

Sociodemographic, Hormonal and Marital Factors Associated with Postpartum Depression

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Abstract

Introduction with Objective: Postpartum mood disorders are the most common type of maternal morbidity following delivery and childbirth symbolizes for women a moment of extreme vulnerability to become mentally ill. The aim of this study was to assess the socio-demographic, hormonal and marital factors associated with postpartum depression. **Materials & Methods:** This Case control Study was carried out among 140 patients attending Outpatient and Inpatient department of Obstetrics and Gynecology of Dhaka Medical College and Hospital within the defined period from 1st January to 31st December 2022. The study was comprised of two groups, cases and controls. Patients attending outpatient and inpatient department of Obstetrics and Gynecology of Dhaka Medical College Hospital, who scored 10 or more than 10 in Edinburg Postpartum Depression Scale (EPDS) were considered as case group and who scored less than 10 in Edinburg Postpartum Depression Scale (EPDS) were considered as control group. All the data were compiled and sorted properly and the quantitative data was analyzed statistically by using Statistical Package for Social Science. **Result:** Most of the cases (n=62, 88.6%) had good understanding with their husbands in comparison of controls (n=69, 98.6%). Among the participants, who did not have good understanding with their husbands, number of cases 8(11.4%) were much higher than controls 1(1.4%) and the differences of the distributions were significant ($p < 0.05$). Regarding the experience of domestic violence, most of the cases 54(77.1%) did not experience any domestic violence compared to 65(92.9%) of controls. 16(22.9%) cases had experienced domestic violence, compared to 5(7.1%) of controls. Participants who experienced domestic violence had higher rate of developing depression than controls and the differences of the distributions were statistically significant ($p < 0.05$). **Conclusion:** Post partum depression prevention appears to be possible and successful. Good understanding with the husband, support from family members and domestic violence are the important factor for PPD. Finally, there is an increasing effort to incorporate routine primary care for pregnant and postpartum women that includes mental health screening, treatment or referral, and follow-up care.

Keywords: Socio-demographic factor, Hormonal factor, postpartum Depression, Edinburg Postpartum Depression Scale.

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Introduction:

Postpartum depression has a significant impact on children's cognitive, social and physical development in addition to having an immediate impact on mothers and posing long-term risks to their mental health¹. As a

result of mother absenteeism from work, early retirement and long-term unemployment, post-natal depression also results in large financial costs to the healthcare system and productivity losses². 13–19% of women have postpartum depression (PPD), a prevalent psychological condition³. PPD typically develops within the first four weeks following delivery⁴, giving the parents a great deal of distress and negatively affecting the healthy development of their children. Although the pathophysiology of PPD is unknown, numerous meta-analyses have amply proven psycho-social markers, such as depressive history, antenatal depression or anxiety, low social support, marital unhappiness and stressful life events⁵, whereas the impact of socioeconomic, obstetric and other factors varies by ethnicity and culture⁶. It is generally known that there is a higher chance of major mood problems developing during the postnatal period. 39.4% of PPD occurrences among Bangladeshi mothers occurred in the first year after giving birth in 2019⁷. In low-income settings, postpartum depression (PPD) is quite prevalent. According to earlier research done in rural Bangladesh, the prevalence of PPD among women ranges from 18% to 52%. The most common risk factors for PPD in rural Bangladeshi women

are stated to be poverty, inadequate nutrition, physical abuse and domestic disputes with a spouse or in-laws, stress, any sickness and prior mental problems. Previous studies have shown that young or adolescent mothers are more likely to experience depression than older mothers because they are frequently unprepared for the obligations and responsibilities of parenthood and are also more likely to exhibit poor parenting techniques⁸. The risk factors for postpartum depression must be accurately recognized in order for clinical or public health interventions to be effective; unfortunately, multiple researches have shown conflicting findings. It is necessary to accurately identify postpartum depression's risk factors in order to avoid it by clinical or public health intervention, however various research have yielded conflicting findings⁹.

