J Nepal Health Res Counc 2026 Jan-March; 24 (70): 60-65

Screening for Postpartum Depression using Edinburg Postnatal Depression Scale

Bibechan Thapa,[1] Neena Rai,[2] Prakriti Lamichhane,[2] Subash Pandey,[2]Anuja Acharya, [2] Smrity Maskey,[3] Meenu Maharjan,[3] Aakriti Pandey,[4] Prajwal Pudasaini,[5] Reena Yadav[6]

[1]Department of Emergency Medicine, Nepal National Hospital, Kathmandu, Nepal, [2]Department of Psychiatry, KIST Medical College and Teaching Hospital, Lalitpur, Nepal, [3]Department of Gynecology and obstetrics, KIST Medical College and Teaching Hospital, Lalitpur, Nepal, [4]Department of Emergency Medicine, KIST Medical College and Teaching Hospital, Lalitpur, Nepal, [5]Department of Dermatology, Civil Service hospital, Baneshwor, Kathmandu, Nepal, [6]Department of Medicine, Central Jail Hospital, Kathmandu, Nepal.

ABSTRACT

Background: Postpartum depression (PPD) is a non-psychotic depressive episode within one year post-delivery. If left untreated PPD can lead to chronic depression, neglect, substance abuse, or suicidal ideation. It is common and often undiagnosed complication of childbirth because routine screening is not standard during postnatal care. The Edinburgh Postnatal Depression Scale (EPDS) is a widely used screening tool recommended for early detection. This study assesses the prevalence of PPD and its association with socio-demographic, obstetric, perinatal, and psychiatric factors.

Methods: A cross-sectional study was conducted at KIST Medical College and Teaching Hospital after ethical approval. A total of 167 postpartum women (6–10 weeks post-delivery) were recruited via simple random sampling. Data were collected through structured interviews from June to November 2022 using a Nepali-translated EPDS (PPD cutoff: ≥13). Statistical analysis was performed using SPSS, with chi-square tests ($p<0.05$).

Results: PPD prevalence was 17.4% (29/167). Significant associations were found with mode of delivery ($p=0.031$), neonatal ICU admission ($p=0.021$), past psychiatric history ($p=0.000$), and family psychiatric history ($p=0.000$). No significant associations were noted for age, education, employment, parity, or maternal complications. The odds ratio of PPD were 2.8 times higher in mothers who had their newborn admitted to neonatal ICU- and 14.8 times higher in those with a psychiatric history in family.

Conclusions: PPD remains a significant concern despite a lower prevalence than regional studies. Routine EPDS screening should be integrated into postpartum care for early detection.

Keywords: Depression; edinburg postnatal depression scale; postpartum; pregnancy; screening.

INTRODUCTION

The postnatal period is a significant risk factor for the development of mood disorders. According to standardized diagnostic criteria, any episode of non-psychotic depression occurring within one year of childbirth is classified as postpartum depression (PPD).[1] PPD is a common complication following childbirth,[1,2-5] yet it often remains undiagnosed despite its clinical importance.[1,5] If untreated, it may progress into chronic, recurrent depression.[1,3,6] Although PPD is a serious concern, routine screening is not consistently incorporated into postnatal care, leading to underdiagnosis. Several tools available are able to identify PPD, however, the Edinburgh Postnatal Depression Scale (EPDS) is the one most widely used.[1,7-10] Routine screening with the EPDS is recommended by the American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, and the United States Preventive Services Task Force. However, clinical evaluation remains the gold standard to confirm the diagnosis and guide appropriate management.[5]

Correspondence: **Bibechan Thapa, Nepal National Hospital, Kathmandu, Nepal. Email: bibechanthapa@gmail.com, Phone: +9779841606316.**

METHODS

A cross-sectional study was conducted among postpartum women within the six to ten-weeks of childbirth at KIST Medical College and Teaching Hospital, Lalitpur. The target population comprised of women who attended follow-up visits at the postpartum clinic or vaccination clinic for newborns. Ethical approval was obtained from the institutional review committee (IRC number 2078/79/65). Women actively undergoing treatment for psychiatric conditions (diagnosed and managed by a psychiatrist) were excluded.

