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A COMPARATIVE STUDY OF POSTPARTUM DEPRESSION IN PRIMIPAROUS AND MULTIPAROUS MOTHERS

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Abstract

Background: *Postpartum depression (PPD) is a common mental health condition affecting mothers after childbirth, with implications for maternal and child well-being.*
Objective: *To compare the prevalence and severity of PDD between primiparous and multiparous mothers using the Edinburgh Postnatal Depression Scale (EPDS).*
Methodology: *A cross-sectional study was conducted from May to July 2025 at multiple care centers in Karachi. A total of 240 postpartum women aged 18–45 years within one year of delivery were enrolled, including 120 primiparous and 120 multiparous mothers. Data were collected using a structured questionnaire capturing sociodemographic, obstetric, and psychosocial factors, along with EPDS scores. Descriptive statistics, chi-square tests, independent t-tests, and logistic regression analysis were performed to assess PPD prevalence, severity, and associated predictors. A p-value <0.05 was considered statistically significant.*
Results: *Among 240 participants, 32 primiparous mothers (26.67%) and 45 multiparous mothers (37.50%) screened positive for PPD ($\chi^2 = 3.12$, $p = 0.077$). Severity analysis showed that 14 primiparous mothers (11.67%) and 20 multiparous mothers (16.67%) had severe depression, with a higher proportion of moderate-to-severe PPD in multiparous women. Significant predictors of PPD included multiparity (AOR 1.68, $p = 0.041$), inadequate spousal support (AOR 2.86, $p < 0.001$), inadequate family support (AOR 2.35, $p = 0.002$), past depression (AOR 3.42, $p < 0.001$), non-breastfeeding (AOR 2.18, $p = 0.034$), lack of PPD awareness (AOR 1.79, $p = 0.046$), and presence of suicidal thoughts (AOR 4.12, $p < 0.001$).*

Conclusion: *PDD is prevalent among both primiparous and multiparous mothers, with psychosocial support, prior depression, and awareness playing key roles*

INTRODUCTION

A common and crippling mental health disorder that affects women after giving birth, postpartum depression (PPD) has long-lasting effects on the development of the child, the mother's well-being, and family connections [1,2]. PPD is characterized by enduring sorrow, anxiety, irritability, exhaustion, and sleep and food disorders that may last for months if treatment is not received, in contrast to the temporary "baby blues," which usually go away within two weeks after birth [3]. Though the real frequency may be greater in low- and middle-income countries owing to underreporting, cultural shame, and poor access to mental health care, PPD is thought to affect 10–20% of women worldwide. Therefore, early detection and treatment are essential to lessening its impact [4,5].

Parity status has a significant impact on the experience of motherhood [6]. Primiparous women who are giving birth for the first time often face particular psychological difficulties, including trouble integrating into motherhood, increased worry about caring for the baby, and increased susceptibility to social isolation [7,8]. However, despite their greater experience, multiparous moms may face additional stresses such as role overload, financial pressure, and the challenges of caring for several children [9,10]. The risk, development, and severity of PPD may be significantly influenced by parity, according to these unique psychological and physiological stresses [11].

One of the most popular, validated, and trustworthy screening instruments for identifying PPD in a variety of groups is the Edinburgh Postnatal Depression Scale (EPDS) [12]. Findings from earlier studies contrasting primiparous and multiparous moms, however, are still contradictory. While some research show that adjustment issues put first-time moms at higher risk, others emphasize that the additional caring and financial obligations of multiparity may make women more vulnerable. This discrepancy emphasizes the need of further comparative studies, especially in nations like Pakistan where local data is still hard to come by. In order to improve maternal mental health outcomes, closing this gap is crucial for creating context-specific screening, preventative measures, and supportive treatments.

Objective

To compare the prevalence and severity of PDD between primiparous and multiparous mothers within one year of delivery using the EPDS.

Methodology

Study Design and Setting

A cross- sectional research was carried out over the course of three months, from May to July 2025, at many care facilities in Karachi. Comparing the frequency and severity of PDD in primiparous and multiparous moms was the goal of the research.