Materials & Methods:

This Case control Study was carried out among 140 patients attending Outpatient and Inpatient department of Obstetrics and Gynecology of Dhaka Medical College and Hospital within the defined period from 1st January to 31st December 2022. The study was comprised of two groups, cases and controls. Patients attending outpatient and inpatient department of Obstetrics and Gynecology of Dhaka Medical College Hospital, who scored 10 or more than 10 in Edinburgh Postpartum Depression Scale (EPDS) were considered as case group and who scored less than 10 in Edinburgh Postpartum Depression Scale (EPDS) were considered as control group. The Protocol was approved by Protocol approval committee of NIPSOM. Ethical clearance of the study was obtained from the Institutional Review Board (IRB) of NIPSOM. Permission was taken from the Administrative Head of the Hospital authority to collect data. Purposive sampling was done according to availability of the patients. Informed written consent was taken from each Participant. Privacy and confidentiality was maintained strictly. The collected data were entered into the computer and analyzed by using SPSS (version 20.1) to assess the obstetric factors associated with postpartum depression. For identifying postnatal depression, Edinburgh Postnatal Depression Scale (EPDS) has been validated and exhibits good reliability and sensitivity. To diagnose postnatal depression, a total EPDS score threshold value of 10 or more is a helpful diagnostic criterion. This test will be done 4–6 weeks following delivery.

Results:

In this case, all of the participants were age matched (± 2 years). Majority 52 (74.3%) cases were in the age group 18-29 years and compared to 51(72.9%) in controls. The mean age of the cases was 25.86 ± 5.525 compared to 25.87 ± 4.739 in control group. Among the Cases, majority 34 (48.6%) had secondary level of education in comparison of 36(51.4%) in controls. Most of the cases resided in rural 37(52.9%), compared to 27(38.6%) of controls. Among the Occupations, majority of the Cases were housewives 62(88.6%) in comparison of 67 (95.7%) of Controls. Most of the participants' both cases 36(51.4%) and controls 37(52.9%) were between 11000-20000 monthly income range. Most of the cases 61(87.1%) got support from their families before delivery in comparison of 67(95.7%) of controls. 9 (12.9%) cases did not get any support compared to 3(4.3%) of controls. So, participants who did not get support from their families

before delivery were more prone to depression than others who got support from family members. But the differences of the distributions were not significant ($p > 0.05$). Most of the cases 49(70.0%) had adequate support from the families after delivery, in comparison of 60(85.7%) controls. 21(30.0%) of cases did not get support, compared to 10(14.3%) of controls and the differences of the distributions were not significant ($p > 0.05$) [Table I].

Table I: Sociodemographic factors associated with postpartum depression

Parameter	Cases	Controls	χ^2 -test
Age			
18-29	52(74.3)	51(72.9)	$p = .848$
30-36	18 (25.7)	19 (27.1)	$df = 1$
			$\chi^2 = .037$
Total	70 (100)	70 (100)	$t = .016$
Mean \pm SD	25.86 ± 5.525	25.87 ± 4.739	$df = 138$
			$p = .987$
Level of education			
Illiterate and Primary	25 (35.7)	16 (22.9)	$p = .403$
Secondary	34 (48.6)	36 (51.4)	(Fisher's Exact)
HSC and above	11 (15.7)	18 (25.7)	
Place of residence			
Rural	37(52.9)	27(38.6)	χ^2 -test
Urban	33(47.1)	43(61.4)	$p = .090$
			$df = 1$
			$\chi^2 = 2.878$
Occupations			
Housewives	62 (88.6)	67 (95.7)	$p = .195$
Business	3 (4.3)	2 (2.9)	(Fisher's Exact)
Service	5 (7.1)	1 (1.4)	
Level of monthly income			
≤ 10000 taka	12 (17.1)	7 (10.0)	$p = .435$
11000-20000taka	36 (51.4)	37 (52.9)	$df = 2$
21000-50000 taka	22 (31.4)	26 (37.1)	$\chi^2 = 1.663$
Mean \pm SD	19342.86 ± 9064.800	22514.29 ± 10430.922	$t = 1.920$
			$df = 138$
			$p \text{ value} = .057$
Support from family members before delivery			
Yes	61(87.1)	67(95.7)	$p = .070$
No	9(12.9)	3(4.3)	$df = 1$
			$\chi^2 = 3.281$
Support from family members after delivery			
Yes	49(70.0)	60(85.7)	$p = 0.025$
No	21(30.0)	10(14.3)	$df = 1$
			$\chi^2 = 5.013$
Type of family			
Single family	30 (42.9)	29 (41.4)	$p = .864$
Joint family	40 (57.1)	41 (58.6)	$df = 1$
			$\chi^2 = .029$

