011 Oct 1;15(7):866-75.
25. Lancaster CA, Gold KJ, Flynn HA, Yoo H, Marcus SM, Davis MM. Risk factors for depressive symptoms during pregnancy: a systematic review. American journal of obstetrics and gynecology. 2010 Jan 1;202(1):5-14.
26. Moameri H, Ostadghaderi M, Khatooni E, Doosti-Irani A. Association of postpartum depression and cesarean section: A systematic

review and meta-analysis. Clinical Epidemiology and Global Health. 2019 Sep 1;7(3):471-80.

27. Xu H, Ding Y, Ma Y, Xin X, Zhang D. Cesarean section and risk of postpartum depression: a meta-analysis. Journal of psychosomatic research. 2017 Jun 1;97:118-26.
28. Gandau BB, Nuertey BD, Seneadza NA, Akaateba D, Azusong E, Yirifere JY, Kankpeyeng HB, Tette EM. Maternal perceptions about caesarean section deliveries and their role in reducing perinatal and neonatal mortality in the Upper West Region of Ghana; a cross-sectional study. BMC pregnancy and childbirth. 2019 Dec;19(1):1-4.