Inclusion and Exclusion Criteria

Women between the ages of 18 and 45 who had given birth within a year were eligible to participate. To minimize confounding and guarantee an accurate evaluation of PDD, women who had previously had a mental illness, were now using antidepressant medication, or were hesitant to provide informed permission were not included.

Sample Size

Convenience sampling was used to choose 240 postpartum women for the research based on their availability and willingness to take part throughout the study period. The sample size was deemed enough for assessing the prevalence and severity of PDD, and this method guaranteed the inclusion of both primiparous and multiparous women.

Data Collection

The EPDS, a validated test for screening and determining the severity of PPD, and sociodemographic and obstetric factors, such as mother age, education, job status, parity, and method of delivery, were the two components of a structured questionnaire that was used to collect the data. Face-to-face interviews were done by trained research assistants to guarantee the quality and completeness of the replies.

Statistical Analysis

Data analysis was done using SPSS (version 26). The characteristics of the participants were summarized using descriptive statistics, which include means, standard deviations, frequencies, and percentages. The standard EPDS cutoff scores were used to calculate the prevalence of PPD. Using independent t-tests for continuous variables and chi-square tests for categorical data, the prevalence and severity of PPD in primiparous and multiparous women were compared. In order to account for possible confounders such mother age, education, work position, and socioeconomic background, logistic regression analysis was also used. Statistical significance was defined as a p-value of less than 0.05.

Ethical Approval

The study protocol was reviewed and approved by the Institutional Review Board (IRB) of [Insert University/Hospital Name]. Written informed consent was obtained from all participants, and confidentiality of all data was strictly maintained.

Results

The study included 240 postpartum women, evenly divided between primiparous and multiparous mothers (table 1). Primiparous mothers were younger (mean age 26.30 ± 4.80 years) compared to multiparous mothers (31.70 ± 5.20 years, $p < 0.001$), with the majority aged 18–25 years (48.33% vs. 18.33%). Education and employment status did not significantly differ between groups. Vaginal delivery was slightly more common in multiparous women (67.50% vs. 60.00%), though not statistically significant ($p = 0.231$).

Table 1: Sociodemographic and Obstetric Characteristics of Participants (N = 240)

Characteristic	Category	Primiparous (n = 120)	Multiparous (n = 120)	Test Statistic (p-value)
Age (years)	Mean ± SD	26.30 ± 4.80	31.70 ± 5.20	$t = 7.52$, $p < 0.001$
Age Group (years)	18–25	58 (48.33%)	22 (18.33%)	$\chi^2 = 26.75$, $p < 0.001$
	26–35	49 (40.83%)	68 (56.67%)	
	36–45	13 (10.83%)	30 (25.00%)	
Education Level	No formal education	21 (17.50%)	33 (27.50%)	$\chi^2 = 3.90$, $p = 0.142$
	Secondary education	52 (43.33%)	49 (40.83%)	
	Graduate & above	47 (39.17%)	38 (31.67%)	
Employment Status	Employed	36 (30.00%)	24 (20.00%)	$\chi^2 = 3.48$, $p = 0.062$
	Unemployed / Housewife	84 (70.00%)	96 (80.00%)	
Mode of Delivery	Vaginal	72 (60.00%)	81 (67.50%)	$\chi^2 = 1.44$, $p = 0.231$
	Cesarean section	48 (40.00%)	39 (32.50%)	

Note: Continuous variable compared using independent t-test; categorical variables compared using χ^2 test.

PDD (EPDS ≥13) was observed in 26.67% of primiparous and 37.50% of multiparous mothers, with no statistically significant difference between groups ($\chi^2 = 3.12$, $p = 0.077$), suggesting a trend toward higher prevalence among multiparous women (table 2).

Table 2: Prevalence of Postpartum Depression (PPD) by Parity – Chi-square Test

PPD Status (EPDS Cutoff ≥13)	Primiparous (n = 120)	Multiparous (n = 120)	χ^2 (p-value)
Depressed	32 (26.67%)	45 (37.50%)	3.12 (0.077)
Not Depressed	88 (73.33%)	75 (62.50%)	

Among primiparous mothers, 65.83% had no depression, 7.50% mild, 15.00% moderate, and 11.67% severe PPD (figure 1). In multiparous mothers, 55.00% were without depression, 7.50% mild, 20.83% moderate, and 16.67% severe, indicating a higher proportion of moderate-to-severe PPD in multiparous women.

