INTERNATIONAL JOURNAL OF RESEARCH IN PSYCHIATRY

P-ISSN: 2789-1623
E-ISSN: 2789-1631
IJRP 2021; 1(1):56-59
Received: 05-03-2021
Accepted: 25-03-2021

Dr. Sonasree Jammulapati
Associate Professor,
Department of Psychiatry,
Kanti Devi Medical College,
Mathura, Uttar Pradesh, India

Udayabhanu Donepudi
Assistant Professor,
Department of Gynaecology,
Kanti Devi Medical College,
Mathura, Uttar Pradesh, India

Correspondence
Udayabhanu Donepudi
Assistant Professor,
Department of Gynaecology,
Kanti Devi Medical College,
Mathura, Uttar Pradesh, India

Burden and determinants of postpartum depression among rural mothers: A cross-sectional study

Sonasree Jammulapati and Udayabhanu Donepudi

Abstract
Background: Postpartum depression (PPD) is a significant public health concern that adversely affects maternal well-being, infant development, and family dynamics. Women residing in rural areas are especially vulnerable due to limited access to mental health care, sociocultural stigma, and inadequate support systems. This study aimed to estimate the prevalence of PPD and identify its predictors among postpartum women in rural regions.
Materials and Methods: A cross-sectional study was conducted over a one-year period (February 2020 to January 2021) in the Department of Psychiatry at Kanti Devi Medical College. A total of 150 postpartum women residing in rural areas and attending follow-up within 6 weeks to 6 months after delivery were recruited using purposive sampling. Data were collected on sociodemographic variables, obstetric history, social support, and pregnancy planning. Postpartum depression was assessed using the Edinburgh Postnatal Depression Scale (EPDS), with a cutoff score ≥13 indicating probable PPD. Statistical analysis included descriptive statistics, chi-square test, and logistic regression to identify independent predictors ($p<0.05$).
Results: The prevalence of postpartum depression was found to be 26.7%. Significant predictors of PPD included inadequate social support ($\chi^2=14.72$, $p<0.001$) and unplanned pregnancy ($\chi^2=7.19$, $p=0.007$). Women with PPD had a higher mean EPDS score (17.1 ± 4.3) compared to those without PPD (6.2 ± 3.5).
Conclusion: Postpartum depression is prevalent among rural women, with inadequate social support and unplanned pregnancies emerging as key risk factors. Routine mental health screening and community-level interventions are imperative to ensure early identification and management.

Keywords: Postpartum depression, rural women, EPDS, social support, unplanned pregnancy, maternal mental health

Introduction

Postpartum depression (PPD) is one of the most common yet underdiagnosed psychiatric conditions affecting women during the perinatal period. Characterized by persistent low mood, fatigue, emotional lability, sleep disturbances, and suicidal ideation, PPD significantly disrupts maternal functioning and infant care [1]. Unlike transient postpartum blues, which affect nearly 70% of new mothers and resolve spontaneously within two weeks, PPD persists longer and requires clinical intervention [2].

Globally, the prevalence of PPD ranges from 10% to 20%, with considerable variation across socioeconomic and cultural contexts [3]. In low- and middle-income countries, particularly in rural and resource-constrained areas, the burden may be even higher due to lack of awareness, stigma, and poor access to mental health services [4]. According to the World Health Organization, maternal mental health remains critically neglected in rural populations, where structural barriers and sociocultural norms hinder timely identification and care [5].

Several biological, psychological, and social risk factors contribute to the development of PPD. These include a prior history of depression, hormonal fluctuations, unplanned pregnancy, domestic violence, poverty, and lack of social support [6]. In rural settings, women are disproportionately exposed to these determinants, compounded by limited autonomy and cultural expectations of silent suffering after childbirth [7]. Furthermore, the stigma associated with psychiatric illness discourages disclosure, and mental health remains a taboo subject in many traditional communities [8].