3(4.3%) cases had hormonal problems, compared to 2(2.9%) of controls. Other 67(95.7%) of cases did not have any hormonal problem, compared to 68(97.1%) and the differences of the distributions were not statistically significant ($p > 0.05$). Majority 39(55.7%) of the cases' age at marriage were between 13-17 years, compared to 28(40.0%) in controls. In respective of using contraceptives, majority of the cases 41(58.6%) used methods of contraception, compared to 43(61.4%) of controls. 29(41.4%) cases did not use any method of contraception, compared to 27(38.6%) of controls. Majority of the cases 28(40.0%) had duration of marriage between 11-20 years, compared to 22(31.4%) of controls. Most of the cases 62(88.6%) had good understanding with their husbands in comparison of controls 69(98.6%). Among the participants, who did not have good understanding with

their husbands, number of cases 8(11.4%) were much higher than controls 1(1.4%). And the differences of the distributions were significant ($p < 0.05$). Majority of the cases 47(67.1%) had loyal husbands towards them, compared to controls 54(77.1%). 23(32.9%) cases did not have husbands who were loyal towards them, compared to 16(22.9%) of controls. The differences of the distributions were not statistically significant ($p > 0.05$). Regarding the experience of domestic violence, most of the cases 54(77.1%) did not experience any domestic violence compared to 65(92.9%) of controls. 16(22.9%) cases had experienced domestic violence, compared to 5(7.1%) of controls. Participants who experienced domestic violence had higher rate of developing depression than controls and the differences of the distributions were statistically significant ($p < 0.05$). Among the cases, who had experience domestic violence, most of the cases 9(56.3%) had mental violence compared to 4(80.0%) of controls. 7(43.8%) cases had history about physical violence compared to 1(20.0) of controls. Cases had experienced violence more than controls but the differences in the distributions were not significant ($p > 0.05$) (Table II).

Table II: Hormonal and marital factor associated with postpartum depression

Parameter	Cases	Controls	χ^2 -test
Hormonal problem			
Yes	3(4.3)	2(2.9)	$p = 1.000$
No	67(95.7)	68(97.1)	(Fisher's Exact)
Age at marriage			
13-17	39(55.7)	28(40.0)	$p = .213$
18-24	29(41.4)	40(57.1)	(Fisher's Exact)
25-30	2(2.9)	2(2.9)	
Mean± SD	17.44± 3.105	18.07± 2.926	$t = 1.233$ $df = 138$ $p \text{ value} = .220$
Use of contraceptive method			
Yes	41(58.6)	43(61.4)	$p = .730$
No	29(41.4)	27(38.6)	$df = 1$ $\chi^2 = .119$
Duration of marriage (years)			
1-5	27(38.6)	27(38.6)	$p = .423$
6-10	15(21.4)	21(30.0)	$df = 2$
11-20	28(40.0)	22(31.4)	$\chi^2 = 1.720$
Mean± SD	8.66± 5.705	7.86± 5.226	$t = .865$ $df = 138$ $p = .388$
Living within laws			
Yes	39(55.7)	43(61.4)	$p = 0.493$
No	31(44.3)	27(38.6)	$df = 1$ $\chi^2 = .471$
Good understanding with Husbands			
Yes	62(88.6)	69(98.6)	$p = 0.033$
No	8(11.4)	1(1.4)	(Fisher's Exact)
loyalty of husbands			
Yes	47(67.1)	54(77.1)	$p = 0.187$
No	23(32.9)	16(22.9)	$df = 1$ $\chi^2 = 1.742$
Experience of domestic violence			
Yes	16(22.9)	5(7.1)	$p = .009$
No	54(77.1)	65(92.9)	$df = 1$ $\chi^2 = 6.779$
Type of domestic violence			
Physical	7(43.8)	1(20.0)	χ^2 -test
Mental	9(56.3)	4(80.0)	$p = 0.606$ (Fisher's Exact)