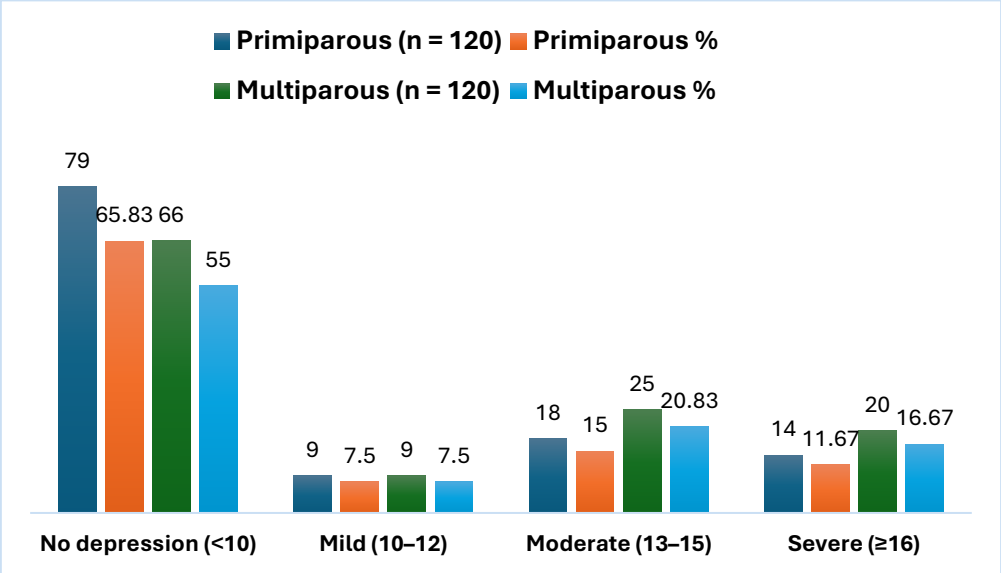


Figure 1: Severity of Postpartum Depression by Parity

Significant associations with PPD included number of children (33.33% one child vs. 66.67% two children, p = 0.002), months since delivery (15.83% at 1 month, 15.42% at 2 months, 27.92% at 3 months, 40.83% at 4 months or more, p = 0.002), spousal support (69.17% always, 17.50% sometimes, 13.33% rarely/never, p < 0.001), family support (61.67% always, 23.33% sometimes, 15.00% rarely/never, p < 0.001), past depression (27.92% yes, 72.08% no, p < 0.001), breastfeeding status (48.75% exclusive, 48.75% partial, 2.50% not breastfeeding, p < 0.001), suicidal thoughts (69.17% none, 20.00% mild, 6.67% moderate, 4.17% severe, p < 0.001), awareness of PPD (75.00% yes, 25.00% no, p < 0.001), and willingness to inform others (95.83% yes, 4.17% no, p < 0.001). Pregnancy/delivery complications were not significant (50.00% yes vs. 50.00% no, p = 0.889), shown in table 3.

Table 3. Frequency Distribution of Key Variables with χ^2 and p-values (N = 240) – Chi-square Tests

Variable	Categories	n	%	χ^2	df	p-value
Number of children	1 child	80	33.33%	9.88	1	0.002
	2 children	160	66.67%			
Months since recent delivery	1 month	38	15.83%	14.92	3	0.002
	2 months	37	15.42%			
	3 months	67	27.92%			
	4 months	98	40.83%			
Complications in pregnancy/delivery	Yes	120	50.00%	0.02	1	0.889
	No	120	50.00%			
Spousal support	Always	166	69.17%	212.12	2	<0.001
	Sometimes	42	17.50%			
	Rarely/never	32	13.33%			

