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Original Research Article

Prevalence and determinants of postpartum depression among rural and urban women in South India: a comparative cross-sectional study

Nithin G. N.[1]*, Anjana Sathyanath[2], Krishnamurthy Jayanna[3], G. Lakshmi Padma Priya[1]

[1]Department of Allied Health Sciences, MSRUAS, Bengaluru, India
[2]Medical Affairs, Indegene Inc., Princeton, New Jersey, USA
[3]Department of Public Health, Bengaluru, India

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***Correspondence:**
Dr. Nithin G. N.,
E-mail: drgnnithin96@gmail.com

ABSTRACT

Background: Postpartum depression (PPD) is a significant public health concern affecting maternal wellbeing, infant development and family health, particularly in low- and middle-income countries. Evidence comparing the burden of PPD between rural and urban populations in India remains limited. This study aimed to assess and compare the prevalence of postpartum depression and its associated socio-demographic and obstetric factors among rural and urban women in Bengaluru.
Methods: A community-based comparative cross-sectional study was conducted over two months among 150 postpartum women (75 rural and 75 urban) in Bengaluru. Women between 4 weeks and 1 year postpartum were selected using a multistage sampling technique. Data were collected using a structured questionnaire including socio-demographic and obstetric details and the Edinburgh postnatal depression scale (EPDS). Descriptive statistics and chi-square tests were used for analysis.
Results: The prevalence of PPD was 76% among rural women and 69% among urban women. Mild depression was more common in urban participants, whereas moderate and severe depression were more prevalent among rural women. Significant associations were observed between PPD and housing status, husband's employment and place of delivery ($p<0.05$).
Conclusions: The study revealed a high burden of postpartum depression in both rural and urban settings, with greater severity among rural women. Routine screening for postpartum depression at primary healthcare facilities and strengthening maternal mental health services under national programs are urgently required.

Keywords: Bengaluru, EPDS, Maternal mental health, Postpartum depression, Rural–urban comparison

INTRODUCTION

The postpartum period represents a critical phase in a woman's life, characterized by profound physiological, psychological and social changes. While childbirth is often viewed as a positive life event, the postpartum period can be associated with significant emotional disturbances, ranging from transient mood changes to severe psychiatric conditions. Among these, PPD is one of the most common and disabling mental health conditions affecting women after childbirth.[1] The postpartum period begins immediately after delivery of the placenta and extends up to six weeks; however, depressive symptoms may develop anytime within the first year after childbirth.

Postpartum depression is defined as a non-psychotic depressive episode occurring within one year of delivery and is distinct from the transient "baby blues," which usually resolve within two weeks.[2] PPD is associated with impaired maternal functioning, poor mother–infant

bonding, delayed cognitive and emotional development in children and adverse family outcomes.[3] Globally, postpartum depression affects approximately one in seven women, with higher prevalence reported in low- and middle-income countries compared to high-income settings.[4] A systematic review and meta-analysis from India reported a pooled prevalence of approximately 22%, with wide regional variation.[5] Several socio-demographic and obstetric factors have been associated with PPD in the Indian context, including low socioeconomic status, lack of social support, domestic violence, unintended pregnancy and adverse obstetric outcomes.[6-9]

Despite its substantial public health impact, postpartum depression remains under-diagnosed and under-treated in India. More than half of affected women are not identified by healthcare providers, particularly in primary care settings.[10] Existing research in India has largely focused on urban populations, with limited comparative evidence examining differences between rural and urban women. Rural women may face additional vulnerabilities, including limited access to mental health services, lower health literacy and socioeconomic disadvantages.[11,12] Furthermore, emerging evidence suggests an increase in maternal mental health problems following the COVID-19 pandemic, potentially due to heightened stress, social isolation and disruptions in healthcare services.[13] Understanding the current burden of postpartum depression and its associated factors in different settings is essential for developing targeted screening and intervention strategies.