Using a 12% prevalence estimate of postnatal depression from a previous Nepali study,[8] the sample size was calculated using the single-proportion formula:

$n = z^2 * (pq / d^2)$
at 95% confidence level and 5% margin of error, yielding n = 163.

A total of 167 participants were enrolled who met the inclusion criteria. Informed written consent was obtained and one-on-one interviews were carried out from June 1, 2022, to November 30, 2022. The interviews took place in a secure environment, with participants separated from accompanying visitors to minimize potential influences on their responses.

The first part of the questionnaire included variables assessing socio-demographic factors (age, educational status, employment status), obstetric and perinatal factors (parity, mode of delivery, peripartum complications, neonatal intensive care unit (ICU) admission), and medical history (past and family history of psychiatric conditions). The second part comprised the Nepali-translated version of the Edinburgh Postnatal Depression Scale (EPDS),[7,11] with scores of 13 or above considered indicative of depressive illness.[12]

Data were analyzed using SPSS version 26. Descriptive statistics were employed to present the results in terms of frequencies, percentages, mean, and standard deviation. The Chi-square test was used to assess associations, and a p-value of <0.05 was considered statistically significant.

RESULTS

The prevalence of postpartum depression was 17.4%, 29 out of 167 (score of 13 or more). The mean age of women with depression was 26.07 +/- 4.05 years. A significant association was found between diagnosis of depression (score of 13 or more) to mode of delivery (p 0.031), neonatal ICU admission (p 0.021), history of psychiatric conditions (p <0.001) and family history of psychiatric conditions (p <0.001) **(Table 1).** There was no significant association found between diagnosis of depression to age (p value 0.708), level of education (p values 0.234), employment status (p value 0.777), parity (p value 0.499) and maternal complications (p value 0.821) (Table 1).

Table1. Different characteristics of patients and post-partum depression

	Depression (score >=13)	**No Depression** (score < 13)	**P value**
Mean Age +/- Standard deviation	26.07 +/- 4.05	26.44 +/- 3.47	
Age			
<30 years	24	110	0.708
>=30 years	5	28	
Level of education			
Less than Secondary level	9	59	0.234
secondary level or above	20	79	
Employment status			
Employed	7	30	0.777
Non employed	22	108	
Parity			
Primiparous	20	86	0.499
Multiparous	9	52	
Mode of delivery			
Normal Delivery	12	87	0.031
Cesarean section	17	51	
Maternal complications			
Yes	2	8	0.821
No	27	130	
Neonatal ICU admission			
Yes	12	29	0.021
No	17	109	
Past history of psychiatric condition			
Yes	5	0	0.000
No	24	138	
Family history of psychiatric condition			
Yes	6	3	0.000
No	23	135	

Subsequently, multivariate analysis was conducted using logistic regression, incorporating variables that demonstrated statistical significance in the bivariate analysis via the Chi-square test. Neonatal intensive care unit (NICU) admission ($p = 0.042$) and family history of psychiatric disorders ($p < 0.001$) emerged as significant predictors of postpartum depression.

Mothers whose newborns required NICU admission had 2.8 times higher odds of developing postpartum depression compared to those whose newborns did not require NICU care. Similarly, the odds of experiencing postpartum depression were 14.8 times higher among mothers with a positive family history of psychiatric conditions compared to those without such a history.

DISCUSSION

The postpartum period is widely recognized as a vulnerable phase, marked by an elevated risk of developing mood disorders, particularly depression.[1] In our study, the prevalence of PPD was found to be 17.4%. This figure is notably lower than those reported in previous studies conducted in Nepal, where depressive symptoms were identified in 29% of postpartum women at Dhulikhel Hospital and 30% at the Maternity Hospital in Kathmandu.[4,10] Similarly, a cohort study from Dhading and Kathmandu, using an EPDS cutoff score >13, reported a prevalence of 22.2%.[13] In the broader context of developing countries, the reported rates of postpartum depressive symptoms range from 11% to 40%,[12] with a study from India indicating a prevalence of 22%.[14]

