

Original Article

Prevalence of postpartum depression and its psychosocial factors in district Bathinda

Jasleen Kaur Malhotra¹, Tanvir Kaur Sidhu¹, Varun Mohan Malhotra¹

¹Department of Community Medicine, Adesh Institute of Medical Sciences and Research, Adesh University, Bathinda, Punjab, India.



***Corresponding author:**

Tanvir Kaur Sidhu,
Department of Community
Medicine, Adesh Institute of
Medical Sciences and Research,
Adesh University, Bathinda,
Punjab, India.

sidhutanvir@gmail.com

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ABSTRACT

Objectives: Postpartum depression (PPD) is a serious public health problem that leads to maternal morbidity and mortality, enormously affecting the infant, family, and society. The present study was conducted with the objectives of studying the prevalence of PPD among women in the postpartum period and to find the association between PPD and its psychosocial predictors in District Bathinda, Punjab, India.

Material and Methods: The community based cross-sectional study was conducted among the women in postpartum period of urban and rural field practice area of Adesh Institute of Medical Science and Research, Bathinda. A total of 185 participants were enrolled. Pre-designed questionnaire and Edinburgh Postnatal Depression Scale were the instruments used for capturing sociodemographic data and PPD respectively. Frequencies, percentages and means were used to express the outcomes. Association between predictable and outcome variables was established using Chi-square test.

Results: Among 185 participating women, 22.2% were found to have PPD. Age, obstetric history, sex of child, desire for male child, support from husband, and support from in-laws were found to be statistically associated with PPD. However, education of the participants and their husbands, urban/rural region, family type, socioeconomic status, and place of delivery were found to be not associated.

Conclusion: Prevalence of 22.2% of PPD was reported and found to be associated factors like age, obstetric history, sex of child, desire for male child, husband and in-laws support.

Keywords: Postpartum depression, Prevalence, Edinburgh postnatal depression scale, Psychosocial factors

INTRODUCTION

The phase of maternity in the life of a women is a state filled with excitement of bringing a new life to this world. In some women, this phase is simultaneously accompanied by emotional suffering, as this period is associated with physiological, psychological, and social changes.^[1] One such emotional agony that some mothers go through within 1 year of childbirth is postpartum depression (PPD). The events of pregnancy and delivery are said to be the most life changing events for women^[2] and, the PPD is one such event that comes with the multiple mood swings that occur after the childbirth,^[3] and it is one of the significant barriers for a woman in her child bearing years^[4] The PPD is mainly introduced as an event that dissipates the pleasure of female in her maternal role.^[5] It is a primary health concern for various female from different cultures but still remains under diagnosed and under treated.^[6] There are many personal factors that can ignite this depression such as poverty,

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poor relationships, death of a loved one, and ongoing life challenges.^[7] PPD does not affect the mother only, but it also restricts the emotional, social, and cognitive development of the baby and also, adversely affects entire family.^[8] Initially, a child's brain boosts millions of new neural interrelations and that too every second, and these interrelations are influenced by different environmental factors, and the balance is required for a healthy connection between mother and child.^[9] As reported by the World Health Organization, about 10% of pregnant women worldwide and 13% of women who have just given birth, experience a mental disorder, and primarily depression.^[10] To minimize the serious side effects of PPD, more and more people are focusing on the importance of the prompt and inch-perfect detection and treatment of depression during or after pregnancy. Identifying depression in the postpartum period can be complicated as normal physical and emotional demands of new motherhood, changes in energy and appetite, sleep deprivation, and increased anxiety for the baby may camouflage the mental disorders.^[11] Ever growing hassle of PPD in females persuade us not to forget it as a paramount problem which arouses the need to identify the reasons, early detection, and treatment. This study helped us to report the problem burden in our part of the region and identify associated risk factor helped us to formulate preventive and promotive health services for tackling this significant public health problem at the community level.

MATERIAL AND METHODS

This was a community-based study, the study population included females in the postpartum period. The study was initiated after it was approved by the Research and Ethical Committee of Adesh University till the desired sample size was obtained.

To calculate the sample size,^[12] formula was used using expected prevalence of 13.8% at 5% absolute precision level. We obtained a response rate of 91.5%.

The cross-sectional study design was used in this community-based study and the target population was postpartum females from urban and rural field practice area of Adesh Institute of Medical Science and Research (AIMSR), Bathinda. The community-based cross-sectional study was done on postpartum females from urban and rural field practice area of AIMSR, Bathinda. Stratified random sampling technique was used and the sampling frame was stratified into "urban" and "rural." Equal number of study participants ($n = 101$) was selected from each area using simple random method (random table). Inclusion criteria had females who were in postpartum period of 1 week to 1 year of delivery and who were willing to consent. Exclusion criteria had females who were on treatment for any other psychiatric issues and who were not available on two consecutive visits. Edinburgh Postnatal Depression Scale (EPDS)-10 item^[13]

was used to assess the PPD and the sociodemographic data were collected using a pre-validated proforma.