The Edinburgh Postnatal Depression Scale (EPDS), a 10-item self-report screening tool, has been validated across multiple populations and is widely used for detecting probable cases of

PPD [9]. A score of 13 or more has been shown to offer optimal sensitivity and specificity for diagnosing major depressive episodes in postpartum women [10]. Despite its utility, routine screening for PPD is rarely integrated into postnatal care in rural regions of developing countries.

India, with its significant rural population and persistently high maternal morbidity, faces substantial challenges in addressing postpartum mental health. While urban-centric studies have documented the prevalence and correlates of PPD, there is a paucity of data focusing on rural women who often remain underrepresented in psychiatric research [11]. This gap is particularly concerning given the cumulative burden of risk factors prevalent in rural settings.

Understanding the prevalence and predictors of PPD in rural areas is essential for informing public health policies and designing culturally appropriate interventions. Early identification and management can improve maternal-infant bonding, reduce the risk of chronic mental illness, and enhance long-term child development outcomes [12].

The present study was conducted with the objective of estimating the prevalence of postpartum depression and identifying its significant sociodemographic and obstetric predictors among rural women attending follow-up at a tertiary care hospital.

Materials and Methods

This was a cross-sectional observational study conducted at the Department of Psychiatry, Kanti Devi Medical College, Mathura, Uttar Pradesh. The study was carried out over a one-year period from February 2020 to January 2021. Ethical approval for the study was obtained from the Institutional Ethics Committee prior to initiation.

Study Population and Sampling

Postpartum women residing in rural areas, attending postnatal follow-up at the Obstetrics and Psychiatry outpatient departments within 6 weeks to 6 months of delivery, were considered eligible. Inclusion criteria comprised: (i) age ≥18 years, (ii) residence in a rural area as defined by national census criteria, and (iii) willingness to participate with informed consent. Women with a history of severe psychiatric illness, current psychotropic medication use, or medical conditions interfering with interview participation were excluded.

A purposive sampling method was used to recruit a total of 150 participants over the study period. Sample size was estimated using a prevalence of postpartum depression of 25% from prior Indian studies, with a 95% confidence level and 7% absolute precision.

Data Collection Procedure

Data were collected using a structured, interviewer-administered questionnaire in the local language (Hindi), which included sections on:

- **Socio-demographic profile:** age, education, socioeconomic status (modified BG Prasad scale), parity.
- **Obstetric and clinical variables:** mode of delivery, pregnancy planning (planned/unplanned), history of miscarriage, and time since delivery.
- **Social Support:** categorized as 'adequate' or 'inadequate' based on presence of emotional, instrumental, and financial support.

Postpartum depression was assessed using the Edinburgh Postnatal Depression Scale (EPDS)**.** The EPDS consists of 10 self-rated items, each scored 0-3, with a maximum score of 30. A cut-off score of **≥13** was used to indicate probable postpartum depression, as validated in the Indian context.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using IBM SPSS Statistics version 26. Descriptive statistics were used for all demographic and clinical variables. Categorical variables were summarized as frequencies and percentages, while continuous variables were expressed as means and standard deviations.

Chi-square test (χ^2) or Fisher's exact test (where appropriate) was applied to assess associations between postpartum depression and predictor variables (e.g., social support, unplanned pregnancy, parity). Independent samples t-test was used to compare mean EPDS scores between groups. Logistic regression analysis was performed to identify independent predictors of PPD. A p-value of **<0.05** was considered statistically significant.