These findings suggest that the prevalence of PPD among Nepalese women may be lower compared to other developing countries. The observed differences in prevalence could be attributed to several factors. First, variations in screening tools, such as differences in the EPDS cutoff scores, may impact the identification and reporting of depressive symptoms. Additionally, the timing of assessments in different studies can influence the detection of PPD, as symptoms may vary in severity and duration over time. Furthermore, sample size and demographic characteristics, such as age and socioeconomic status, may play a significant role in the prevalence rates observed. Cultural perceptions of mental health and the stigma surrounding mental illness in some communities may also lead to underreporting of depressive symptoms. Finally, the availability and quality of social and emotional support, both during the postpartum period and within the broader community, are likely to influence the mental health outcomes of women. A supportive environment may buffer against the development of PPD, while limited support may exacerbate symptoms.

While the lower prevalence of PPD in our study is noteworthy, it is essential to consider these contextual factors when comparing results across studies. Further research, including large-scale longitudinal studies, is necessary to better understand the multifactorial influences on PPD prevalence and to refine screening protocols for more accurate identification and management of PPD in diverse setting

Our study did not identify any significant association between PPD and demographic variables such as maternal age, education level, or employment status. These findings are consistent with previous research conducted at a university hospital in Kathmandu and at Bharatpur Hospital, Nepal.[10,15] However, contrasting evidence exists; for instance, a study among Rajbangsi women in Nepal found a significant association between maternal education and PPD.[16] In our study, no significant association was found between maternal occupation and PPD, which aligns with findings from a study conducted among North Indian women.[17] A study from Turkey indicated that being a housewife was associated with an increased risk of PPD. This suggests that financial independence and secure employment post-childbirth may serve as protective factors against the development of postpartum depression.[18] These divergent findings signify the complexity of the relationship between employment and PPD. While employment may offer economic stability and psychological benefits in some contexts, its protective effect may be influenced by factors such as job security, workplace stress, and the availability of social and familial support, which vary across different cultural and economic settings.

Regarding parity, our study did not find a significant association with PPD, which aligns with findings from a study conducted at Bharatpur Hospital in Nepal.[15]However, this contrasts with a study in Lalitpur, Nepal, which reported a significant relationship between parity and PPD.[19] Parity could influence in several ways. For some women, having multiple children may increase stress due to greater caregiving demands, while for others, previous childbirth experience may provide a sense of confidence and coping skills that may reduce the likelihood of depression. The lack of a significant association in our study suggests that the relationship between parity and PPD might be influenced by other factors.

Our study found a significant association between the

mode of delivery and PPD. However, international research has yielded mixed results, and larger studies have yet to establish a definitive link between delivery method and the risk of PPD.[20] Notably, a study conducted in Nepal reported a significantly higher risk of PPD in women who delivered vaginally compared to those who underwent cesarean sections.[10] The discrepancy in findings may be influenced by various factors, including cultural differences, healthcare systems, and the psychological impact of different delivery experiences. Vaginal delivery may involve more physical trauma, prolonged recovery, and a perceived loss of control, all of which could contribute to a heightened risk of PPD. Conversely, cesarean deliveries, while associated with a different set of challenges, may be perceived as less physically taxing, though they can bring their own psychological burdens, such as feelings of disappointment or guilt. These factors suggest that the relationship between mode of delivery and PPD is multifactorial and may vary depending on individual circumstances and support systems.

Our study did not find a significant association between infant health problems requiring ICU admission and PPD. This contrasts with a study at the University Hospital in Dhulikhel, which found a strong link between infant health issues and PPD.[10] Similarly, research from Ethiopia indicated that mothers with hospitalized children were nearly three times more likely to experience depression, suggesting that the psychological burden of infant health problems may trigger PPD.[21] The lack of a significant association in our study could be due to differences in the severity of health issues, cultural factors, or the level of maternal support. While the stress of a critically ill infant could contribute to depression, other factors such as coping mechanisms or support systems may influence PPD risk, highlighting the complexity of this relationship.

