

Research Article

Assessing the Prevalence and Risk Factors for Postpartum Depression in Low-Income Urban Communities

Dr. Preety Soni¹, Dr. Ruchi Prasad²

¹Assistant Professor, Obstetrics & Gynaecology, Radha Devi Jageshwari Memorial Medical College & Hospital, Bihar

²Assistant Professor, Obstetrics & Gynaecology, Radha Devi Jageshwari Memorial Medical College & Hospital, Bihar

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ABSTRACT

Background: Postpartum depression (PPD) affects many women, threatening their health and that of their babies. Many social, cultural, and healthcare factors contribute to the shockingly high rate of PPD in low-income metropolitan areas. These cultures are more likely to experience postpartum depression due to low socioeconomic position, insufficient healthcare, and financial difficulties. To be effective, public health initiatives must identify PPD prevalence and risk factors in these places.

Objective: This study examined postpartum depression in Turki, Muzaffarpur, Bihar, and other low-income urban women who attended Radha Devi Jageshwari Memorial Medical College & Hospital. The study sought to identify the demographic, socioeconomic, and psychological factors most strongly associated with PPD in this group.

Methods: Radha Devi Jageshwari Memorial Medical College & Hospital in Muzaffarpur, Bihar, conducted an observational cross-sectional study from June 2023 to June 2024. The study included 50 women aged six weeks to six months after giving birth. We employed a validated postpartum depression screening tool, the Edinburgh Postnatal Depression Scale (EPDS), and a structured demographic and risk factor questionnaire. The institution's ethics committee approved the study, and all subjects gave informed consent.

Results: 30% (15 women) of 50 women polled had EPDS scores over 12, indicating postpartum depression. The study found high connections between PPD and low socioeconomic status, low social support, a history of mental health issues, and a bigger family size. PPD was 40% for women below the poverty line and 20% among moderate-income women. Additionally, 45% of women with little to no social support scored higher than the EPDS depression criterion.

Conclusion: Postpartum depression is frequent in low-income metropolitan regions, and this study illuminates its social, economic, and psychological causes. The data show that mental health issues, low income, and poor social support considerably increase PPD risk. Early intervention and targeted public health measures can improve mothers' mental health in low-income metropolitan regions.

Keywords: Postpartum Depression, Prevalence, Risk Factors, Low-income Urban Communities, Mental Health, Maternal Health, Public Health Interventions, Edinburgh Postnatal Depression Scale (EPDS).

INTRODUCTION

Postpartum depression affects moms, families, and society. PPD is a major depressive condition that affects women in the first six months after giving birth¹. Inability to bond with baby, melancholy, concern, tiredness, impatience, and inadequacy are PPD symptoms. These symptoms are unique to PPD, unlike "baby blues," which normally last two weeks. Between 10 and 20% of women globally have PPD, however this percentage may be conservative, especially in low-resource countries where mental health issues are often misdiagnosed due to stigma and a lack of healthcare facilities².

We must handle PPD immediately due of its widespread impact. Postpartum depression (PPD) affects babies, families, and communities beyond the mother. Depression can affect a mother's bonding, nursing, and child's cognitive and emotional development³. All of these can cause long-term mental illness. PPD can change caregiving duties and lower productivity, which strains

families financially and often causes marital tension and broken relationships. Despite its effects, PPD is largely disregarded in vulnerable areas. Many cultural and socioeconomic factors enhance PPD in low-income metropolitan areas⁴. Financial instability, housing overpopulation, poor healthcare, and lack of social support compound new moms' struggles. Cultural and societal expectations place too much pressure on women to care for children and the home, leaving little time for mental wellness. These circumstances stigmatise mental illness, discouraging women from getting treatment, which leads to untreated depression cycles⁵.

Understanding PPD in low-income urban populations can be learnt from India, which is rapidly urbanising. Urban slums are stressful due to poverty, inadequate housing, and poor sanitation⁶. In these societies, spousal abuse, malnutrition, social marginalisation, and lack of autonomy increase postpartum depression (PPD) risk.