Family support	Always	148	61.67%	139.50	2	<0.001
	Sometimes	56	23.33%			
	Rarely/never	36	15.00%			
Past depression	Yes	67	27.92%	40.39	1	<0.001
	No	173	72.08%			
Currently breastfeeding	Yes exclusively	117	48.75%	94.25	2	<0.001
	Partial	117	48.75%			
	Not breastfeeding	6	2.50%			
Suicidal thoughts (Q21)	None	166	69.17%	352.71	3	<0.001
	Mild	48	20.00%			
	Moderate	16	6.67%			
	Severe	10	4.17%			
Awareness of PPD before survey	Yes	180	75.00%	51.00	1	<0.001
	No	60	25.00%			
Willing to inform others	Yes	230	95.83%	173.26	1	<0.001
	No	10	4.17%			

Most participants reported positive affect and coping, with 56.25% able to laugh normally (Q12) and 52.08% looking forward to things (Q13), shown in table 4. Notable symptoms included self-blame (42.50% no, 25.00% sometimes, Q14), anxiety (33.33% sometimes, Q15), sleep disturbances (54.17% sometimes, Q18), sadness (29.17% sometimes, Q19), and occasional crying (37.50%, Q20). Thoughts of self-harm were rare, with 77.08% reporting none (Q21). All item distributions were statistically significant ($p < 0.001$).

Table 4. Distribution of EPDS Items (Q12–Q21) Among Participants (N = 240) – Chi-square Tests

EPDS Item	Response Category	n	%	χ^2	df	p-value
Q12: Laugh/funny side	As much as always	135	56.25%	142.77	3	<0.001
	Not quite so much	74	30.83%			
	Definitely not so much	31	12.92%			
Q13: Look forward/enjoyment	As much as always	125	52.08%	124.15	3	<0.001
	Not quite so much	82	34.17%			
	Definitely not so much	33	13.75%			
Q14: Self blame	No	102	42.50%	52.03	3	<0.001
	Rarely	60	25.00%			
	Sometimes	60	25.00%			
	Most of the time	18	7.50%			
Q15: Anxious/worried	No	90	37.50%	47.86	3	<0.001
	Rarely	50	20.83%			
	Sometimes	80	33.33%			
	Most of the time	20	8.33%			
Q16: Scared/panicked	No	120	50.00%	84.19	3	<0.001
	Rarely	55	22.92%			
	Sometimes	50	20.83%			
	Most of the time	15	6.25%			
Q17: Overwhelmed	No	80	33.33%	60.74	3	<0.001
	Mostly cope	105	43.75%			
	Sometimes overwhelmed	40	16.67%			
	Most of the time	15	6.25%			
Q18: Trouble sleeping	No	90	37.50%	68.09	2	<0.001
	Sometimes	130	54.17%			
	Most of the time	20	8.33%			

Q19: Sad/miserable	No	95	39.58%	51.68	3	<0.001
	Occasionally	60	25.00%			
	Sometimes	70	29.17%			
	Most of the time	15	6.25%			
Q20: Crying without reason	No	110	45.83%	109.36	3	<0.001
	Occasionally	90	37.50%			
	Frequently	40	16.67%			
Q21: Thoughts of self-harm	Never	185	77.08%	352.71	3	<0.001
	Sometimes	35	14.58%			
	Moderate	12	5.00%			
	Severe	8	3.33%			

Multiparity increased the odds of PPD (AOR 1.68, 95% CI 1.02–2.78, p = 0.041), shown in table 5. Significant predictors included no formal education (AOR 1.95, p = 0.021), inadequate spousal support (AOR 2.86, p < 0.001), inadequate family support (AOR 2.35, p = 0.002), past depression (AOR 3.42, p < 0.001), not breastfeeding (AOR 2.18, p = 0.034), lack of PPD awareness (AOR 1.79, p = 0.046), and presence of suicidal thoughts (AOR 4.12, p < 0.001). Other variables such as age, employment, mode of delivery, and pregnancy complications were not significant.