Results

Table 1: Age Distribution of Study Participants (n = 150)

Age Group (years)	Frequency
≤20	11 (7.3%)
21-25	58 (38.7%)
26-30	53 (35.3%)
>30	28 (18.7%)

Table 2: Education Level of Study Participants (n = 150)

Education Level	Frequency
No formal education	18
Primary	45
Secondary	53
Higher secondary	22
Graduate	12

Table 3: Prevalence of Postpartum Depression

PPD Status	Frequency	Percentage
Yes	40	26.7%
No	110	73.3%

Table 4: Social Support and PPD Status

PPD Status	Adequate Support	Inadequate Support	Total	P value
Yes	8	32	40	< 0.001
No	97	13	110	
Total	105	45	150	
PPD Status	Adequate Support	Inadequate Support	Total	

Table 5: Mean EPDS Scores by PPD Status

PPD Status	Mean EPDS Score	SD	P value
Yes	17.1	4.3	<0.001
No	6.2	3.5	

Among the 150 postpartum women assessed in this study, the mean age was 25.8 years with a standard deviation of 4.1. The majority (38.7%) were in the 21-25 age group, followed by 26-30 years (35.3%). Only 7.3% were aged 20 or below, while 18.7% were above 30 years. This distribution reflects the demographic trend of early maternal age in rural communities.

Educational levels were varied: 35.3% of participants had completed secondary education, 30% had only primary schooling, and 12% had no formal education. Only 8% had completed graduation, indicating that most women had limited educational exposure.

The overall prevalence of postpartum depression, based on an EPDS score of 13 or more, was 26.7% (40 out of 150), suggesting that approximately one in four women experienced probable clinical depression during the postpartum period. This figure is consistent with known rural burden patterns and underscores the need for routine mental health assessment in such settings.

A strong association was found between social support and depression status. Among those who reported inadequate support, 71.1% were depressed, in contrast to only 7.6% among women who had adequate support. This association was statistically significant (chi-square = 41.34, $p < 0.001$), establishing social support as a critical determinant.

Additionally, unplanned pregnancy was significantly linked to increased risk of postpartum depression (chi-square = 7.19, $p = 0.007$), suggesting the psychosocial impact of unintended parenthood.

Women with depression had a mean EPDS score of 17.1 (SD 4.3), while those without depression scored 6.2 (SD 3.5), a difference that was statistically significant ($p < 0.001$).

Overall, the findings confirm that postpartum depression is prevalent among rural women and is strongly influenced by modifiable factors such as social support and pregnancy planning.

Discussion

Postpartum depression (PPD) is a significant yet under-recognized maternal health issue, particularly in rural settings where access to mental health care is limited. In this study conducted among 150 rural postpartum women attending a tertiary care center in North India, the prevalence of PPD was found to be 26.7%. This figure aligns with prior research from rural India, where prevalence has ranged between 22% and 28% depending on screening tools and cutoff values used [13,14].

The mean age of participants was 25.8 years, with the highest proportion in the 21-25 year age group. Young maternal age, although not independently predictive in this study, has been previously associated with increased emotional vulnerability and stress during the transition to motherhood, especially in socioculturally constrained rural environments [15].

Social support emerged as the most significant predictor of PPD. Among women reporting inadequate social support, over 70% screened positive for PPD. This observation is supported by findings from a community-based study in Tamil Nadu, where lack of instrumental or emotional support was strongly associated with postnatal depressive symptoms [16]. Social support functions as a protective buffer, mitigating the psychosocial stress of childcare, hormonal changes, and household responsibilities. In rural joint families, absence of support from spouses or elders often leads to emotional isolation and increased mental health risk [17].

Unplanned pregnancy was also significantly associated with PPD in the current study. This corroborates previous research from South Asia and Sub-Saharan Africa, where unintended pregnancies have been linked to higher rates of maternal depression, largely due to economic concerns, familial disapproval, and disrupted life planning [18, 19].

Education level was not found to have a statistically significant direct association with PPD in this cohort. However, studies have shown that lower education indirectly contributes to vulnerability by limiting health literacy, employment opportunities, and decision-making autonomy [20]. In this study, 12% of women had no formal education, highlighting the intersection between poor education and overall psychosocial disadvantage.

The mean EPDS score among depressed participants was significantly higher (17.1 ± 4.3) than in the non-depressed group (6.2 ± 3.5), consistent with international validations of the scale's discriminatory ability [21]. These findings reaffirm the EPDS as an effective screening tool for early detection of depressive symptoms in the postpartum period.

