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Original Research Article

A STUDY OF THE PREVALENCE OF PSYCHIATRIC MORBIDITY IN ANTENATAL AND POSTNATAL MOTHERS

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ABSTRACT

Background: Pregnancy and motherhood are periods of joy and fulfilment, but also represent significant psychological vulnerabilities. Psychiatric morbidity during pregnancy and after childbirth is a crucial health concern that impacts both the mother and child. This study aimed to determine the prevalence of psychiatric morbidity among antenatal and postnatal mothers. **Materials and Methods:** This hospital-based cross-sectional study was conducted on 260 antenatal and 170 postnatal women at a tertiary-care hospital. Consecutive sampling was used to select participants, and data were collected using a semi-structured proforma. The Patient Health Questionnaire-9 and Generalised Anxiety Disorder-7 were used to assess depression and anxiety levels. **Result:** Among the antenatal mothers, 63.1% were under 25 years old, 64.2% were graduates, and 96.6% were unemployed. Minimal depression was observed in 69.2%, mild in 18.8%, moderate in 8.1%, and moderately severe in 3.8% of patients, with no severe cases. Anxiety levels were minimal in 76.5%, mild in 16.1%, and moderate in 7.3% of the patients. In the postnatal group, 54.7% were under 25 years of age, 70.6% were graduates, and 98.8% were unemployed. Minimal depression was reported in 57%, mild in 28.2%, moderate in 8.8%, moderately severe in 4.1%, and severe in 1.7% of the participants. Anxiety levels were minimal in 60%, mild in 30%, moderate in 8.8%, and severe in 1.1%. **Conclusion:** Our study concluded that psychiatric morbidity significantly affects antenatal and postnatal mothers, with symptoms persisting and worsening during the postpartum period. Systematic mental health screening and intervention are essential throughout pregnancy and the postpartum period.

INTRODUCTION

Pregnancy and motherhood are generally periods of joy and fulfilment, but they also represent significant psychological vulnerability. Psychiatric morbidity during pregnancy and after childbirth is a crucial maternal health concern that impacts both the mother and child. However, these issues remain underdiagnosed because of cultural restrictions and a lack of resources.[1,2] In Indian, studies have reported varying prevalence rates of antenatal and postnatal depression.[2] Postpartum disorders have been recognised in diagnostic manuals and added to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (DSM-IV-TR). While the DSM-IV-TR defines the postpartum period as four weeks post-delivery, clinicians recognise mental health risks up to one-year post-childbirth.[3]

The International Classification of Diseases, Tenth Edition (ICD-10), categorises these disorders as "mental and behavioural disorders associated with the puerperium" (F53.0–53.9), with the duration criteria set at six weeks. The DSM-5 has further adapted this by using "with peripartum onset", applicable from pregnancy through four weeks post-delivery.[4] Psychiatric morbidity often extends beyond classification periods, highlighting the need for improved screening practices for pregnant women. Although these classifications are standardized, many women experience psychiatric symptoms beyond the defined diagnostic windows. Antenatal psychiatric disorders, including anxiety, depression, and psychosis, affect maternal health, foetal development and child outcomes. Studies have shown that many women experience psychiatric distress during pregnancy, leading to poor prenatal

care, obstetric complications, and impaired maternal-infant bonding.[5,6]

Postnatal psychiatric morbidity, particularly postpartum depression, affects approximately 17% of new mothers globally.[7] Manifesting within weeks of childbirth, the symptoms include prolonged despair, fatigue, anxiety, and suicidal ideation. These disorders affect child development and family dynamics, occurring 2-3 days after childbirth in 1-2 per 1000 mothers. Mild to moderate depression affects 10-15% of women postpartum, while postpartum anxiety disorders are also prevalent.[8,9] The postpartum phase involves psychiatric disturbances beyond postpartum blues, depression, and psychosis. Postpartum blues affect 50-75% of mothers and typically resolve on their own. Obsessions relating to infanticide, morbid preoccupations with delivery, mother-infant bonding disorders, and PTSDs are increasingly recognised, highlighting the complexity of postpartum psychiatric morbidity.[8,9]