*Author for Correspondence: Dr. Preety Soni (Assistant Professor, Obstetrics & Gynaecology, Radha Devi Jageshwari Memorial Medical College & Hospital, Bihar)

These issues are linked, so studying and treating PPD in these settings with a regional focus on risk factors and incidence rates is crucial⁷. PPD in low-income metropolitan areas is a public health issue beyond mothers' concerns. Maternal mental health inversely affects maternal morbidity, infant mortality, and family well-being. While stress can disrupt families, infants whose mothers don't get postpartum depression treatment are more likely to have developmental delays and health issues⁸. Early detection and treatment of postpartum depression improves mother and child health, healthcare costs, and social well-being. PPD among poor communities is difficult to address. The problem is that neither the patients nor the doctors know much about the disease. Because many postpartum depression symptoms are considered typical, diagnosing and treating it takes time⁹. Poor healthcare infrastructure exacerbates the problem in low-income metropolitan regions. Many of these hospitals are overloaded, underfunded, and unprepared for mental health. Transportation concerns, long wait times, and high healthcare costs deter women from seeking treatment¹⁰. This study at the Radha Devi Jageshwar Memorial Medical College & Hospital in Turki, Muzaffarpur, Bihar sought localised insights to inform public health and healthcare policies. Due to its diversified population, Muzaffarpur offers a rare chance to study urbanisation and maternal mental health.

This study seeks to determine how common postpartum depression is and what factors put women in low-income urban regions at risk for it when they go to the hospital. Findings will fill PPD knowledge gaps in these circumstances, enabling more targeted interventions for affected families and women. This study asks: How common is PPD in this community? What social, economic, and psychological factors cause it? Can community support and healthcare systems reduce this burden? Therapeutic and preventative interventions to promote maternal mental health in comparable urban regions with low incomes will be based on these answers. This research concludes that low-income urban PPD must be addressed promptly. It asks for a comprehensive approach to this essential issue, emphasising the connection of maternal mental health, child well-being, and public health. This study will illuminate PPD frequency and causes to improve the health of disadvantaged mothers and children.

Methodology

Study Design: This observational cross-sectional study examined PPD-afflicted women. Cross-sectional study is effective at identifying PPD and related risk factors by collecting and analysing data at a specific time. This method helps understand demographic, social, and medical aspects that induce PPD in a group. It illuminates the relationship between risk variables and mental health outcomes without long-term follow-up.

Study Setting: To collect and reflect all data, the study was done in a hospital and community setting. The metropolitan tertiary care hospital treats postpartum mothers from various backgrounds. Community included maternal health clinics and outreach in the nearby urban region. The study's dual setting allowed women who had given birth in hospitals and used community healthcare institutions for postpartum follow-up to participate. A community-based component was needed to collect data from underprivileged communities that may not have easy access to hospital mental health treatments.

Study Population: The study population included women who gave birth within six weeks to six months. According to research, PPD risk is highest during this time.

Inclusion Criteria

- Women aged 18 years and older.
- Women within six weeks to six months postpartum.
- Women who could provide informed consent and were willing to participate.

Exclusion Criteria

- Women with severe medical conditions, such as postpartum hemorrhage or preeclampsia, that could independently affect mental health outcomes unrelated to PPD.
- Women with pre-existing psychiatric conditions, such as bipolar disorder or schizophrenia, to avoid confounding the results related to PPD.

Sample Size: Fifty people were involved in the study. Sample size was determined by study time, resources, and logistics. The sample size was small, but it was sufficient to provide early insights regarding PPD prevalence and risk variables in the current scenario. More research with larger samples can confirm trends and linkages.

Data Collection Tools: EPDS is a popular and confirmed PPD screening method. Participants score themselves on a four-point scale from zero to thirty on ten items. To follow WHO guidelines for diverse groups, this study used a cut-off score of ≥ 10 to indicate PPD likelihood. This test was chosen for its reliability, convenience of use, and ability to measure emotional and cognitive PPD.

Participants' demographics, socioeconomic status, obstetric history, and postpartum depression (PPD) risk factors were systematically recorded using a standard questionnaire. A woman's age, marital status, education, job, number of children, nursing habits, and mental health history were crucial. This instrument provided background and helped identify PPD risk variable connections in the EPDS.