Acknowledgement

The authors would like to express their gratitude towards the departmental staff for their valuable support while conducting this study.

Conflicts of interest: None declared

References

1. O'Hara MW, McCabe JE. Postpartum depression: current status and future directions. Annu Rev Clin Psychol. 2013;9:379-407.
2. Stewart DE, Vigod SN. Postpartum depression: pathophysiology, treatment, and emerging therapeutics. Annu Rev Med. 2016;67:231-245.
3. Shorey S, Chee CYI, Ng ED, Chan YH, Tam WWS, Chong YS. Prevalence and incidence of postpartum depression among healthy mothers: A systematic review and meta-analysis. J Psychiatr Res. 2018;104:235-248.
4. Fisher J, Mello MC, Patel V, Rahman A, Tran T, Holton S, *et al*. Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. Bull World Health Organ. 2012;90(2):139G-149G.
5. World Health Organization. Maternal mental health and child health and development in low and middle income countries: report of the meeting, Geneva, Switzerland. Geneva: WHO; 2008.
6. Slomian J, Honvo G, Emonts P, Reginster JY, Bruyère O. Consequences of maternal postpartum depression: A systematic review of maternal and infant outcomes. Womens Health (Lond). 2019;15:1745506519844044.
7. Patel V, Rodrigues M, DeSouza N. Gender, poverty, and postnatal depression: a study of mothers in Goa, India. Am J Psychiatry. 2002;159(1):43-47.
8. Upadhyay RP, Chowdhury R, Salehi A, Sarkar K, Singh SK, Sinha B, *et al*. Postpartum depression in India: a systematic review and meta-analysis. Bull World Health Organ. 2017;95(10):706-717C.
9. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry. 1987;150:782-786.
10. Gibson J, McKenzie-McHarg K, Shakespeare J, Price J, Gray R. A systematic review of studies validating the Edinburgh Postnatal Depression Scale in antepartum

and postpartum women. Acta Psychiatr Scand. 2009;119(5):350-364.
11. Savarimuthu RJ, Ezhilarasu P, Charles H, Antonisamy B, Kurian S, Jacob KS. Post-partum depression in the community: a qualitative study from rural South India. Int J Soc Psychiatry. 2010;56(1):94-102.
12. Murray L, Cooper PJ. Effects of postnatal depression on infant development. Arch Dis Child. 1997;77(2):99-101.
13. Chandran M, Tharyan P, Muliyil J, Abraham S. Post-partum depression in a cohort of women from a rural area of Tamil Nadu, India. Br J Psychiatry. 2002;181:499-504.
14. Ramasubramaniam S, Sadananthan K. Prevalence of postpartum depression in rural South India. Int J Community Med Public Health. 2017;4(9):3461-3464.
15. Glavin K, Smith L, Sørum R, Ellefsen B. Supportive counselling by public health nurses for women with postpartum depression. J Adv Nurs. 2010;66(6):1317-1327.
16. Jadresic E, Araya R. Validation of the Edinburgh Postnatal Depression Scale (EPDS) in Chilean postpartum women. J Psychosom Obstet Gynaecol. 1995;16(4):187-191.
17. Rahman A, Iqbal Z, Harrington R. Life events, social support and depression in childbirth: perspectives from a rural community in the developing world. Psychol Med. 2003;33(7):1161-1167.
18. Yargawa J, Leonardi-Bee J. Male involvement and maternal health outcomes: systematic review and meta-analysis. J Epidemiol Community Health. 2015;69(6):604-612.
19. Singh S, Chalasani S, Koenig MA, Mahapatra B. The consequences of unintended childbearing: a retrospective study among Indian women. Matern Child Health J. 2012;16(3):545-556.
20. 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; 2003.
21. Cox JL, Chapman G, Murray D, Jones P. Validation of the Edinburgh Postnatal Depression Scale (EPDS) in non-postnatal women. J Affect Disord. 1996;39(3):185-189.