Antenatal psychiatric morbidity often predicts postnatal disorders, highlighting the need for continuous mental health monitoring throughout pregnancy. Women who experience psychological distress during pregnancy have an elevated risk of postpartum disorders. Socio-demographic factors such as education, socio-economic status, family support, and cultural beliefs influence psychiatric morbidity among pregnant and postpartum women.[2,10] Socioeconomically disadvantaged groups and those lacking support are particularly vulnerable, and cultural restrictions create barriers to receiving appropriate care. In low- and middle-income countries, the prevalence of psychiatric disorders during pregnancy and postpartum periods often exceeds that in developed nations due to limited resources and insufficient screening programs.[2,10]

Existing national programs such as RMNCH+A and the District Mental Health Programme do not routinely incorporate perinatal psychiatric screening, creating a gap in integrated maternal care. Many maternal psychiatric disorders remain undiagnosed, affecting both maternal and infant outcomes. Given the burden of maternal psychiatric disorders, systematic screening during antenatal and postnatal visits should be an integral part of maternal healthcare. Early detection and management can mitigate adverse outcomes and improve maternal mental health and child development.[11] This study was undertaken to estimate the prevalence of psychiatric morbidity across pregnancy trimesters and the early postpartum period, with an emphasis on identifying modifiable psychosocial and clinical risk factors.

Aim

This study aimed to determine the prevalence of psychiatric morbidity in antenatal patients across various trimesters of pregnancy.

MATERIALS AND METHODS

This hospital-based descriptive cross-sectional study was conducted on 260 antenatal women and 170 postnatal women at the Department of Obstetrics and Gynaecology – KGH, Government Medical College, Omandurar Government Estate, between May 2022 and May 2024. The study was approved by the Institutional Ethics Committee, and informed consent was obtained before the initiation of the study.

Inclusion and exclusion criteria

The study included patients who were willing to participate, antenatal women attending the outpatient department or admitted to the ward, and postnatal mothers up to two weeks postpartum. Patients with severe obstetric complications such as PIH, GDM, severe anaemia, APH, PPH, antepartum or postpartum eclampsia, or medical disorders such as heart disease and diabetes were excluded.

Methods

Consecutive sampling was used to select participants for the study, and data were collected using a pre-designed, semi-structured proforma. Relevant information was obtained through one-on-one interviews with the patients and from their medical records. Participants were followed throughout the entire course of pregnancy, including the perinatal and postnatal periods to ensure comprehensive data collection. Data were presented as frequencies and percentages.

RESULTS

In the antenatal population, the majority were aged <25 years, 164(63.1%), with 96(36.9%) aged >25 years. The highest educational status was among graduates, 167 (64.2%), followed by secondary education, 53(20.4%) and primary education, 40 (15.4%). Employment status was predominantly unemployed, 251(96.6%), compared to employed 9(3.4%). All mothers had no previous psychiatric illness, 260(100%). Most were in non-consanguineous marriages, 237(91.2%) compared to consanguineous marriages, 23(8.8%).

Regarding family type, joint families were predominant, 194(74.6%), compared to nuclear 66 (25.4%). The spouses were mostly literate, 247(95%) and employed, 256(98.5%), with a minority being illiterate, 13(5%) and unemployed, 4(1.5%). Spouse's medical illness was absent in most cases, 252(96.9%), with 8(3.1%) affected. Substance abuse history in spouses was present in 23(9.2%) patients, with alcohol addiction in 18(5.9%) and nicotine addiction in 5(1.9%). Self-perceived spousal support was very good in 199(76.6%), good in 59(22.7%), and fair in 2(0.7%) patients.

Extended family support was perceived as very good 117(45%), good 69(26.5%), and poor 25(9.6%). Primiparity was more common, 168(64.6%) than multiparity 92(35.4%). Most antenatal bookings occurred in the first trimester, 250(96.2%), compared to the second trimester, 10(3.8%). Complaints

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included excessive vomiting in 66(25.4%) patients, with no reports of excessive bleeding. Among mothers with children, 56(60.8%) lived with one child, and 36(39.2%) lived with two children. Medical illnesses included anaemia 82(31.5%), gestational hypertension 67(25.7%), gestational diabetes mellitus 51(19.6%), and hypothyroidism 31(11.9%) (Table 1).