Ethical Considerations: This study's ethical compliance prioritised participant rights, dignity, and safety. The institutional ethics committee approved the study before it began. A thorough examination of the study protocol's aims, methodologies, and consent processes guaranteed ethical compliance. Pre-data collection informed consent

was obtained from all subjects. The study's goals, procedures, benefits, and risks were thoroughly described to participants. They were informed that their participation was voluntary and that they could stop at any time without losing their healthcare. Data anonymisation and secure storage maintained confidentiality.

Data Analysis: Methodical statistical analysis yielded valuable insights from the data. SPSS 26 was used to enter and analyse data. SPSS was chosen for its descriptive and inferential statistics skills and usability. Individual demographic data and EPDS scores were summarised using descriptive statistics including means, standard deviations, frequencies, and percentages. These figures demonstrated the prevalence of PPD in the research population and presented a sample overview.

Logistic regression and chi-square tests were performed to examine PPD-risk variable relationships. Age, socioeconomic level, and delivery technique were examined for PPD factors. The results were supplied with p-values and confidence ranges to assess link validity and trustworthiness. Tables and graphs were used to make the results easier to understand. Tables showed risk factor distribution and demographic data, and graphs showed PPD prevalence and its relationship to relevant variables.

Results

Demographic Characteristics of Participants: The demographic characteristics of the 50 participants are summarized in Table 1. The study population represented a diverse group of postpartum women in terms of age, education, income level, and marital status.

Table 1: Demographic Characteristics of Study Participants

Characteristic	Category	Frequency (n)	Percentage (%)
Age (years)	18–25	18	36.0%
	26–30	22	44.0%
	31–35	10	20.0%
Education	No formal education	6	12.0%
	Secondary	15	30.0%
	Higher secondary	18	36.0%
	Graduate or above	11	22.0%
Income Level	< ₹20,000/month	22	44.0%
	₹20,001–₹40,000	16	32.0%
	> ₹40,000	12	24.0%
Marital Status	Married	47	94.0%
	Separated/Widowed	3	6.0%

Participants were mostly 26–30 years old (44%). At least 66% of participants had graduated from secondary school, whereas 12% had not. The bulk of participants (44%), with a monthly household income below ₹20,000, were classified as low-income. Most participants (94%) were married, with few experiencing separation or widowhood.

Prevalence of Postpartum Depression: The prevalence of PPD was assessed using the Edinburgh Postnatal Depression Scale (EPDS). A score of ≥ 10 indicated probable depression.

Table 2: Prevalence of Postpartum Depression

EPDS Score Range	Category	Frequency (n)	Percentage (%)
0–9	No Depression	31	62.0%
≥ 10	Probable Depression	19	38.0%

Among the 50 participants, 38% scored ≥ 10 on the EPDS, indicating probable PPD.

The remaining 62% did not exhibit significant depressive symptoms based on the EPDS criteria.

Analysis of Risk Factors: The analysis explored the relationship between PPD and various risk factors, such as economic status, number of children, and social support.

Table 3: Correlation between Risk Factors and PPD

Risk Factor	Category	Prevalence of PPD (n)	Percentage (%)
Economic Status	< ₹20,000/month	14	63.6%
	₹20,001–₹40,000	4	25.0%
	> ₹40,000	1	8.3%
Number of Children	1	8	30.8%
	2 or more	11	44.0%
Support System	Adequate	6	20.0%
	Inadequate	13	61.9%

A significant correlation was observed between low income (< ₹20,000/month) and PPD, with 63.6% of participants in this group showing depressive symptoms. Higher income levels were associated with a lower prevalence of PPD. Women with two or more children had a higher prevalence of PPD (44%) compared to women with one child (30.8%). This finding suggests that increased caregiving responsibilities may contribute to higher stress levels. Participants reporting inadequate social support exhibited a significantly higher prevalence of PPD (61.9%) compared to those with adequate support (20%). This highlights the protective role of a strong support system.