RESULTS

[Table 1] depicts the demographic characteristics of the participated postpartum females. Around 10% of the participants were between 31 and 40 years. The maximum participants were in the age group of 21–25 years. Most of the participants belonged to the Sikh religion (58.4%) followed by Hindu religion (41.1%) and Muslim religion (0.5%).

Out of all the participants, 48.6% were from urban regions and 51.4% were from rural regions. About 58.4% were from nuclear families, 34.5% were from joint families, and only 7.1% were from three generation families. According to the Revised B.G. Prasad scale, 68.7% of participants were belonging to middle-class category and only 8.6% of the participants were from upper lower class. Around 40% of participants were educated up to high school and only 1.1% were found to be illiterate. Only 47.6% of spouse of participants attained education till high school. Out of all the participants, 43.2% gave birth to male child whereas 36.8% females desired for male child. Almost 79% of the participants were getting full support from their husbands and 21% of participants were having less support from their husbands. Similarly, 52.9% of the participants were getting good support from their in-laws and 47.1% participants were not supported by their in-laws so well.

[Table 2] reveals 57.3% of the participants experienced first pregnancy and just 10.3% experienced third and above pregnancy. Out of 185 participants 82.7% of participants underwent normal vaginal delivery and 17.3% had cesarean section delivery. Most of the deliveries were done at institutional level which were 96.8% and 3.2% were done at maternal home deliveries; maximum participants (87.6%) had planned pregnancy 87.6%, and only 12.4% had unplanned pregnancies.

[Table 3] shows that overall prevalence of PPD was 22.2%, with 14.1% having mild, 8.1% having moderate, and none having severe depression as per the EPDS.

[Table 4] shows that among the studied demographic and social variables age, support from husband, and support from

Table 1: Demographic distribution of the participants.

Variable	Group	Frequency ($n=185$)	Percentage
Age (in years)	<20	9	4.8
	21–25	80	43.2
	26–30	78	42.3
	31–40	18	9.7
Religion	Sikh	108	58.4
	Hindu	76	41.1
	Muslim	1	0.5
Region	Urban	90	48.6
	Rural	95	51.4

Table 2: Distribution of participants according to obstetric factors.

Variable	Group	Frequency (n=185)	Percentage
Obstetric history	1 st pregnancy	106	57.3
	2 nd pregnancy	60	32.4
	3 rd and above	19	10.3
Mode of delivery	Normal vaginal delivery	153	82.7
	Cesarean section	32	17.3
Place of delivery	Home delivery	6	3.2
	Institutional delivery	179	96.8
Planned pregnancy	Yes	162	87.6
	No	23	12.4

Table 3: Prevalence of postpartum depression.

Variables	Frequency (n=185)	Percentage
No depression	144	77.84
Mild depression	26	14.1
Moderate depression	15	8.1
Severe depression	0	0
Total depression	41	22.2

Table 4: Association of demographic and social variables with depression.

Variable	Group	Depression present (n=185), n (%)	P (χ ²)
Age	<20	2 (22.2)	19.1326 (0.003)
	21–25	11 (13.7)	
	26–30	15 (20.5)	
	31–40	13 (56.5)	
Region	Urban	25 (27.8)	3.329 (0.07346)
	Rural	16 (16.8)	
Family type	Nuclear	27 (23.3)	0.2957 (0.86254)
	Joint	11 (19.6)	
	Three generation	3 (23.1)	
Socioeconomic status	I-Upper	0	1.3466 (0.31001)
	II-Upper middle	8 (19.5)	
	III-Middle	31 (24.2)	
	IV-Upper lower	2 (12.5)	
	V-Lower	0	
Support from husband	1–5 - Poor	34 (89.5)	125.607 (0.001)
	6–10 - Good	7 (4.8)	
Support from in-laws	1–5 -Poor	39 (44.8)	48.909 (0.0001)
	6–10 - Good	2 (2.1)	

in-laws were found to be statistically significant ($P < 0.05$). Depression was found more in women who were in the age group 30–40 years (56.5%) and in participants who had poor support from husband and in-laws.

[Table 5] demonstrates that depression was seen more in women with multiple pregnancies, women having desire

Table 5: Association of obstetric variables with depression.