Table 1: Sociodemographic and clinical characteristics of antenatal mothers

		Antenatal mother (n=260)
Age (in years)	<25	164(63.1%)
	>25	96(36.9%)
Education	Illiterate	0
	Primary	40(15.4%)
	Secondary	53(20.4%)
	Graduate	167(64.2%)
Employment	Employed	9(3.4%)
	Unemployed	251(96.6%)
Previous psychiatric illness	Yes	0
	No	260(100%)
Marriage	Non-consanguineous	237(91.2%)
	Consanguineous	23(8.8%)
Family type	Joint	194(74.6%)
	Nuclear	66(25.4%)
Spouse education	Illiterate	13(5%)
	Literate	247(95%)
Spouse employment	Employed	256(98.5%)
	Unemployed	4(1.5%)
Spouse h/o medical illness	Yes	8(3.1%)
	No	252(96.9%)
Spouse h/o substance abuse	Yes	23(9.2%)
	No	228(90.8%)
Type of addiction	Alcohol	18(5.9%)
	Nicotine	5(1.9%)
Self-perception regarding spouse support	Fair	2(0.7%)
	Good	59(22.7%)
	Very good	199(76.6%)
Self-perception regarding extended family support	Good	69(26.5%)
	Poor	25(9.6%)
	Very good	117(45%)
Parity	Primi	168(64.6%)
	Multi	92(35.4%)
Booking	First trimester	250(96.2%)
	Second trimester	10(3.8%)
Complaints	Excessive bleeding	0
	Excessive vomiting	66(25.4%)
Number of children living	One	56(60.8%)
	Two	36(39.2%)
Medical illness	Anemia	82(31.5%)
	GDM	51(19.6%)
	GHTN	67(25.7%)
	Hypothyroid	31(11.9%)

Among postnatal mothers, 93(54.7%) were aged <25 years, and 77(45.3%) were >25 years. Regarding educational status, 120(70.6%) were graduates, 27(15.8%) had secondary education, 14(8.2%) had primary education, and 9(5.3%) were illiterate. Regarding employment status, 168(98.8%) were unemployed, and 2(1.2%) were employed. None had a psychiatric illness, 170(100%). There were 116(68.3%) mothers in non-consanguineous marriages and 54 (31.7%) mothers in consanguine marriages; the family type was mainly joint, 143(84.2%) versus nuclear, 27(15.8%). Most spouses were literate, 140(82.3%), with 30(17.7%) illiterates. Spouse employment was 166(97.7%), with 4(2.3%) being unemployed. Medical illness in spouses was present in 166(97.7%) and absent in 4(2.3%) patients. Substance abuse among spouses was reported in 18(10.6%) cases, with alcohol addiction in 10(20%) and nicotine addiction in 8(16%) (Table 2).

Table 2: Sociodemographic and clinical characteristics of postnatal mothers

		Postnatal mother (n=170)
Age (in years)	<25	93(54.7%)
	>25	77(45.3%)
Education	Illiterate	9(5.3%)
	Primary	14(8.2%)
	Secondary	27(15.8%%)
	Graduate	120(70.6%)

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Employment	Employed	2(1.2%)
	Unemployed	168(98.8%)
Previous psychiatric illness	Yes	0
	No	170(100%)
Marriage	Non-consanguineous	116(68.3%)
	Consanguineous	54(31.7%)
Family type	Joint	143(84.2%)
	Nuclear	27(15.8%)
Spouse education	Illiterate	30(17.7%)
	Literate	140(82.3%)
Spouse employment	Employed	166(97.7%)
	Unemployed	4(2.3%)
Spouse h/o medical illness	Yes	166(97.7%)
	No	4(2.3%)
Spouse h/o substance abuse	Yes	18(10.6%)
	No	152(89.4%)
Type of addiction	Alcohol	10(20%)
	Nicotine	8(16%)

In the postnatal population, labor onset was induced in 96(56.5%) mothers and was spontaneous in 74(43.5%). The delivery modes were normal vaginal in 94(55.3%), caesarean section in 52(30.6%), and instrumental in 24(14.1%) patients. Birth companions were present for 100(58.8%) mothers and absent for 70(41.2%). The babies showed no complications in 114(67.1%), low birth weight in 4(2.3%), and NICU admission in 52(30.6%). There were 82(51.8%) males and 88(48.2%) females; 148(87.1%) rated their caregiver's emotional support as very good and 32(12.9%) as good. Breastfeeding problems were observed in 18(10.6%) mothers. Spouse support was very good in 150(88.2%), good in 10(5.8%), fair in 6(3.5%), and poor in 4(2.3%) patients. Extended family support was very good in 124(72.9%), good in 34(30%), fair in 6(3.5%), and poor in 6(3.5%) patients (Table 3).

