Burden and Determinants of Generalized Anxiety Disorder and Depression Among Antenatal Females in an Urban Area of North India: A Cross-Sectional Study

Nitika Sharma[1], Garima Sangwan[1], Savita Chahal[2], Manju Rani[3], Dhriti Bapna[1], Rajesh Garg[4]

[1]Assistant Professor, [4]Professor and Head Department of Community Medicine, Kalpana Chawla Government Medical College, Karnal, India

[2]Associate Professor, Department of Psychiatry, Kalpana Chawla Government Medical College, Karnal, India

[3]Public Health Specialist, Department of Dermatology and STD, VMMC and Safdarjung Hospital, New Delhi, India

Correspondence: Dr Nitika Sharma, Email: 245nitikasharmagmc@gmail.com

Abstract:

Introduction: Anxiety and depression are the most common mental health disorders experienced during pregnancy having a reported between 8.7% and 65% in India. Antenatal depression has been linked to negative health-related behaviors and adverse outcomes among the pregnant females and their neonates. **Objective:** The present study was designed with the primary aim of determining the prevalence and determinants of depression and generalized anxiety disorder (GAD) among antenatal females. **Methods:** A community-based, cross-sectional study was carried out between February 2023 to August 2024 among 220 antenatal females selected through simple random sampling. A pre- tested semi-structured interview schedule, GAD-7 (Generalized Anxiety Disorder-7) and PHQ-9 (Patient Health Questionnaire-9) scales were used for data collection. Descriptive statistics were applied for quantitative data and chi square test was applied to the categorical data. **Results:** There were 216 participants and among them, 26.9% had some degree of depression. Mild, moderate and severe anxiety were seen in 25.9%, 5.6% and 2.8% of the participants, respectively. Factors like advanced maternal age, lower socioeconomic status, nuclear family structure, lifetime and current experiences of domestic violence, unwanted pregnancy, advanced gestation and a male child preference were significantly associated (p value <0.05) with antenatal depression and anxiety. **Conclusion:** A high prevalence of antenatal depression and anxiety was associated with various socio-demographic and obstetric factors. The use of screening tools was found to be a feasible method to identify antenatal depression and anxiety.

Keywords: Anxiety, Depression, Mental Health, Prevalence

Introduction:

Although mental health is an important component of health, it often remains neglected. Over the past few years, mental health has been recognized as a priority area in public health policies worldwide and has been included in Sustainable Development Goals (SDGs). In India, an estimated 14.3% of the population is reported to suffer from mental health disorders, with depression and generalized anxiety disorder being the most common and having a prevalence of 3.3% each.[1]

Pregnancy is a physiological state in which a female experiences various bodily and hormonal changes, which may lead to fear, confusion, stress and mental health disorders. Anxiety and depression are the most

Quick Response Code	Access this article online	How to cite this article :
	Website : www.healthlinejournal.org	Sharma N, Sangwan G, Chahal S, Rani M, Bapna D, Garg R. Burden and Determinants of Generalized Anxiety Disorder and Depression Among Antenatal Females in an Urban Area of North India: A Cross-Sectional Study. Healthline. 2026;17(1): 31-40
	DOI : 10.51957/Healthline_793_2026	

Received : 16-09-2025 **Accepted** : 19-02-2026 **Published :** 31-03-2026

common mental health disorders experienced during pregnancy, and they may adversely affect maternal and fetal outcomes.[2] The prevalence of co-morbid anxiety and depression among pregnant women has been reported to range from 9.5% to 13.5% in the a study conducted in Ethiopia.[3] The prevalence of common mental disorders during pregnancy is reported between 8.7% and 65% in India.[4-9] Even in non-pregnant females, the reported prevalence of depression in India is high (15%).[10]

Perinatal depression is influenced by a number of risk factors, including increased somatic symptoms, exposure to intimate partner violence, lack of social support, unintended pregnancy and high rates of depression are also observed among those having a prior history of depression. Antepartum depression has been linked to negative health-related behaviors and adverse outcomes, including poor nutrition, increased substance use, inadequate prenatal care, pre-eclampsia, low birth weight, preterm delivery, postpartum depression, and suicide. Women who experience depression in the antenatal period often continue to experience depressive symptoms in the postpartum period, with over 54% of those with postpartum depression reporting onset of depressive episodes before or during pregnancy.[11]

Addressing mental health during pregnancy is important to improve both maternal and neonatal outcomes. The community, in general, remains unaware of their mental health status, especially when the symptoms are of mild to moderate severity. However, the majority of existing evidence on burden of antenatal anxiety and depression in India comes from the hospital based studies which may not reflect the true community prevalence. Such situation calls for an in-depth community-based inquiry during the antenatal period to screen for these disorders and their timely and adequate management. There are different validated scales available globally that can be used in community settings to screen for common mental health disorders and classify the severity of disease.[12,13]

The present study was designed with the primary aim of determining the prevalence and determinants of depression and generalized anxiety disorder (GAD) among antenatal females.

Methods:

Study area and characteristics: This community-based cross-sectional study was carried out in the urban field practice area of the Department of Community Medicine, Kalpana Chawla Government Medical College, Karnal, Haryana, which caters to a population of approximately 50,000 (as reported in the annual survey by field workers). The study was carried out for one and a half years, from February 2023 to August 2024, among antenatal females in the study area.

