Original Article

Evaluation of Peripartum Depression in Females

Abstract

Background: Depression is the most common mental health condition affecting perinatal women and mothers worldwide. Worldwide, about 10% of pregnant women and 13% of women who have given birth experience a mental disorder, primarily depression. In developing countries like India, this is even higher, i.e., 15.6% during pregnancy and 19.8% after childbirth. The present study was initiated with the objective of studying the prevalence of depression among women in the peripartum period and to find the association of peripartum depression and its risk factors. **Materials and Methods:** This was a hospital-based cross-sectional study, including mothers in antenatal and postnatal period. A sample size of 200 was calculated using Daniels' formula. A questionnaire was administered by the investigator in vernacular language by an interview technique for assessing awareness and behavior of all participants. The Edinburgh Postnatal Depression Scale was used to identify the patients at the risk of depression. Written informed consent was taken from every participant. **Results:** The prevalence of peripartum depression was 14%. Younger age group (not <18 years), working female, joint family, first pregnancy, social support from in-laws, and not having desire/pressure for a male child were found to be associated with a lower prevalence of peripartum depression. Other variables which were not significantly associated with peripartum depression were education of the participants and their husbands and urban/rural locality. **Conclusion:** The prevalence of peripartum depression is quite high and is negatively associated with first pregnancy, joint family, and working status.

Keywords: *Peripartum depression, prevalence, sociodemographic factors, urban and rural*

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Introduction

A human body can bear 45 del of pain. However, at giving birth, a woman feels 57 del of pain.[1] Antenatal clinics can expect at least one in five pregnant women to experience mental health problems, especially depression and anxiety.[2] Perinatal depression is defined as depression occurring in a woman during pregnancy or within 12 months of delivery.[3] Peripartum depression manifests in different ways, varying in severity and period of onset: prenatal depression, "baby blues," and postpartum depression. It has a prevalence of 10%–20%[4] and can occur during pregnancy, especially in the third trimester or from several weeks to several months after childbirth. Worldwide, about 10% of pregnant women and 13% of women who have given birth experience a mental disorder, primarily depression. In developing countries like India, this is even higher, i.e., 15.6% during pregnancy and 19.8% after childbirth.[5] Effective pharmacological and nonpharmacological treatments are available, but both patients and their families often neglect depressive features during the peripartum period.[6]

Causes

Virtually all women are at risk to suffer from psychiatric disorders during pregnancy and in the 1st year after delivery due to hormonal changes and stress of pregnancy itself, but factors such as poverty, illiteracy, migration, lack of health-care facilities, extreme stress, violence (domestic and sexual), abuse, conflict situations, multiparous, and low social support from in-laws generally increase risks for these disorders.[7]

Due to depression, the mother will suffer a lot and will fail to perform her day-to-day activities in a proper manner. As depression causes loss of appetite and sleep, she will not be able to take proper nutrition and rest. As the pregnancy is already a stressful experience, this will lead to weakness, lethargy, and nutrient deficiency, leading to deterioration of health. The medical conditions that can arise due to this are anemia, nutrient deficiencies,

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and gestational diabetes. This might lead to further complications that might arise during delivery.

Effects of peripartum depression on the child

As the mother is suffering from depression, she will not be able to perform her daily routine work adequately. In addition, the recent childbirth necessitating infant care will increase the burden on mother. This decreased quality of care will have negative effects on infant's growth and development, leading to further problems such as delayed milestones and child neglect. This also hinders in the process of breastfeeding which is vital for the health of the infant. Breastfeeding not only helps in mother–child bonding but also raises the immunity of the child. It serves as a protective factor in various diarrheal and respiratory diseases in infants eventually decreasing under-five mortality. In severe cases where the mother is having suicidal thoughts, eventually she might commit suicide thereby leading to child neglect and abandonment. While in the cases where the mother is suffering from psychotic features in addition, the risk of infanticide comes into the picture.[8] Unfortunately, maternal health has not received importance it deserves in India. Moreover, studies on peripartum depression are rare, and no study has been carried out in this region of Punjab. This study aims to fulfill that knowledge gap by studying the prevalence of peripartum depression and to compare the prevalence of depression in these women in urban and rural sector. It also tries to find the association of peripartum depression and its sociodemographic risk factors in Bathinda district of Punjab and recommends the proper care and support for these females.