Table 3: Labor, delivery, and support characteristics of postnatal mothers

		Postnatal mother (n=170)
Onset of labor	Induced	96(56.5%)
	Spontaneous	74(43.5%)
Mode of delivery	C section	52(30.6%)
	Instrumental	24(14.1%)
	Normal vaginal delivery	94(55.3%)
Birth companion	Yes	100(58.8%)
	No	70(41.2%)
Baby condition	No complications	114(67.1%)
	LBW	4(2.3%)
	NICU	52(30.6%)
Sex of the baby	Male	82(51.8%)
	Female	88(48.2%)
Emotional support from the caregiver	Good	32(12.9%)
	Very good	148(87.1%)
Problem with breastfeeding	Yes	18(10.6%)
	No	152(89.4%)
Self-perception regarding spouse support	Fair	6(3.5%)
	Good	10(5.8%)
	Poor	4(2.3%)
	Very good	150(88.2%)
Self-perception regarding extended family support	Fair	6(3.5%)
	Good	34(30%)
	Poor	6(3.5%)
	Very good	124(72.9%)

Most antenatal mothers showed minimal depression, with 180(69.2%) scoring 1–4 on the PHQ-9. Mild depression was reported in 49(18.8%), moderate depression in 21(8.1%), and moderately severe depression in 10(3.8%), with no severe cases reported. Regarding anxiety levels on GAD-7, 199(76.5%) had minimal anxiety (0–4), 42(16.1%) had mild anxiety (5–9), 19(7.3%) had moderate anxiety (10–14), and no cases of severe anxiety (>15) were reported (Table 4).

Table 4: Depression and anxiety levels among antenatal mothers

		Antenatal mother (n=260)
Depression (PHQ-9)	Minimal depression (1-4)	180(69.2%)
	Mild depression (5-9)	49(18.8%)
	Moderate depression (10-14)	21(8.1%)
	Moderately severe depression (15-19)	10(3.8%)
	Severe depression (20-27)	0

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Anxiety (GAD-7)	Minimal Anxiety (0-4)	199(76.5%)
	Mild Anxiety (5-9)	42(16.1%)
	Moderate Anxiety (10-14)	19(7.3%)
	Severe Anxiety (>15)	0

Among postnatal mothers, minimal depression was reported by 97 (57%), mild depression by 48 (28.2%), moderate depression by 15 (8.8%), moderately severe depression by 7 (4.1%), and severe depression by 3 (1.7%). Anxiety levels showed minimal anxiety in 102 (60%), mild anxiety in 51 (30%), moderate anxiety in 15 (8.8%), and severe anxiety in 2 (1.1%) mothers (Table 5).

Table 5: Depression and anxiety levels among postnatal mothers

		Postnatal mother (n=170)
Depression (PHQ-9)	Minimal depression (1-4)	97(57%)
	Mild depression (5-9)	48(28.2%)
	Moderate depression (10-14)	15(8.8%)
	Moderately severe depression (15-19)	7(4.1%)
	Severe depression (20-27)	3(1.7%)
Anxiety (GAD-7)	Minimal Anxiety (0-4)	102(60%)
	Mild Anxiety (5-9)	51(30%)
	Moderate Anxiety (10-14)	15(8.8%)
	Severe Anxiety (>15)	2(1.1%)

DISCUSSION

Our study highlights the significant psychological vulnerabilities that women experience during pregnancy and the postpartum period. Pregnancy, particularly with associated complications such as unplanned pregnancies, miscarriages, and unexpected caesarean deliveries, significantly elevates the risk of postpartum depression. Acute psychiatric episodes, particularly psychosis or bipolar disorder relapses, are significantly higher during reproductive years, a period when anxiety and mood disorders commonly emerge.[12]

The prevalence rates observed in our study were moderate to severe depression at 11.9% antenatally and 14.6% postnatally, which aligns with global trends and previous research by Kumar et al., which also identified a higher incidence of depression post-delivery, due to additional childbirth stressors and neonatal care demands.[13] In contrast, a study by Nguyen et al. reported a 23% prevalence of depression among pregnant women (95% CI: 20.1–26.0).[14]