Variable	Group	Depression present (n=185), n (%)	P (χ ²)
Obstetric history	1 st pregnancy	11 (10.4)	29.1815 (0.0001)
	2 nd pregnancy	18 (30.0)	
	3 rd pregnancy and above	12 (63.2)	
Sex of child	Male	12 (15.0)	4.1914 (0.0406)
	Female	29 (27.6)	
Desire for male child	Preference	26 (38.2)	16.1025 (0.0006)
	No preference	15 (12.8)	
Place of delivery	Home delivery	2 (33.3)	0.4486 (0.5029)
	Institutional delivery	39 (21.8)	
Mode of delivery	Normal	30 (19.6)	3.3455 (0.0673)
	Cesarean section	11 (34.4)	
Planned pregnancy	Yes	37 (22.9)	0.3466 (0.5560)
	No	4 (17.4)	

for male child, and the mothers who gave birth to female children in the current delivery. These associations were found to be statistically significant ($P < 0.05$).

DISCUSSION

In the present study, out of the 202 females selected through stratified random sampling, 185 females participated, thus achieving participation rate of 91.5%. In this study, overall prevalence of PPD was 22.2%, out of which 144 participants (77.84%) were not having depression, 26 participants (14.1%) were having mild depression, and 15 participants (18.1%) were having moderate depression. This increase in prevalence of PPD in this study may be due to the fact that the study was done in COVID pandemic which itself was a major stressor for humanity in general and pregnant women specifically. Ninety-five females (51.4%) belonged to rural area while rest 90 (48.6%) were from urban area. [Table 1] revealed that maximum females (43.2%) were in the age group of 21–25 while 42.3% belonged to age group of 26–30 years. The percentage of women in the age group 31–40 and ≤ 20 years was 9.7% and 4.8%, respectively. Cross-tabulation between two variables age and PPD was highest in 56.5% of females who were in the age group between 31 and 40 years of age (56.5%) followed by 22.2% in the age group of ≤ 20 and lowest in the age group of 21–25. This association was found to be statistically significant ($P < 0.05$); similar results were seen in a study by Smorti *et al.* in which depression was found to be significant in 31–40 age group. This could be due to biological and obstetrical factors associated with higher age group. In our study, 48.6% of females were living in urban area and 51.4% were living in rural area [Table 1] out of which PPD came out to be 27.8% in females who were living in urban area and 16.8% in females who were living in rural

area. This could be due to greater number of families which encountered less support in urban areas during COVID time; similar results were seen in the study of Zarghami *et al.* However, this association was not statistically significant ($P > 0.05$). In the present study, 58.4% of participants in the present study were living in nuclear families as nowadays society has a trend of small families, followed by joint family (34.5%) and three generation families which were only 7% as shown in [Table 6]. In the cross-tabulation between family type and PPD, almost same percentage of PPD in nuclear families and three generation families which were 23.2% and 23.1%, respectively, were present. The higher prevalence of PPD among women in nuclear families and three generation families as compare to joint families. This could be due to females living in nuclear families who were isolated during COVID time and in three generation family type, they may have more responsibilities to perform; similar results were

seen in the study done by Kizilirmak *et al.*^[8,14,15]. However, the difference was statistically non-significant ($P > 0.05$). With one more associating factor which was support from husband was found to be a strong factor behind low PPD among women. Only 4.8% of females were found to be suffering from PPD as compared to 89.5% who had no support from their spouse and this association was found to be significant ($P < 0.05$) [Table 4]; similar results were seen in studies done by Adeyemo *et al.*,^[14] Dennis *et al.*,^[4] and Al Nasr *et al.*^[5]. Similarly, social support from in-laws was found to be a protective factor against PPD and women having support from in-laws were ultimately a strong factor in terms of lower rate of PPD among women. In [Table 6], 47% of females had poor support from in-laws and 44.8% due to poor support were suffering from PPD and on the other hand women who had support from their in-laws had a prevalence of 2.1% only [Table 4]. This association was found to be statistically significant ($P < 0.05$); similar results were seen in the study done by Sidhu *et al.*^[16] This could be because women feel satisfied and safe when she gets supportive and positive environment in the family. The study shows that 57.3% of the females were prima gravida and 10% had third or more pregnancy [Table 2] as same has been observed in the study of Goweda and Metwally.^[17] Chi-square test revealed that PPD was seen more in females with third pregnancy (63.2%) [Table 5]. The prevalence of PPD was progressively increasing with increase in the parity and this association was found to be statistically significant ($P < 0.05$). The similar results were seen in the study Rawat, 2018; Desai *et al.* This association was significant, may be since females faced stress due to raising more than two children as already leading to financial crisis especially during COVID time when most of the people faced work related issues. Further in this study, 36.8% of females preferred male child and 63.2% did not had any particular preference [Table 6]. The association between sex preference and prevalence of postpartum was statistically who had desire for male child and only 12.8% of females had depression who did not had any preference. Similar study of and it could be because pressure from the society can lead the mother into significant ($P < 0.05$) [Table 5] with 38.2% females suffered from PPD the phase of depression.