Our study revealed that a family history of psychiatric conditions was associated with an increased risk of developing PPD, which aligns with a systematic review and meta-analysis showing that mothers with a family history of psychiatric disorders have a twofold higher risk of developing PPD.[22] Additionally, our findings are consistent with other studies that have identified a past history of affective disorders as a strong risk factor for the exacerbation of depressive symptoms.[23] Both a family history of psychiatric conditions and a personal history of affective disorders appear to significantly contribute to the risk of developing PPD. The genetic and environmental factors associated with a family history may increase vulnerability to mood disorders during the postpartum period. Similarly, a past history of psychiatric illness can predispose individuals to heightened emotional distress, leading to a greater likelihood of PPD. These findings underscore the importance of considering both familial and personal psychiatric histories when screening and managing postpartum mental health to better identify at-risk individuals.

The prevalence of PPD using EPDS in our study seems to be lower when compared to other national and regional studies yet the number is much bigger when it comes to mental health disorder which adversely affects overall health and wellbeing of a mother, the newborn and overall family. As it is common complication in post-partum period mental health screening must be integrated into routine care of post-partum women to ensure cases of PPD are identified and managed promptly.

Several limitations of our study must be acknowledged. First, as the research was conducted in a postpartum clinic and a vaccination clinic for newborns within a teaching hospital, the generalizability of our findings to broader community settings may be limited. Additionally, our study relied exclusively on the EPDS, which evaluates depressive symptoms but does not provide a clinical diagnosis. While EPDS is a widely used screening tool, it may not capture the full spectrum of depressive disorders, particularly more severe cases that require clinical evaluation. Lastly, the potential for recall bias in the respondents' reported information cannot be excluded, as participants may have unintentionally misremembered or underreported certain details related to their mental health. These limitations highlight the need for caution when interpreting our findings and suggest that further research, employing diverse diagnostic tools and broader population samples, is necessary for a more comprehensive understanding of postpartum depression.

CONCLUSIONS

The prevalence of PPD identified using the EPDS in this study appears lower than that reported in other national and regional studies. However, it remains a significant mental health concern with substantial implications for the well-being of mothers, newborns, and families. Given that PPD is a common complication in the postpartum period, integrating mental health screening into routine postnatal care is essential to ensure timely identification and appropriate management of affected individuals.

CONFLICT OF INTEREST

Authors declare there are no any conflicts of Interest.

REFERENCES

1. Stewart DE, Robertson E, Dennis CL, Grace SL, Wallington T. Postpartum depression: Literature review of risk factors and interventions. Toronto: University Health Network Women's Health Program for Toronto Public Health; 2003.

2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders.5th ed. Arlington, VA: American Psychiatric Association; 2013.

3. Stewart DE, Vigod S. Postpartum depression. New Eng J Med 2016;375(22):2177-86. doi:10.1056/NEJMcp1607649

4. Giri RK, Khatri RB, Mishra SR, Khanal V, Sharma VD, Gartoula RP. Prevalence and factors associated with depressive symptoms among post-partum mothers in Nepal. BMC Res Notes 2015;8:111. doi:10.1186/s13104-015-1074-3

5. Stewart DE, Vigod SN. Postpartum depression: pathophysiology, treatment, and emerging therapeutics. Annu Rev Med 2019;70:183-96. doi:10.1146/annurev-med-041217-011106

6. Goodman JH. Postpartum depression beyond the early postpartum period. J Obstet Gynecol Neonatal Nurs 2004;33(4):410-420. doi:10.1177/0884217504266915

7. New South Wales Ministry of Health. Edinburgh Postnatal Depression Scale (Nepali version). Sydney: NSW Ministry of Health; 2022. Available from https://www.mhcs.health.nsw.gov.au/publications/epds/nepali

8. Regmi S, Sligl W, Carter D, Grut W, Seear M. A controlled study of postpartum depression among Nepalese women: validation of the Edinburgh Postpartum Depression Scale in Kathmandu. Trop Med Int Health 2002;7(4):378-82. doi:10.1046/j.1365-3156.2002.00866.x

9. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry 1987; 150(6): 782-786. doi:10.1192/bjp.150.6.782

10. Kunwar D, Corey E, Sharma P, Risal A. Screening for Postpartum Depression and Associated Factors among Women who Deliver at a University Hospital, Nepal. Kathmandu University Medical Journal 2015;13(1): 44-48. doi: 10.3126/kumj.v13i1.13752

11. Bhusal BR, Bhandari N, Chapagai M, Gavidia T. Validating the Edinburgh Postnatal Depression Scale as a screening tool for postpartum depression in Kathmandu, Nepal. International journal of mental health systems. 2016 Oct 21;10(1):71. doi: 10.1186/s13033-016-0102-6

12. Nepal MK, Sharma VD, Koirala NR, Khalid A, Shresta P. Validation of the Nepalese version of Edinburgh Postnatal Depression Scale in tertiary health care facilities in Nepal. Nepalese J Psychiatry. 1999;1(1):46-50.

13. Budhathoki N, Dahal M, Bhusal S, Ojha H, Pandey S, Basnet S. Violence against women by their husband and postpartum depression. J Nepal Health Res Counc. 2012 Sep;10(22):176-80. doi: https://doi.org/10.33314/jnhrc.v0i0.327

14. Lanjewar S, Nimkar S, Jungari S. Depressed motherhood: prevalence and covariates of maternal postpartum depression among urban mothers in India. Asian journal of psychiatry. 2021 Mar 1;57:102567. doi: 10.1016/j.ajp.2021.102567

15. Chalise M, Karmacharya I, Kaphle M, Wagle A, Chand N, Adhikari L. Factors associated with postnatal depression among mothers attending at Bharatpur Hospital, Chitwan. Depression research and treatment. 2020;2020(1):9127672. doi: 10.1155/2020/9127672

16. Subba NR. Traditional and Modern Maternal and Child Health Care Practices and their Effects on Rajbanshi Community in Nepal. Journal of Public Health in Developing Countries. 2015 Nov 19;1(2):93.

17. Gupta S, Kishore J, Mala YM, Ramji S, Aggarwal R. Postpartum depression in north Indian women: prevalence and risk factors. The Journal of Obstetrics and Gynecology of India. 2013 Aug;63(4):223-9. doi: https://doi.org/10.1007/

s13224-013-0399-x

18. Goker A, Yanikkerem E, Demet MM, Dikayak S, Yildirim Y, Koyuncu FM. Postpartum depression: is mode of delivery a risk factor?. International Scholarly Research Notices. 2012;2012(1):616759. Doi: https://doi.org/10.5402/2012/616759

19. Dørheim Ho-Yen S, Tschudi Bondevik G, Eberhard-Gran M, Bjorvatn B. Factors associated with depressive symptoms among postnatal women in Nepal. Acta obstetricia et gynecologica Scandinavica. 2007 Jan 1;86(3):291-7. doi: https://doi.org/10.1080/00016340601110812

20. Carter FA, Frampton CM, Mulder RT. Cesarean section and postpartum depression: a review of the evidence examining the link. Psychosom Med. 2006 Mar-Apr;68(2):321-30. doi: 10.1097/01.psy.0000204787.83768.0c.

21. 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 Mar 30;20(1):189. doi: https://doi.org/10.1186/s12884-020-02873-4

22. Kjeldsen MM, Bricca A, Liu X, Frokjaer VG, Madsen KB, Munk-Olsen T. Family history of psychiatric disorders as a risk factor for maternal postpartum depression: a systematic review and meta-analysis. JAMA psychiatry. 2022 Oct 1;79(10):1004-13. doi:10.1001/jamapsychiatry.2022.2400

23. Bloch M, Rotenberg N, Koren D, Klein E. Risk factors for early postpartum depressive symptoms. General hospital psychiatry. 2006 Jan 1;28(1):3-8. doi: https://doi.org/10.1016/j.genhosppsych.2005.08.006/