OPEN ACCESS

ORIGINAL ARTICLE *Volume 14 (Issue 4), 2025*

PAKISTAN JOURNAL OF MEDICINE & DENTISTRY

Prevalence of Postpartum Depression and Associated Risk Factors in Women Visiting Obstetric Clinics

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ABSTRACT

Background: Postpartum depression (PPD) is a widespread mental health disorder that is commonly underdiagnosed and may have detrimental consequences on maternal functioning, infant development, and family relations. It is determined by a set of socio-demographic, obstetric, and psychosocial factors, especially in low-resource settings where systematic screening is restricted. This study aimed to establish the PPD prevalence and to identify socio-demographic, obstetric, and psychosocial determinants of PPD among postpartum women.

Methods: A cross-sectional study was conducted between June and December 2025 at the Obstetric Outpatient Department of a tertiary care hospital. 200 postpartum women were selected through consecutive non-probability sampling. Social-demographic, obstetric, and psychosocial data were obtained using structured interviews. The Edinburgh Postnatal Depression Scale (EPDS) was applied, and a score of ≥13 was indicative of PPD. SPSS v26.0 was used for statistical analysis, using chi-square tests and independent t-tests. p-value <0.05 was defined as significant.

Results: PPD prevalence was 59 (29.5%). Major determinants were unintended pregnancy (41 (69.5%) vs. 50 (35.5%); p<0.001), caesarean section (37 (62.7%) vs. 64 (45.4%); p=0.030), depression history (19 (32.2%) vs. 9 (6.4%); p<0.001), low income (31 (52.5%) vs. 41 (29.1%); p=0.001), and poor spouse support (38 (64.4%) vs 32 (22.7%); p <0.001). The effect of employment status (p=0.10) and parity (p=0.86) was not significant.

Conclusion: The results indicated a high PPD frequency among women in obstetric clinics, and both clinical and psychosocial factors contribute to it. Postpartum care should include routine screening and integrated mental health interventions to improve maternal outcomes.

Keywords: Depression, Postpartum, Domestic Violence, Cesarean Section, Pregnancy, Unplanned, Postpartum Period.

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How to cite: Irshad S, Ambareen A, Khan MTU, Rasool F, Khalid B, Aneesa Khalid. Prevalence of Postpartum Depression and Associated Risk Factors in Women Visiting Obstetric Clinics. Pak J Med Dent. 2025 September ;14(4): A-B. Doi: https://doi.org/10.36283/ziun-pjmd14-4/082.

Received: Sun, August 31, 2025 **Accepted:** Sun, September 28, 2025**. Published:** Mon, September 29, 2025

INTRODUCTION

Childbirth is a revolutionary experience that profoundly affects the psychological health and emotional resilience of women, impacting their well-being years after childbirth [1]. Although most women report that childbirth is an empowering and satisfying experience, a considerable percentage experience emotional distress [2]. According to global studies, about one-third of women report negative or traumatic childbirth experiences, with implications later impacting maternal mental health [3]. These negative events are highly correlated with postpartum depression (PPD), impaired maternal-child bonding, and fear of subsequent childbearing [4]. PPD is one of the most prevalent, disabling postnatal complications of birth, exhibiting persistent sadness, anxiety, and diminished maternal functioning among 10-20% of women worldwide [5].

Various contributing factors, including obstetric complications, psychosocial strains, and lack of emotional or physical support, have emerged as central to the experience of PPD [6]. The interpersonal setting around labor, including respectful communication and perceived support, is also a key determinant of PPD outcomes [7]. Cesarean delivery, prolonged labor, insufficient pain management, and a non-supportive spouse are often associated with negative consequences [8].

Despite these associations, the combined effect of demographic, clinical, and psychosocial factors on maternal psychological recovery have not been comprehensively explored [9]. Comprehensive assessment in outpatient obstetric settings may facilitate early detection of high-risk cases to allow timely mental health interventions according to the multifaceted needs of women [10]. Interventions that focus on social support, pregnancy planning, and preexisting mental health disorders can optimize the postpartum experience and decrease extended adverse responses to families.

The purpose of the study was to determine the prevalence of PPD among women in obstetric clinics. It also assessed the collective influence of demographic, obstetric, and psychosocial factors on PPD occurrence.

METHODS

The purpose of this cross-sectional study was to estimate the prevalence of postpartum depression and to evaluate the cumulative impact of socio-demographic, obstetric, and psychosocial determinants over four months (June-October 2023) at the Departments of Anatomy, Obstetric Outpatient Department, LUMHS, and KTH (Ref: A.D/EC/223). Consecutive non-probability sampling was used to recruit participants. The participants were approached within six weeks after delivery, and written informed consent was obtained before enrollment. A sample of 200 women was determined using OpenEpi version 3.0.0 (released 2013, Atlanta, GA, USA) based on a projected

30% PPD prevalence, a 95% confidence level, and a margin of error of 5% [11]. The inclusion criteria were women 18 years or older, a recent singleton live birth, medically stable, and the ability to answer questions in the local language. Females were excluded in case of stillbirth, severe postpartum complications, prior psychiatric diagnosis, and current use of antidepressants.