Table 5: Logistic Regression Analysis of Factors Associated with Postpartum Depression (N = 240)

Predictor Variable	Adjusted Odds Ratio (AOR)	95% CI	p-value	Significance
Multiparous (vs. Primiparous)	1.68	1.02–2.78	0.041	Significant
Age ≥30 years (vs. <30 years)	1.12	0.69–1.82	0.642	NS
No formal education (vs. ≥secondary)	1.95	1.11–3.42	0.021	Significant
Unemployed/Housewife (vs. Employed)	1.43	0.84–2.45	0.184	NS
Cesarean delivery (vs. Vaginal)	1.22	0.72–2.06	0.457	NS
Complications in pregnancy/delivery (Yes vs. No)	1.09	0.63–1.88	0.744	NS
Spousal support (Sometimes/Rarely vs. Always)	2.86	1.64–4.98	<0.001	Significant
Family support (Sometimes/Rarely vs. Always)	2.35	1.36–4.06	0.002	Significant
Past depression (Yes vs. No)	3.42	1.92–6.10	<0.001	Significant
Currently not breastfeeding (vs. Exclusive)	2.18	1.06–4.49	0.034	Significant
Awareness of PPD before survey (No vs. Yes)	1.79	1.01–3.16	0.046	Significant
Suicidal thoughts (Any vs. None)	4.12	2.12–7.98	<0.001	Significant

Discussion

The prevalence of PDD was 26.67% among primiparous moms and 37.50% among multiparous mothers in our research; however, the difference was not statistically significant ($\chi^2 = 3.12$, p = 0.077). This result is consistent with a prior research conducted in China that found no significant difference in PPD

prevalences between primiparous and multiparous women (OR = 1.016, 95% CI 0.642–1.608), with prevalences of 21.99% and 22.27%, respectively [13].

In terms of PPD severity, our research revealed that a greater percentage of multiparous women had moderate-to-severe PPD, with 11.67% of primiparous moms and 16.67% of multiparous mothers reporting severe depression. This pattern is in line with earlier research that found multiparous women had a greater frequency of moderate-to-severe PPD [14]. A greater prevalence among primiparous women is also shown by a prior research that found that the incidence rate of PPD was 32.6 per 1,000 person-years among primiparous women and 22.9 per 1,000 person-years among multiparous women [15].

Several significant predictors of PPD were found in our study: multiparity (AOR 1.68, 95% CI 1.02–2.78, $p = 0.041$); lack of formal education (AOR 1.95, $p = 0.021$); past depression (AOR 3.42, $p < 0.001$); not breastfeeding (AOR 2.18, $p = 0.034$); lack of PPD awareness (AOR 1.79, $p = 0.046$); presence of suicidal thoughts (AOR 4.12, $p < 0.001$). These results are in line with earlier research that showed a 4.63-fold increase in the likelihood of PPD due to a lack of social support [16].

The majority of primiparous moms were between the ages of 18 and 25 (48.33% vs. 18.33%), and their mean age was substantially lower than that of multiparous mothers (mean age 26.30 ± 4.80 years vs. 31.70 ± 5.20 years, $p < 0.001$). This is in line with the results of earlier research, which showed that primiparous women were more likely than multiparous women to suffer from anxiety, depression, and sorrow [17].

In terms of nursing, our research revealed that 2.50% of participants were not breastfeeding, 48.75% were partly breastfeeding, and 48.75% were completely breastfeeding. In line with other research that found breastfeeding was linked to a decreased risk of PPD [16], not breastfeeding was shown to be a significant predictor of PPD (AOR 2.18, $p = 0.034$).

Strengths and Limitations

The use of a validated screening tool (EPDS) to assess PDD, the collection of comprehensive sociodemographic, obstetric, and psychosocial data that enables multivariate analysis of predictors, and the relatively large sample size of 240 postpartum women with equal representation of primiparous and multiparous mothers are some of the study's strengths. Trained research assistants performed in-person interviews to guarantee the quality and completeness of the data. Limitations include the use of convenience sampling, which restricts generalizability to the larger population, the cross-sectional design, which precludes causal inference, and the dependence on self-reported measures, which may include social desirability bias or memory. Furthermore, since the research was limited to a few Karachi urban areas, it may not accurately represent differences in PPD incidence and risk factors at the rural or national levels.

Conclusion

According to the research, multiparous women are comparatively more at risk for PDD, which is frequent among moms. PPD risk is greatly influenced by social support, education, awareness, prior mental health history, and breastfeeding methods. In order to enhance maternal mental health, especially among high-risk populations, our findings highlight the need of comprehensive screening, psychosocial support treatments, and awareness campaigns.

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