Materials and Methods

This was a hospital-based study including mothers in the peripartum period. The study population included females in the peripartum period who have attended the immunization clinic. The study was initiated in February 2018 after it was approved by the Research Ethics Committee of Adesh University till the desired sample size was obtained and was completed by July 2018. According to a study titled "A controlled study of the onset, duration and prevalence of postnatal depression" conducted in the Department of Psychiatry, School of Postgraduate Medicine, Keele University,[9] the prevalence was found to be 13.8%.

To calculate the sample size, the following formula[10] was used:

$$n = \frac{Z_a^{\,2}\, P(1-P)}{d^2}$$

where, n = sample size

Z_a = Z statistic for a level of confidence
P = expected prevalence or proportion
d = precision (in proportion of one; if 5%, d = 0.05).

Thus, our minimum sample size was 190, and a sample of 200 was taken. All females who were in peripartum period coming to immunization clinics in both Rural Health Training Centre (100) and Urban Health Training Centre (100) after the approval of the study were included till the desired sample size was obtained. Written informed consent was taken from every participant.

Mothers who did not give consent were excluded from the study. The questionnaire was administered personally by the investigator in vernacular language by an interview technique for assessing awareness and behavior of all participants. The Edinburgh Postnatal Depression Scale[11] (this 10-question self-rating scale has been proven to be an efficient and effective way of identifying patients at risk for perinatal depression) was used to identify the patients at the risk of depression. The prevalence was reported as percentages. The pattern of symptoms was calculated in frequencies and percentage. Risk factors were calculated in frequencies and percentages. Association with risk factors was assessed using Chi-square test. The data were handled and managed by the investigator himself. MS Excel was used for the statistical analysis. The level of significance was fixed at 95% confidence interval.

Results

Table 1 shows that more than half of the participants (53.0%) were in the age group of 21–28 years. Almost 28.5% of participants were illiterate. Almost half (55.0%) of the participants were homemakers and 45% of females were working. The husbands of 28.0% of participants were illiterate.

Table 2 elicits that, in the present study, 200 females participated, 100 from rural area and 100 from urban area. Majority (60%) of the participants were living in a joint family. Nearly 61.5% of participants were multigravid, and desire for a male child was present in 39.0% of females. Social support from in-laws was present in 61.0% of participants.

Table 1: Demographic distribution of participants

Variable	Group	Frequency (n=200), n (%)
Age (years)	<21	51 (25.5)
	21-28	106 (53)
	>28	43 (21.5)
Education	Illiterate	57 (28.5)
	Till 10th	65 (32.5)
	Till 12th	55 (27.5)
	Graduate	23 (11.5)
Occupation	Working	90 (45.0)
	Homemaker	110 (55.0)
Husband education	Illiterate	56 (28.0)
	Till 10th	65 (25.0)
	Till 12th	55 (30.0)
	Graduate	23 (17.0)

Table 3 describes that, in the present study, the total prevalence of peripartum depression was 14.0%, and among these participants, most were suffering from mild depression.

Table 4 elicits that among the studied demographic variables, age and occupation of the participants were found to be statistically significant ($P < 0.05$) [Table 4]. Depression was found more in females who were more than 28 years of age (25.5%) and in participants who were homemakers.

Table 5 demonstrates that depression was seen more in females living in urban area (18.0%) than in females living in rural area (10.0%). Depression was seen more in females with multiple pregnancies, and women having support from in-laws had low prevalence of depression, and these associations were found to be statistically significant ($P < 0.05$). Having a desire for a male child was found to be significantly associated with a higher prevalence of peripartum depression.