The participants were not separated into intervention groups; however, the participants were stratified by PPD status. The exposure factors included obstetric history, psychosocial stress, and socio-demographics. Questionnaires were employed with the assistance of a trained female interviewer to guarantee compliance with self-report tools.

Depressive symptoms were measured by the Edinburgh Postnatal Depression Scale (EPDS), where a score of 13 and above was the cutoff score of possible PPD. Socio-demographic and clinical factors were also determined using a structured questionnaire. Both tools were validated and converted into the local language.

SPSS version 26.0 (released 2019, IBM Corp., Armonk, NY) was used to analyze data. The relationship between the PPD and the independent variables was examined using Chi-square tests for categorical variables and independent t-tests for continuous variables. Statistical significance was defined as a p-value < 0.05.

RESULTS

Table 1: Sociodemographic Characteristics

Variable	Category	PPD Present (n = 59)	PPD Absent (n = 141)	Test Used	Test Value	p-value
Age (years)	Mean ± SD	26.1 ± 5.3	28.9 ± 4.7	t-test	t = 2.86	0.005*
Education	No formal education	14 (23.7%)	10 (7.1%)	Chi-square	χ^2 = 13.28	<0.001*
	Primary/Secondary	30 (50.8%)	80 (56.7%)			
	Tertiary	15 (25.4%)	51 (36.2%)			
Employment Status	Employed	11 (18.6%)	42 (29.8%)	Chi-square	χ^2 = 2.65	0.10
	Unemployed	48 (81.4%)	99 (70.2%)			
Monthly Household Income	<20,000 PKR	31 (52.5%)	41 (29.1%)	Chi-square	χ^2 = 10.94	0.001*
	≥20,000 PKR	28 (47.5%)	100 (70.9%)			

*n = Number of Participants, EPDS = Edinburgh Postnatal Depression Scale, SD = Standard Deviation, % = Percentage, * = Significance at p<0.05*

This study evaluated 200 postpartum women to determine the prevalence of PPD and its risk factors. Psychosocial and obstetric factors were significantly associated with PPD. The major issues were unintended pregnancy, cesarean section, lack of support, and background mental health. These findings suggest the requirement of postpartum screening for mental health. **Table 1** indicates the sociodemographic characteristics associated with PPD.

Table 2: Clinical and Obstetric Factors

Variable	Category	PPD Present (n = 59)	PPD Absent (n = 141)	Test Used	Test Value	p-value
Mode of Delivery	Vaginal	22 (37.3%)	77 (54.6%)	Chi-square	χ^2 = 4.68	0.030*
	Cesarean	37 (62.7%)	64 (45.4%)			
Type of Pregnancy	Planned	18 (30.5%)	91 (64.5%)	Chi-square	χ^2 = 18.23	<0.001*
	Unplanned	41 (69.5%)	50 (35.5%)			
Parity	Primiparous	33 (55.9%)	81 (57.4%)	Chi-square	χ^2 = 0.03	0.86
	Multiparous	26 (44.1%)	60 (42.6%)			
History of Depression	Yes	19 (32.2%)	9 (6.4%)	Chi-square	χ^2 = 22.55	<0.001*
	No	40 (67.8%)	132 (93.6%)			

*n = Number of Participants, % = Percentage, * = Significance at p<0.05*

A significant relationship between age and PPD (26.1 vs. 28.9 years, p = 0.005) was observed. PPD was significantly prevalent among women with no education (p < 0.001) and had a monthly income of less than 20,000 PKR (p = 0.001). The PPD was not significantly related to employment status (p = 0.10). These results suggest that the primary risk factors are age, education, and income. Clinical and obstetric determinants of PPD are presented in **Table 2.**

Table 3: Psychosocial Factors

Variable	Category	PPD Present (n = 59)	PPD Absent (n = 141)	Test Used	Test Value	p-value
Spousal Support	Adequate	21 (35.6%)	109 (77.3%)	Chi-square	χ^2 = 29.12	<0.001*
	Inadequate	38 (64.4%)	32 (22.7%)			
Domestic Violence	Yes	14 (23.7%)	7 (5.0%)	Chi-square	χ^2 = 14.78	<0.001*
	No	45 (76.3%)	134 (95.0%)			