In our study, anxiety prevalence rates were also significant, recorded at 23.4% antenatally and rising to 40% postnatally. Similar to the findings of Fisher et al., who reported the frequent co-occurrence of anxiety with depression during the perinatal period.[15] A study by Cena et al. observed postnatal anxiety at 34.5% within 1–24 weeks, compared to ours higher 40%, though both indicate significant postpartum anxiety prevalence.[16]

Medical comorbidities, including anaemia (31.5%), GDM (19.6%), GHTN (25.7%), and hypothyroidism (11.9%), further highlight common stressors during pregnancy. These comorbidities, comparable to findings from Cunningham et al., suggest their role as significant predictors of psychiatric morbidity, exacerbating maternal anxiety regarding maternal and foetal well-being.[17] Excessive vomiting reported by 25.4% of participants further contributed to physical and emotional distress, paralleling findings of Abdelhafez et al. in broader antenatal research highlighting physical discomfort's role in psychiatric outcomes.6 Nguyen et al. found strong associations between low social support and depression in women, both with GDM (aOR = 6.16, 95% CI: 2.35–16.12) and without (aOR = 2.81, 95% CI: 1.67–4.75).[14]

Hormonal fluctuations characteristic of pregnancy, particularly oestrogen and progesterone changes, significantly contribute to mood regulation challenges and increase vulnerability to psychiatric disorders. Elevated cortisol levels, indicative of stress, exacerbate the risk, particularly among women predisposed to psychiatric conditions.[6] Sudden postpartum hormonal shifts, physical demands, and sleep deprivation have been confirmed as triggers of psychiatric morbidity. Breastfeeding difficulties, affecting 10.6% of participants, further increased stress and anxiety, mirroring research highlighting breastfeeding as a significant but challenging aspect of maternal well-being.[12]

Psychologically, transitioning into motherhood introduces significant identity and role changes, promoting feelings of inadequacy and anxiety, particularly among younger and less experienced mothers. Unemployment among most participants likely intensified feelings of dependency and loss of autonomy, increasing susceptibility to psychiatric conditions.[18]

Our study confirmed that strong social support from both spouses and extended families is essential for mitigating perinatal psychiatric issues. Mothers reporting very good support from spouses and family reported lower psychiatric morbidity levels, consistent with Fisher's findings highlighting social support's protective effect against perinatal psychiatric conditions.[15] Nguyen et al. revealed that women who confided in others rather than husbands had increased odds of depression (aOR = 2.36; 95% CI: 1.48–3.75), and those living away from birth

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communities had a higher risk (aOR = 1.74; 95% CI: 1.19–2.56).[14]

Spousal factors, such as a history of medical illness (3.1%) and substance abuse (9.2%, primarily alcohol and nicotine), significantly influenced maternal mental health outcomes. These findings highlight the significant negative impact of spousal substance abuse on maternal psychiatric health and the critical need for targeted family-focused interventions.[6]

Limitations

The cross-sectional design limits inferring causality between risk factors and psychiatric morbidity by capturing only one-time points of data collection. Self-reported socio-demographic data and perceived support may have a recall or social desirability bias. Although the PHQ-9 and GAD-7 were used as screening tools, the lack of clinical interviews limits diagnostic confirmation. Despite the diverse participants, the study's geographic restriction may limit the generalisability of the results to populations with different cultural, economic, or healthcare.

CONCLUSION

Our study confirmed that psychiatric morbidity significantly affects antenatal and postnatal mothers. While most mothers experience minimal symptoms, many experience mild to severe depression and anxiety during pregnancy and after childbirth. Notably, psychiatric symptoms persist and increase during the postpartum period. These results highlight the need for systematic mental health screening and intervention throughout pregnancy and the postpartum period. Strengthening spousal and family support can play a key role in reducing psychiatric morbidity and improving the well-being of mothers and infants.