Therefore, this study was undertaken to estimate and compare the prevalence of postpartum depression and its associated socio-demographic and obstetric factors among rural and urban women in Bengaluru.

METHODS

Study design and setting

A community-based comparative cross-sectional study was conducted from January 2023 to February 2023 in rural and urban areas of Bengaluru, Karnataka, India. The study was carried out among postpartum women attending selected primary healthcare centres (PHCs) in Bengaluru Urban and Bengaluru Rural districts.

Study population

The study population comprised postpartum women who were between 4 weeks and 1 year after delivery at the time of data collection.

Inclusion criteria

Women who had delivered a live baby between 42 days and 1 year prior to the survey. Women residing in the study area for at least six months. Women who provided informed written consent.

Exclusion criteria

Women with a known history of major psychiatric illness. Women who had experienced stillbirth or delivered a baby with congenital anomalies

Sample size and sampling technique

A total sample size of 150 postpartum women was included in the study, with equal representation from rural (n=75) and urban (n=75) areas. A multistage sampling technique was used for participant selection.

Bengaluru urban district is administratively divided into East, South, North, Anekal and Bruhat Bengaluru Mahanagara Palike (BBMP) zones, while Bengaluru Rural district comprises Devanahalli, Doddaballapura, Nelamangala and Hosakote taluks. Three PHCs were randomly selected from each of the rural and urban areas. Data collection was conducted on immunization clinic days at the selected PHCs. Eligible postpartum women attending the PHCs on the data collection days were approached consecutively and recruited after obtaining informed consent.

Data collection tool and procedure

Data were collected using a structured, self-administered questionnaire consisting of three sections.

Socio-demographic characteristics (age, education, type of family, housing status, employment status and husband's occupation). Obstetric and pregnancy-related factors (medical conditions during pregnancy, parity, mode and place of delivery, sex of the baby, gestational age at delivery, breastfeeding practices and puerperal complications)

The Edinburgh postnatal depression scale

The EPDS is a validated screening tool consisting of 10 items designed to identify depressive symptoms in the postpartum period.

Each item is scored on a four-point Likert scale, with total scores ranging from 0 to 30. In this study, an EPDS score of ≥13 was considered indicative of postpartum depression. Based on the EPDS scores, depression was further categorized as mild, moderate or severe.

Study variables

Dependent variable

Postpartum depression status based on EPDS score (positive or negative).

Independent variables

Age, type of family, housing status, maternal employment, husband's occupation, pregnancy-related medical conditions, mode and place of delivery, sex of the baby, gestational age and breastfeeding status.

Statistical analysis

Data was coded and entered into Microsoft Excel 2019 and subsequently analyzed using IBM SPSS Statistics version 20.0. Categorical variables were summarized using frequencies and percentages. The prevalence of postpartum depression was calculated separately for rural and urban participants. The chi-square test was applied to assess the association between postpartum depression and selected socio-demographic and obstetric factors. A p value of <0.05 was considered statistically significant.

Ethical considerations

The study was approved by the Institutional Ethics Committee of Ramaiah University of Applied Sciences, Bengaluru. Written informed consent was obtained from all participants in their local language prior to data collection. Participants were informed about the purpose of the study, assured of confidentiality and given the right to withdraw from the study at any point without any consequences. Permission to conduct the study was obtained from the respective medical officers of the selected PHCs.

RESULTS

A total of 150 postpartum women participated in the study, with equal representation from urban (n=75) and rural (n=75) areas of Bengaluru.

Socio-demographic characteristics

The majority of participants in both urban and rural areas were aged between 26–30 years (43% and 39%, respectively). Nuclear families were more common among rural participants (61.3%), whereas joint families predominated in urban areas (58.7%). A higher proportion of urban women were living in rented houses (76%) compared to rural women (50.7%). Maternal employment was more common among rural women (50.7%) than urban women (36%). Most husbands were employed as jobholders in urban areas (50.7%), while business and farming were more common occupations among husbands in rural areas (Table 1).