Social Support from Family	Adequate	26 (44.1%)	103 (73.0%)	Chi-square	χ^2 = 13.09	<0.001*
	Inadequate	33 (55.9%)	38 (27.0%)			
Financial Stress	Present	39 (66.1%)	49 (34.8%)	Chi-square	χ^2 = 13.77	<0.001*
	Absent	20 (33.9%)	92 (65.2%)			

*n = Number of Participants, % = Percentage, * = Significance at p<0.05*

PPD demonstrated a high prevalence for cesarean delivery (37 (62.7%) vs 64 (45.4%); p = 0.030). and unplanned pregnancy (41 (69.5%) vs. 50 (35.5%), p < 0.001). Parity was not significantly associated (p = 0.86). Women with PPD had a higher incidence of depressive history (19 (32.2%) vs. 9 (6.4%), p < 0.001). These findings emphasize unwanted pregnancy, cesarean section, and pre-existing depression as critical risk factors. Psychosocial factors associated with PPD are given in **Table 3**.

Poor spousal support occurred in 38 (64.4%) of the women with PPD (p < 0.001). 14 (23.7%) of women with PPD reported domestic violence (p < 0.001). Family support was poor in 33 (55.9% vs. 38 (27.0%); p < 0.001). 39 (66.1%) of PPD women subsequently experienced financial stress versus 49 (34.8%) without (p < 0.001). These findings support those psychosocial factors are a prime predictor of postpartum depression.

DISCUSSION

This study aimed to evaluate the role of socio-demographic, obstetric, and psychosocial factors of PPD and their impact on maternal mental health outcomes in women attending obstetrics units. The results support that both psychosocial determinants and clinical conditions play an important role in developing PPD.

The findings indicated that low education and low-income levels were linked to a higher prevalence of PPD. Women with poor education might not have access to mental health services and antenatal information, which restricts coping options during postpartum adaptation [12]. An underlying risk factor is financial stress, which has been demonstrated to increase psychological burden and diminish resilience in the postpartum period [13]. Earlier maternal age also developed a strong correlation with depression, possibly because of inexperience and less emotional readiness [14].

Obstetric results revealed a relationship between postpartum depression, cesarean deliveries, and unwanted pregnancy, aligning with studies demonstrating that cesarean delivery may cause a loss of control, physical discomfort, and healing problems, which lead to mental distress [15]. Similarly, unwanted pregnancies often correlate with emotional detachment and unpreparedness, which increase depressive symptoms [16]. Pre-existing depression history appeared as a significant predictor

of postpartum depression, consistent with literature confirming that pre-existing psychiatric history is a major determinant of postpartum mental well-being [17].

Poor spousal support, family neglect, and exposure to domestic violence were significantly related to depression. This is consistent with studies, which indicated that the absence of emotional support increases stress and lowers adaptation [18]. Good family support has been found to reduce depression and enhance emotional outcomes during the postpartum period [19,20]. In contrast, perinatal psychological disorders were strongly associated with domestic violence [21]. However, employment status did not have a significant correlation in this population, unlike other studies, which found that postnatal employment may maintain psychological balance [22].

These results correlate with global literature; however, some discrepancies. For instance, studies in well-resourced health systems have not consistently linked cesarean birth to depression due to comprehensive perinatal support [23]. These differences exist due to cultural norms, healthcare access, and patient expectations [24,25].

The study has limitations, including its cross-sectional design, which restricts causal interpretations. Self-reported information may introduce recall and social desirability bias. Other confounding variables, e.g., thyroid status and sleep disorders, were also not measured. Future studies should consider longitudinal, multi-center designs and include both biological and psychosocial variables to guide targeted interventions and preventive care plans.

CONCLUSION

This study discovered that PPD was strongly linked to unintended pregnancy, cesarean section, low income, and inadequate psychosocial support. It was found that both clinical and emotional stressors exert significant effects on maternal mental health. These findings suggest that postpartum depression is a multifaceted disorder that needs a comprehensive approach.

These findings indicate the importance of postpartum mental health screening as part of regular care. Targeted support and early intervention may improve maternal outcomes.

LIST OF ABBREVIATIONS

PPD Postpartum Depression

EPDS Edinburgh Postnatal Depression Scale

ACKNOWLEDGEMENT

None.

FUNDING

None

CONFLICT OF INTEREST

None

ETHICAL APPROVAL

The purpose of this cross-sectional study was to estimate the prevalence of postpartum depression and to evaluate the cumulative impact of socio-demographic, obstetric, and psychosocial determinants over four months (June-October 2023) at the Departments of Anatomy, Obstetric Outpatient Department, LUMHS, and KTH (Ref: A.D/EC/223).

AUTHORS' CONTRIBUTION

All participated equally as per ICMJE.

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