REFERENCES

1. Szemplińska A, Opala D, Osuch D, Staszczyk I, Drabik A, Szczotka D, et al. Psychiatric disorders in pregnancy and the postpartum period - etiology, description and impact, treatment - review. ArveMED 2024;14. https://doi.org/10.35630/2024/14/6.609.
2. Goyal S, Gupta B, Sharma E, Dalal PK, Pradeep Y. Psychiatric morbidity, cultural factors, and health-seeking behaviour in perinatal women: A cross-sectional study from a tertiary care centre of north India. Indian J Psychol Med 2020; 42:52–60. https://doi.org/10.4103/IJPSYM.IJPSYM_96_19.
3. Segal DL. Diagnostic and statistical manual of mental disorders (DSM-IV-TR). The Corsini Encyclopedia of Psychology 2010. https://doi.org/10.1002/9780470479216.corpsy0271
4. Baldaçara L, Leite V da S, Teles ALS, Silva AG da. Puerperal psychosis: an update. Rev Assoc Med Bras 2023;69: e2023S125. https://doi.org/10.1590/1806-9282.2023S125.
5. Gold KJ, Marcus SM. Effect of maternal mental illness on pregnancy outcomes. Expert Rev Obstet Gynecol 2008; 3:391–401. https://doi.org/10.1586/17474108.3.3.391.
6. Abdelhafez MA, Ahmed KM, Ahmed NM, Ismail M, Mohd Daud MNB, Ping NPT, et al. Psychiatric illness and pregnancy: A literature review. Heliyon 2023;9: e20958. https://doi.org/10.1016/j.heliyon.2023.e20958.
7. Wang Z, Liu J, Shuai H, Cai Z, Fu X, Liu Y, et al. Mapping global prevalence of depression among postpartum women. Transl Psychiatry 2021; 11:543. https://doi.org/10.1038/s41398-021-01663-6.
8. Vigod SN, Villegas L, Dennis C-L, Ross LE. Prevalence and risk factors for postpartum depression among women with preterm and low-birth-weight infants: a systematic review: Risk of postpartum depression in mothers of preterm and low-birth-weight infants. BJOG 2010; 117:540–50. https://doi.org/10.1111/j.1471-0528.2009.02493.x.
9. Stojanov J, Stanković M, Žikić O, Antonijević J. Postpartum psychiatric disorders: Review of the research history, classification, epidemiological data, etiological factors and clinical presentations. Acta Fac Medicae Naissensis 2019; 36:167–76. https://doi.org/10.5937/afmnai1903167s.
10. Jha S, Salve HR, Goswami K, Sagar R, Kant S. Burden of common mental disorders among pregnant women: A systematic review. Asian J Psychiatr 2018; 36:46–53. https://doi.org/10.1016/j.ajp.2018.06.020.
11. Waqas A, Koukab A, Meraj H, Dua T, Chowdhary N, Fatima B, et al. Screening programs for common maternal mental health disorders among perinatal women: report of the systematic review of evidence. BMC Psychiatry 2022; 22:54. https://doi.org/10.1186/s12888-022-03694-9.
12. Lok IH, Neugebauer R. Psychological morbidity following miscarriage. Best Pract Res Clin Obstet Gynaecol 2007; 21:229–47. https://doi.org/10.1016/j.bpobgyn.2006.11.007.
13. Kumar N, Nagaraj AKM, Koudike U, Majgi SM. Psychiatric morbidity and correlates in postpartum women in a tertiary care hospital. Indian J Psychol Med 2016; 38:309–14. https://doi.org/10.4103/0253-7176.185956.
14. Nguyen AT, Dang K, Minh Le H, Nguyen TD, W Meyrowitsch D, C Bygbjerg I, et al. social support and symptoms of antenatal depression among women screened for gestational diabetes mellitus: A cross-sectional study in Northern Vietnam (the VALID II study). PLoS One 2024;19: e0314608. https://doi.org/10.1371/journal.pone.0314608.
15. Fisher J, Mello MC, 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; 90:139–49. https://doi.org/10.2471/blt.11.091850
16. Cena L, Gigantesco A, Mirabella F, Palumbo G, Trainini A, Stefana A. Prevalence of maternal postnatal anxiety and its association with demographic and socioeconomic factors: A multicentre study in Italy. Front Psychiatry 2021; 12:737666. https://doi.org/10.3389/fpsyt.2021.737666.
17. Cunningham SD, Magriples U, Thomas JL, Kozhimannil KB, Herrera C, Barrette E, et al. Association between maternal comorbidities and emergency department use among a national sample of commercially insured pregnant women. Acad Emerg Med 2017; 24:940–7. https://doi.org/10.1111/acem.13215.
18. Howard LM, Khalifeh H. Perinatal mental health: a review of progress and challenges. World Psychiatry 2020; 19:313–27. https://doi.org/10.1002/wps.20769.

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