Obstetric and pregnancy-related characteristics

Back pain was the most commonly reported pregnancy-related complaint in both urban (62.7%) and rural (40%) women. Caesarean section was the predominant mode of delivery in both settings (urban: 61.3%, rural: 58.7%). Deliveries in private healthcare facilities were more frequent among rural women (66.7%) compared to urban women (56%). The majority of participants delivered at ≥37 weeks of gestation. Exclusive breastfeeding was reported by 73.3% of urban women and 65.3% of rural women (Table 2).

Prevalence of postpartum depression

The prevalence of postpartum depression was higher among rural women (76%) compared to urban women (69%). Among women who screened positive for PPD, mild depression was more common in urban areas (63%), whereas moderate (51%) and severe depression (12%) were more prevalent among rural women. Overall, 31% of urban women and 24% of rural women screened negative for postpartum depression (Table 3).

Factors associated with postpartum depression

Statistically significant associations with postpartum depression were observed for housing status, husband's employment and place of delivery in both rural and urban settings (p<0.05). Age was also significantly associated with postpartum depression, with higher prevalence observed among women aged 26–35 years. No statistically significant association was found between postpartum depression and type of family, pregnancy-related medical conditions, mode of delivery, gestational age at delivery, breastfeeding status or puerperal complications (Table 4).

Table 1: Socio-demographic characteristics of study participants (n=150).

Variable	Urban (n=75), N (%)	Rural (n=75), N (%)
Age (in years)		
<25	21 (28.0)	12 (16.0)
26–30	32 (43.0)	29 (39.0)
31–35	20 (27.0)	27 (36.0)
≥36	2 (2.0)	7 (9.0)
Type of family		
Nuclear	31 (41.3)	46 (61.3)
Joint	44 (58.7)	29 (38.7)
Housing status		
Rented	57 (76.0)	38 (50.7)

Continued.

Variable	Urban (n=75), N (%)	Rural (n=75), N (%)
Own house	18 (24.0)	37 (49.3)
Maternal employment		
Homemaker/student	48 (64.0)	37 (49.3)
Employed	27 (36.0)	38 (50.7)

Table 2: Obstetric and pregnancy-related characteristics.

Variable	Urban, N (%)	Rural, N (%)
Caesarean delivery	46 (61.3)	44 (58.7)
Vaginal delivery	29 (38.7)	31 (41.3)
Delivery at private facility	42 (56.0)	50 (66.7)
Delivery ≥37 weeks	57 (76.0)	47 (62.7)
Exclusive breastfeeding	55 (73.3)	49 (65.3)

Table 3: Prevalence and severity of postpartum depression.

PPD status	Urban (n=75), N (%)	Rural (n=75), N (%)
Negative for PPD	23 (31.0)	18 (24.0)
Positive for PPD	52 (69.0)	57 (76.0)
Mild	33 (63.0)	21 (37.0)
Moderate	15 (29.0)	29 (51.0)
Severe	4 (8.0)	7 (12.0)

Table 4: Factors associated with postpartum depression among study participants (n=150).

Variable	PPD present, N (%)	PPD absent, N (%)	χ^2/P value	Association
Age (in years)				
<25	21 (19.3)	12 (29.3)	<0.05	Significant
26–30	44 (40.4)	17 (41.5)		
31–35	39 (35.8)	8 (19.5)		
≥36	5 (4.5)	4 (9.7)		
Type of family				
Nuclear	56 (51.4)	21 (51.2)	>0.05	Not significant
Joint	53 (48.6)	20 (48.8)		
Housing status				
Rented	75 (68.8)	20 (48.8)	<0.05	Significant
Own house	34 (31.2)	21 (51.2)		
Maternal employment				
Homemaker/student	61 (56.0)	24 (58.5)	>0.05	Not significant
Employed	48 (44.0)	17 (41.5)		
Husband's employment				
Jobholder	49 (45.0)	16 (39.0)	<0.05	Significant
Business/Farmer/Others	60 (55.0)	25 (61.0)		
Mode of delivery				
Caesarean section	68 (62.4)	22 (53.7)	>0.05	Not significant
Vaginal delivery	41 (37.6)	19 (46.3)		
Place of delivery				
Private hospital	75 (68.8)	17 (41.5)	<0.05	Significant
Public hospital	34 (31.2)	24 (58.5)		
Breastfeeding status				
Exclusive	78 (71.6)	26 (63.4)	>0.05	Not significant
Mixed/Bottle	31 (28.4)	15 (36.6)		