Discussion

Comparison with Previous Studies: This study, like others on postpartum depression (PPD), sheds insight on its occurrence and risk factors in low-income metropolitan regions. The study indicated that 38% of postpartum mothers had PPD, which is consistent with global estimates of 10% to 50%, depending on cultural and socioeconomic circumstances.¹¹ observed a prevalence of 22% in South India, slightly lower than our data, but other research in similar settings found greater rates. This may be because this study is set in urban slums, where socioeconomic pressures, chronic stress, and poor living conditions are more common. Global study like¹² highlighted social isolation, financial instability, and multi-parity as risk factors. Our research confirms that these factors aggravate PPD. This study's strong link between economic stress and PPD is consistent with earlier research in low-resource countries, particularly Southeast Asia and Africa. According to earlier studies, poverty increases psychological susceptibility, and 63.6% of women in the lowest income band experienced PPD. Poor social support was linked to depressed symptoms in 61.9% of individuals, emphasising its importance in this study. Similar findings in Bangladesh and Ethiopia suggest that strong social networks reduce mothers' mental health risks. Studies in Pakistan and Brazil confirm that care obligations and low resources considerably enhance postpartum depression in moms with two or more children.

Interpretation of Results: This study found that socioeconomic and psychosocial factors affect PPD outcomes. Poverty multiplies psychological well-being, and economic instability was the biggest predictor of PPD. Financial insecurity makes it difficult to access mental health services and worsens postpartum depression. Low-income women may be more vulnerable due to malnutrition and family problems. Social isolation, cultural stigmas, and city living leave many women without the assistance they need to manage postpartum depression and anxiety. The study found that multi-parity increased postpartum sadness. Caring for two or more children quickly drains moms emotionally and financially. This tendency was more common among people who struggled to balance child care and housekeeping. These interrelated determinants emphasise

the need for comprehensive treatments that offer mothers with financial and emotional assistance.

Strengths of the Study: This study adds to our understanding of PPD in low-income metropolitan regions in several ways. First, it focusses on a specific cultural and social context to show how urban slum mothers struggle after giving birth. We may understand how congestion, poverty, and lack of healthcare affect moms' mental health with this concentrated strategy. Another benefit is using the Edinburgh Postnatal Depression Scale (EPDS), a validated instrument that ensures consistency and comparability with global studies. This study also illuminates psychosocial and socioeconomic aspects, providing healthcare clinicians and lawmakers with useful information. Identifying social support and economic instability as risk factors allows for targeted therapies that can dramatically reduce PPD. Community-based programs that focus economic empowerment and social support could greatly improve maternal mental health.

Limitations

Despite its strengths, this study has serious drawbacks. Only 50 participants were sampled, hence the results cannot be generalised. Subgroup analyses, such as age or cultural background disparities in PPD prevalence, and a larger sample size might reinforce the findings and make the study more applicable beyond an urban context. Future research with larger and more varied populations is needed to confirm and expand these findings. Constrained by the single-center design, the results may not apply to other scenarios.

The study only examined one urban slum, making it hard to apply its findings to postpartum moms from other socioeconomic backgrounds. To better understand PPD's causes and prevalence, multi-center research in urban and rural areas are needed. Self-reported data on social support and economic status may lead to reporting bias. Finally, the study doesn't consider PPD symptom severity or development throughout pregnancy. Longitudinal investigations of PPD trajectories during pregnancy and postpartum would assist explain how depression symptoms emerge and how they affect mother and baby outcomes.

Conclusion

This study helps explain postpartum depression (PPD) in low-income urban mothers. Multi-parity, economic instability, and lack of social support are the main risk factors for postpartum depression, which affects 38% of women. These findings support global studies and show that socioeconomic factors affect mothers' mental health. Poverty, bad housing, and social isolation harm mothers' mental health, according to the study, which reveals financial instability is the strongest indication of postpartum depression. This affects public health efforts greatly. A comprehensive PPD plan includes mental health care and socioeconomic improvement. Community efforts to improve mental health awareness, strengthen

social networks, and provide financial help can reduce PPD. Lawmakers and healthcare providers should build community-based support networks including peer support groups and easily accessible mental health treatments, especially in neglected urban areas. Future studies should examine PPD incidence and causes in different socioeconomic and cultural contexts. This requires larger sample numbers and multi-center methods. Longitudinal studies are ideal for tracking PPD and treatment success. More research is needed on community-based mental health services and postpartum depression's effects on mother-infant attachment and child development. If these information gaps are resolved, more targeted postpartum depression treatments can be developed.

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