Discussion

In the present study, 200 females who were in antenatal and postnatal period participated, 100 from rural area and 100 from urban area [Table 2]; almost the same sample size (230) was taken in a similar study by Gupta *et al*.[12] More than half (53.0%) of the participants were in the age group of 21–28 years, and the same age group was dominant in a sample of similar study by Gelaye *et al*.;[2] this may be because generally most of women get married and get pregnant in this age group in North India. 28.5% of participants were illiterate and most of them were from rural area. Almost half (55.0%) of the participants were homemakers and 45% of females were working; this equal distribution was helpful in finding the more accurate association between peripartum depression and literacy. Husbands of 28.0% of participants were illiterate [Table 1]; in their study on perinatal depression, Herba *et al*.[13] reported a similar level of literacy of participants Majority (60%) of the participants in the present study were living in joint family. Almost 61.5% of participants were multigravid. Desire for a male child was present in 39.0% of females; this may be due to male child preference in North Indian culture. Social support from in-laws was prevalent in 61.0% of participants, which was almost similar (56.1%) in a study by Fisher.[3]

In the present study, the total prevalence of peripartum depression is 14.0%, and among these participants, most were suffering from mild depression [Table 3]; almost the same prevalence of 13.8% was documented in a similar study carried by Gupta *et al*. in North India[12] and in another study done by Rathod *et al*. in Madhya Pradesh.[14] Among the studied demographic variables, age and occupation of the participants were found to be statistically significant ($P < 0.05$) [Table 4]. Depression was

Table 2: Distribution of participants according to social and obstetric variables

Variable	Group	Frequency (n=200), n (%)
Urban/rural	Urban	100 (50.0)
	Rural	100 (50.0)
Family type	Nuclear	80 (40.0)
	Joint	120 (60.0)
Obstetric history	Primigravida	77 (38.5)
	Multigravid	123 (61.5)
Social support from in-laws	Present	110 (55.0)
	Absent	90 (45.0)
Desire for a male child	Present	78 (39.0)
	Absent	122 (61.0)

Table 3: Prevalence of depression and its severity

Variable	Frequency (%)
Mild depression	17 (8.5)
Moderate depression	9 (4.5)
Severe depression	2 (1.0)
Total depression	28 (14.0)

Table 4: Association of demographic variables with depression

Variable	Group	Depression present (n=200), n (%)	P (χ^2)
Age	<21	9 (17.0)	0.011 (9.02)
	21-28	8 (7.5)	
	>28	11 (25.5)	
Education	Illiterate	6 (10.5)	0.546 (2.125)
	Till 10th	8 (12.4)	
	Till 12th	9 (16.4)	
	Graduate	5 (21.7)	
Occupation	Working	7 (7.7)	0.0218 (5.262)
	House wife	21 (19.1)	
Husband education	Illiterate	7 (12.5)	0.927 (0.462)
	Till 10th	8 (16.0)	
	Till 12th	9 (15.0)	
	Graduate	4 (11.8)	

Table 5: Association of social and obstetric variables with depression

Variable	Group	Depression present (n=200), n (%)	P (χ^2)
Urban/rural	Urban	18 (18.0)	0.10303
	Rural	10 (10.0)	(2.658)
Family type	Nuclear	16 (20.0)	0.0458
	Joint	12 (10.0)	(3.987)
Obstetric history	First pregnancy	6 (7.8)	0.04585
	Multigravid	22 (17.9)	(4.007)
Social support from in-laws	Present	10 (9.1)	0.0269
	Absent	18 (20.0)	(4.893)
Desire for a male child	Present	18 (23.1)	0.0031
	Absent	10 (8.2)	(8.75)

found more in females who were more than 28 years of age (25.5%); similar results were seen in a study by Gupta *et al*.[12] and Bener *et al*.[15] on postpartum depression, in which depression was found more in higher age groups. This association could be due to higher level of stress in older women during pregnancy as they are more concerned about their and baby's health.