In this study, maximum deliveries were institutional deliveries (96.8%) and only 3.2% were home deliveries [Table 2]. However, 33.3% of females suffered depression who underwent home deliveries. Chi-square showed that this difference was statistically non-significant. This could be due to inadequate time available to women for mental and physical recovery after delivery. The other obstetric factor which was taken was mode of delivery. About 17.3% of females who had their child through cesarean section and 82.7% of females who gave birth through normal delivery [Table 2]. Cross-tabulation between mode of delivery and PPD revealed that 34.4% of females were suffering from PPD

Table 6: Sociodemographic distribution of participants.

Variable	Group	Frequency (n=185)	Percentage
Family type	Nuclear	108	58.4
	Joint	64	34.5
	Three generation	13	7.1
Socioeconomic status	I-Upper	0	0
	II-Upper middle	41	22.7
	III-Middle	128	68.7
	IV-Upper lower	16	8.6
	V-Lower	0	0
Husband education	Illiterate	2	1.1
	Primary education	6	3.2
	Secondary education	21	11.4
	High school	88	47.5
	Graduate	63	34.1
Female education	Professional	5	2.7
	Illiterate	2	1.1
	Primary education	26	14.1
	Secondary education	45	24.3
	High school	73	39.5
Husband occupation	Graduate	38	20.5
	Professional	1	0.5
	Unemployed	10	5.4
	Semi-skilled	33	17.8
	Skilled	138	74.6
Female occupation	Professional	4	2.2
	Working	42	22.7
Sex of the child born	Housewife	143	77.3
	Male	80	43.2
Desire for male child	Female	105	56.8
	Preferred	68	36.8
Support from husband	Not preferred	117	63.2
	Poor	38	20.5
Support from in-laws	Good	147	79.5
	Poor	87	47.1
	Good	98	52.9

who undergone caesarean section and 19.6% of females were suffering from PPD who undergone normal mode of delivery. [Table 5]; similar results were seen in the study done by Shitu *et al.*^[18] However, this association was found to be non-significant. This could be due to the fear of any complications after cesarean section or any health issue after delivering the child through this mode. Continuing the other predictor which was planned pregnancy in which 87.6% of females had planned pregnancy and only 12.4% did not planned for the current pregnancy at that time [Table 2]. Cross-tabulation between planned pregnancy and PPD in [Table 5] revealed that those females who planned pregnancy (22.9%) were suffering more depression than those who did not planned (17.4%). This could be due to the reason that the females who planned pregnancy this time were worried about their health and their child's health and due to COVID also the female was worried about her new born. However, the association between planned pregnancy and PPD was statistically non-significant ($P > 0.05$). In this study, 43.2% of females who gave birth to male child and 56.8% of females gave birth to female child [Table 6]. In the cross-tabulation of sex of child and PPD, females those who were having female child (27.6%) were suffering more from PPD than females who had male child (15%). The association between sex of child and PPD was found to be statistically significant ($P < 0.05$), this could be due to the pressure from the family and society of having male child. Similar study done by Rawat and Mandoli shows PPD in females having girl child.

Among all the variables planned pregnancy, joint family, first pregnancy, socioeconomic status, and mode of delivery were found to have no relation with the PPD. High age group, third pregnancy, sex of child, support from husband, in-laws, and desire for a male a child were some of the factors that have positive relation with PPD.

CONCLUSION

- The study revealed a high prevalence of PPD which is 22.2%, identifying psychosocial predictors
- The prevalence of PPD is high and is associated with age, obstetric history, sex of child, desire for male child, support from husband, and support from in-laws
- The factors which are not associated with the depression are family type, socioeconomic status, region, place of delivery, female education mode of delivery, and planned pregnancy.

Recommendations

- Health screening programs should be organized periodically and it is recommended to screen all the high-risk mothers for PPD when they visit hospitals for the immunization of new born

- It is recommended that patient health questionnaire and community-based assessment checklist developed and implemented for screening of common non communicable diseases including mental disorders, leprosy, and tuberculosis and filled by ASHA is used for screening of women in postpartum period for early identification of PPD.

Declaration of patient consent

Institutional review board (IRB) permission obtained for the study.

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Conflicts of interest

There are no conflicts of interest.

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