DISCUSSION

The present study assessed and compared the prevalence of postpartum depression among rural and urban women in Bengaluru and examined its association with selected socio-demographic and obstetric factors. The findings reveal a high burden of postpartum depression in both settings, with a higher prevalence and greater severity observed among rural women.[11,12] In this study, the prevalence of postpartum depression was 76% among rural women and 69% among urban women. These estimates are substantially higher than those reported in earlier Indian studies, which have documented prevalence rates ranging from 11% to 28%.[6,8] A systematic review and meta-analysis from India reported a pooled prevalence of approximately 22%.[5] The higher prevalence observed in the present study may be attributed to several factors, including the use of a screening-based assessment tool rather than clinical diagnosis, increased awareness and reporting of depressive symptoms and the potential impact of the COVID-19 pandemic on maternal mental health.[3]

The COVID-19 pandemic has been associated with increased psychological stress, social isolation, economic insecurity and disruption of routine maternal healthcare services. These factors may have contributed to an increased vulnerability to depressive symptoms among postpartum women. Similar increases in maternal mental health problems during and after the pandemic have been reported globally, supporting the plausibility of the high prevalence observed in this study.[13]

The study also demonstrated differences in the severity of postpartum depression between rural and urban women. While mild depressive symptoms were more common among urban women, moderate and severe depression were more prevalent among rural women. This finding suggests that rural women may experience delayed identification and limited access to mental health services, leading to greater symptom severity. Structural barriers such as reduced availability of mental health professionals, lower health literacy and socioeconomic disadvantages in rural areas may further exacerbate this disparity.[11,12]

Among the socio-demographic factors examined, housing status, husband's employment and place of delivery were significantly associated with postpartum depression. Housing insecurity and unstable employment of the husband may contribute to financial stress and reduced social support, both of which are well-established risk factors for postpartum depression.[1,7] The association between place of delivery and postpartum depression highlights the importance of the quality of perinatal care and postnatal support services in influencing maternal mental health outcomes.[2,12]

In contrast, no significant association was observed between postpartum depression and obstetric factors such as mode of delivery, sex of the baby, gestational age at delivery, breastfeeding status or pregnancy-related medical conditions. These findings are consistent with several previous studies that suggest socio-economic and psychosocial factors play a more prominent role in postpartum depression than biological or obstetric factors alone.[7,8] The study has several strengths. It employed a validated screening instrument (EPDS) and included a comparative assessment of rural and urban populations, which is relatively under-explored in the Indian context.[3,12] However, certain limitations should be acknowledged. The cross-sectional design precludes causal inference. The relatively small sample size may limit generalizability of the findings. Additionally, the use of a screening tool rather than clinical diagnostic criteria may have led to an overestimation of prevalence.[3]

Despite these limitations, the findings underscore the urgent need to strengthen maternal mental health services at the primary care level. Routine screening for postpartum depression using simple, validated tools such as the EPDS can facilitate early identification and timely referral. Integrating maternal mental health into existing programs under the National Health Mission and the National Mental Health Programme may help reduce the burden of postpartum depression, particularly in rural and underserved populations.[3,10]

CONCLUSION

The present study highlights a high prevalence of postpartum depression among both rural and urban women in Bengaluru, with a comparatively higher burden and greater severity observed among rural women. Socio-demographic factors such as housing status, husband's employment and place of delivery were significantly associated with postpartum depression, underscoring the influence of socioeconomic and healthcare-related determinants on maternal mental health.