Table III shows the logistic regression model contained two independent variables (support from family members after

delivery, good understanding with husband). As shown in Table 3, out of two variables, only one independent variable had a unique statistically significant contribution to the model. The predictor for developing postpartum depression was support from family members. The adjusted odds ratio for it was 2.352, which indicated participants, who were not supported by their family members, were 2 times more likely (AOR 2.352, 95% CI .994- 5.564) to develop postpartum depression (Table III).

Table III: Logistic regression model showing different factors and postpartum depression

Attribute	Co-efficient (B)	S.E.	AOR	95% CI for Lower CI	95% CI for Upper CI	p
Support from family members after delivery						
Yes	.855	.439	2.352	.994	5.564	.052
No**	Reference					
Good understanding with husband						
No	2.049	1.084	7.760	.927	64.981	.059
Yes**	Reference					

Discussion:

Postpartum depression is influenced by various factors. In this study, most of the participants were between 18-29 age group, completed secondary levels of education. Majority were housewives. Most of them did not have any hormonal problem. Participants who did not have good understanding with husbands were more likely to develop depression. In our study most of the cases resided in rural 37(52.9%), compared to 27(38.6%) of controls. Participants in the present study who live in rural areas, were twice more likely to experience PPD compared to those living in urban areas. However, Gausia K et al. conducted a study among middle income countries, such as Bangladesh, India, Iran and Pakistan concur with our findings that PPD is more prevalent in mothers residing in rural settings¹⁰. Rural Ugandan women may be more at risk of suffering from PPD because they mostly depend on subsistence agriculture with low standards of living and are commonly poorer than women in urban settings¹¹. Majority of the cases 49(70.0%) had adequate support from the families after delivery, in comparison of 60(85.7%) controls. The adjusted odds ratio for it was 2.352, which indicated participants, who were not supported by their family members, were 2 times more likely (AOR 2.352, 95% CI .994- 5.564) to develop postpartum depression. In a recent systematic review and meta-analysis of 13 studies, women with inadequate social support were 6.27 times more likely to develop postpartum depression compared to those who had adequate social support (POR=6.27, 95% CI 4.83–8.13, I 2=0)¹². Regarding the experience of domestic violence, most of the cases 54(77.1%) did not experience any domestic violence compared to 65(92.9%) of controls. Participants who experienced domestic violence had higher rate of developing depression than controls. In a recent study of Bangladesh, Ziaie found that all forms of domestic violence were strongly associated with

higher levels of emotional distress during the pregnancy period as well¹³. Most of the cases 62(88.6%) had good understanding with their husbands in comparison of controls 69(98.6%). In a meta-analysis of 84 studies published during the 1990s, found that marital satisfaction had a moderate predictive relationship with PPD; this finding is supported by O'Hara and Swain's earlier meta-analysis¹⁴.

Conclusion:

Good understanding with the husband, support from family members after delivery and domestic violence are the important factor for PPD. This study finding are notable and conserve certain policy implications for prevention of Postpartum depression among mothers. It may help many government and non- government organizations in drafting policies and implementing target measures to prevent the development of PPD.

Conflict of Interest: None.

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