Depression was seen significantly more in participants who were homemakers ($P < 0.05$) [Table 4]. Similar results had been reported by Bener *et al*., Gupta *et al*.,[12] Inandi *et al*.,[16] Chaaya *et al*.,[17] and Shivalli and Gururaj.[18] This association may be because working women get more satisfaction from their jobs as compared to homemakers and they are indulged in work for most of time in a day, so that they do not get much time to overthink.

In our study, peripartum depression was seen more in females living in urban area (18.0%) than in females living in rural area (10.0%) [Table 5]; this may be due to more nuclear families and less social support in urban localities, but this difference was not found to be statistically significant ($P > 0.05$). Depression was seen more in females with multiple pregnancies, and this association was found to be statistically significant ($P < 0.05$); studies by Biaggi *et al*.[19] also highlighted the same association. This association may be due to pressure of having a male child after a female child or stress for raising multiple children, leading to financial crisis.

In the present study, social support from in-laws was found to be a protective factor against the peripartum depression, and women having support from in-laws had low prevalence of depression, and this association was found to be statistically significant ($P < 0.05$) [Table 5]. Similar results were seen in a systemic review and meta-analysis done by Upadhyay *et al*. in India[20] and in a comparative study by Takegata *et al*. in Japan.[21] This may be because women feel more secure and safe in such positive environment; good care of pregnant women and more helping hands are there to take care of the newborn, which reduces the stress of the mother and she can have sufficient rest. Such association between support from in-laws and depression is also seen in a study by Gupta *et al*.,[12] Bener *et al*.,[15] and Morikawa *et al*.[22]

Other variables which were not significantly associated with peripartum depression were education of the participants and husbands and living locality.

Among all the variables considered in the present study, younger age group (not <18 years), working female, joint family, first pregnancy, social support from in-laws, and not having desire/pressure for a male child were found to have a positive relation with lower prevalence of peripartum depression; similar association was reviewed in a study done by Zaidi *et al*. in New Delhi[23] and a study done by Patel *et al*. in Anand district of Gujarat,[24] in which female sex of newborn child was significantly associated with depression.

Higher age group, being homemaker, nuclear family, multiple pregnancies, absence of social support from in-laws, and having desire/pressure for a male child were the factors found to be significantly associated with a higher prevalence of peripartum depression.

Conclusion

The prevalence of peripartum depression in the study district was determined to be 14.0%, as per the current study. The prevalence of peripartum depression was more in urban area (18%) than rural area (10%). Younger age group (not <18 years), working female, joint family, first pregnancy, social support from in-laws, and not having desire/pressure for a male child were found to be positively associated with a lower prevalence of peripartum depression. Higher age group, being homemakers, nuclear family, multiple pregnancies, absence of social support from in-laws, and having a desire/pressure for a male child were found to be significantly associated with a high prevalence of peripartum depression. Other variables which were not significantly associated with peripartum depression were education of the participants and their husbands and urban/rural locality.

Recommendations

Females should avoid getting pregnant in a higher age group. Women should be encouraged to indulge themselves in jobs. Social support from in-laws is very important for well-being of the mother and child. Culture of living in joint family should be adopted. Psychiatric counseling, especially for women living in urban locality, must be provided.

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Conflicts of interest

There are no conflicts of interest.

References

1. Fairbrother N, Young AH, Janssen P, Antony MM, Tucker E. Depression and anxiety during the perinatal period. BMC Psychiatry 2015;15:206.
2. Gelaye B, Rondon MB, Araya R, Williams MA. Epidemiology of maternal depression, risk factors, and child outcomes in low-income and middle-income countries. Lancet Psychiatry 2016;3:973-82.
3. Fisher J, Cabral de Mello M, Patel V, Rahman A, Tran T, Holton S, *et al.* Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: A systematic review. Bull World Health Organ 2012;90:139G-49G.
4. Kettunen P, Koistinen E, Hintikka J. Is postpartum depression a homogenous disorder: Time of onset, severity, symptoms and hopelessness in relation to the course of depression. BMC