Given the substantial burden identified, routine screening for postpartum depression using validated tools such as the Edinburgh Postnatal Depression Scale should be integrated into postnatal care services at the primary healthcare level. Strengthening maternal mental health services under existing national programs, particularly in rural settings, may facilitate early identification, timely referral and appropriate management of postpartum depression. Further longitudinal and interventional studies are warranted to better understand causal pathways and evaluate effective strategies for prevention and management.

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REFERENCES

1. Agarwala A, Rao P, Narayanan P. Prevalence and predictors of postpartum depression among mothers in the rural areas of Udupi Taluk, Karnataka, India: a cross-sectional study. Clin Epidemiol Glob Health. 2019;7(1):95-9.
2. Bener A, Burgut FT, Ghuloum S, Sheikh J. A study of postpartum depression in a fast developing country: prevalence and related factors. Int J Psychiatry Med. 2012;43(4):325-37.
3. Chandran M, Tharyan P, Muliyil J, Abraham S. Post-partum depression in a cohort of women from a rural area of Tamil Nadu, India: incidence and risk factors. Br J Psychiatry. 2002;181:499-504.
4. Dubey A, Chatterjee K, Chauhan VS, Sharma R, Dangi A, Adhvaryu A. Risk factors of postpartum depression. Ind Psychiatry J. 2021;30(1):127-31.
5. Dubey C, Gupta N, Bhasin S, Muthal RA, Arora R. Prevalence and associated risk factors for postpartum depression in women attending a tertiary hospital, Delhi, India. Int J Soc Psychiatry. 2012;58(6):577-80.
6. Gupta S, Kishore J, Mala YM, Ramji S, Aggarwal R. Postpartum depression in North Indian women: prevalence and risk factors. J Obstet Gynaecol India. 2013;63(4):223-9.
7. Klainin P, Arthur DG. Postpartum depression in Asian cultures: a literature review. Int J Nurs Stud. 2009;46(10):1355-73.
8. Modi VP, Parikh MN, Valipay SK. A study on prevalence of postpartum depression and correlation with risk factors. Ann Indian Psychiatry. 2018;2(1):27-32.
9. Mughal S, Azhar Y, Siddiqui W. Postpartum depression. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2023.
10. Shrestha N, Hazrah P, Sagar R. Incidence and prevalence of postpartum depression in a rural community of India. J Chitwan Med Coll. 2015;5(2):11-9.
11. Surkan PJ, Strobino DM, Mehra S, et al. Unintended pregnancy is a risk factor for depressive symptoms among socioeconomically disadvantaged women in rural Bangladesh. BMC Pregn Childb. 2018;18:490.
12. Upadhyay RP, Chowdhury R, Salehi A, et al. Postpartum depression in India: a systematic review and meta-analysis. Bull World Health Organ. 2017;95(10):706-17.
13. Zaidi F, Nigam A, Anjum R, Agarwalla R. Postpartum depression in women: a risk factor analysis. J Clin Diagn Res. 2017;11(8):13-6.
14. Zarghami M, Abdollahi F, Lye MS. A comparison of the prevalence and related risk factors for postpartum depression in urban and rural areas. Iran J Psychiatry Behav Sci. 2019;13(2):62558.
15. World Health Organization. The impact of COVID-19 on mental health cannot be made light of. Geneva: World Health Organization; 2020. Available at: https://www.who.int/news-room/feature-stories/detail/the-impact-of-covid-19-on-mental-health-cannot-be-made-light-. Accessed on 21 July 2025.
16. World Health Organization. Postpartum care of the mother and newborn: a practical guide. Geneva: World Health Organization; 1998.

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