Pregnancy Childbirth 2014;14:402.
5. World Health Organization. Maternal Mental Health. Available from: https://www.who.int/mental_health/maternal-child/maternal_mental_health/en/. [Last accessed on 2019 Mar 14].
6. Stuart-Parrigon K, Stuart S. Perinatal depression: An update and overview. Curr Psychiatry Rep 2014;16:468.
7. Silva R, Jansen K, Souza L, Quevedo L, Barbosa L, Moraes I, *et al.* Sociodemographic risk factors of perinatal depression: A cohort study in the public health care system. Braz J Psychiatry 2012;34:143-8.
8. Maternal depression and child development. Paediatr Child Health 2004;9:575-98.
9. Cox JL, Murray D, Chapman G. A controlled study of the onset, duration and prevalence of postnatal depression. Br J Psychiatry 1993;163:27-31.
10. Sundaram KR. Medical Statistics Principles and Methods. 2nd ed. Gurgaon: Wolters Kluwer; 2015. p. 246.
11. Edinburgh Postnatal Depression Scale. Psychology Tools. Available from: https://psychology-tools.com/test/epds. [Last accessed on 2019 Mar 13].
12. Gupta S, Kishore J, Mala YM, Ramji S, Aggarwal R. Postpartum depression in North Indian women: Prevalence and risk factors. J Obstet Gynaecol India 2013;63:223-9.
13. Herba CM, Glover V, Ramchandani PG, Rondon MB. Maternal depression and mental health in early childhood: An examination of underlying mechanisms in low-income and middle-income countries. Lancet Psychiatry 2016;3:983-92.
14. Rathod SD, Honikman S, Hanlon C, Shidhaye R. Characteristics of perinatal depression in rural central, India: A cross-sectional study. Int J Ment Health Syst 2018;12:68.
15. Bener A, Burgut FT, Ghuloum S, Sheikh J. A study of postpartum depression in a fast developing country: Prevalence and related factors. Int J Psychiatry Med 2012;43:325-37.
16. Inandi T, Elci OC, Ozturk A, Egri M, Polat A, Sahin TK. Risk factors for depression in postnatal first year, in Eastern Turkey. Int J Epidemiol 2002;31:1201-7.
17. Chaaya M, Campbell OM, El Kak F, Shaar D, Harb H, Kaddour A. Postpartum depression: Prevalence and determinants in Lebanon. Arch Womens Ment Health 2002;5:65-72.
18. Shivalli S, Gururaj N. Postnatal depression among rural women in South India: Do socio-demographic, obstetric and pregnancy outcome have a role to play? PLoS One 2015;10:e0122079.
19. Biaggi A, Conroy S, Pawlby S, Pariante CM. Identifying the women at risk of antenatal anxiety and depression: A systematic review. J Affect Disord 2016;191:62-77.
20. Upadhyay RP, Chowdhury R, Aslyeh Salehi, Sarkar K, Singh SK, Sinha B, *et al.* Postpartum depression in India: A systematic review and meta-analysis. Bull World Health Organ 2017;95:706-17C.
21. Takegata M, Ohashi Y, Lazarus A, Kitamura T. Cross-national differences in psychosocial factors of perinatal depression: A systematic review of India and japan. Healthcare (Basel) 2017;5. pii: E91.
22. Morikawa M, Okada T, Ando M, Aleksic B, Kunimoto S, Nakamura Y, *et al.* Relationship between social support during pregnancy and postpartum depressive state: A prospective cohort study. Sci Rep 2015;5:10520.
23. Zaidi F, Nigam A, Anjum R, Agarwalla R. Postpartum depression in women: A Risk factor analysis. J Clin Diagn Res 2017;11:QC13-6.
24. Patel HL, Ganjiwale JD, Nimbalkar AS, Vani SN, Vasa R, Nimbalkar SM. Characteristics of postpartum depression in Anand district, Gujarat, India. J Trop Pediatr 2015;61:364-9.