Sample size: The sample size was estimated on the basis of the prevalence of antenatal depression among hospital attendees in the study conducted by Babu *et al.* (2018)[7]. Using this prevalence (8.7%) at the 95% confidence interval and 4% absolute precision, the sample size was determined to be 198. After adjusting for an anticipated 10% non-response rate, the final sample size for the study was 220.

Study tool: A pre-tested semi-structured interview schedule was used for data collection. The interview schedule consisted of three parts: the first part included questions pertaining to demographic information, and the second part included trimester-wise health and physical examination details. One of the socio-demographic determinants taken was Domestic violence, which encompasses any act that (a) harms or injures or endangers the health, safety, life, limb or well-being, whether mental or physical, and includes causing physical, sexual, verbal and/or emotional abuse and economic abuse; or (b) harasses, harms, injures or endangers the aggrieved person with a view to coerce her or any other person related to her to meet any unlawful demand for any dowry or other property or valuable security; or (c) has the effect of threatening the aggrieved person or any person related to her by any conduct mentioned previously; or (d) otherwise injures or causes harm, whether physical or mental, to the aggrieved person (The Protection of Women from Domestic Violence Act, 2005).[13] The third part had a structured schedule to collect information about anxiety and depression using the Generalized Anxiety Disorder 7-item scale (GAD-7) and Patient Health Questionnaire (PHQ-9), which are validated screening scales for

anxiety and depression, respectively.[12-15] Both of these tools are Likert response-based and use a scoring system to assess the severity of anxiety and depression. In the GAD-7 scale, scores 0-4, 5-9, 10-14 and 15-21 signify minimal, mild, moderate and severe anxiety. As per PHQ-9, a score of 1-4 signifies no/minimal depression (taken as no depression in the representation in the text), 5-9 signifies mild depression, 10-14 signifies moderate depression, 15-19 signifies moderately severe depression, and 20-27 signifies severe depression.[12,14-16]

The list of currently pregnant females (nearly 600) was obtained from UPHC and field-level workers. The study participants were randomly selected using the random number generator software. The selected participants were visited at home by the authors along with the frontline workers, and data collection was performed after the initial rapport was built up.

Data analysis: The data was entered into MS Excel, and SPSS v23 was used for data analysis. The quantitative data were expressed as the mean and standard deviation, and the categorical data were expressed as percentages. The chi-square test and Fisher's exact test (wherever applicable) were used to estimate the association between variables, as necessary. A p-value of <0.05 was considered statistically significant.

The inclusion criteria: All pregnant females in any trimester of pregnancy, who had resided in the study area for at least the last six months and who were willing to provide consent.

The exclusion criteria: those who were already taking medication for any psychiatric morbidity.

Ethical considerations: Prior approval was obtained from the Institutional Ethics Committee, KCGMC, Karnal. Written consent was obtained from the participants to participate in the study. The confidentiality and anonymity of the participants were maintained during the process of the study, including the final report. Any participant who screened positive for GAD and/or depression was referred to the Department of Psychiatry, Kalpana Chawla Government College, Karnal, for further management.

Results:

A total of 216 pregnant females consented to participate in the study, thus accounting for a 98% response rate. The mean age of the study participants was 25.2±4.76 years (Range 18-40 years). The majority (95.4%) of participants were housewives, the native place of the majority (66.2%) of participants was an urban area, and 1.4% of the participants were diagnosed with any chronic disease. The majority (79.6%) had done their pregnancy registration within 12 weeks of gestation.

Table 1: Socio-demographic characteristics of the study participants (N=216)

Variable	**Frequency** (%age)
AGE (in years)	
≤25	123 (56.9)
26-35	89 (41.2)
>35	4 (1.9)
Education	
Illiterate	9 (4.2)
Up to the middle school	33 (15.3)
Secondary and Higher Secondary	134 (62)
Graduate and above	40 (18.5)
Socio-economic Status	
BPL	121 (56)
APL	95 (44)
Type of Family	
Nuclear	95 (44)
Joint	121 (56)
Migration Status	
Migrated	23 (10.6)
Non-migrated	193 (89.4)
Lifetime Experience of Domestic Violence (DV)	
No	160 (74.1)
Yes	56 (25.9)
Experienced DV in the last three months	
No	200 (92.6)
Yes	16 (7.4)
Experienced DV in current pregnancy	
No	209 (96.8)
Yes	7 (3.2)

Table 1 presents the socio-demographic characteristics of the study participants. Among the participants, the majority (56.9%) were less than or equal to 25 years old, and nearly 2% were older than 35 years. The majority of the study participants (95.4%) were housewives. Sixty-two per cent of the antenatal women were educated until secondary or higher secondary, followed by graduates and above (18.5%), up to middle school (15.3%), and 4.2% were illiterate. Fifty-six per cent of the participants were below the poverty line, and an equal proportion of participants lived in joint families. Approximately two-thirds (66.2%) of the participants were native to urban areas. 10.9% of the pregnant women were migrants.

Approximately one-fourth (25.9%) of the participants reported lifetime experience of domestic violence (DV), whereas 7.4% had experienced DV in the last three months and 3.2% in their current pregnancy.

Table 2 shows that the current pregnancy was reported as wanted by the majority (91.2%) of the antenatal women. Approximately 45.4% of the pregnant females reported a family preference for male children.

Table 2: Obstetric characteristics of the study participants (N=216)

Variable	Frequency (%)
Current pregnancy intent	
Wanted	197 (91.2)
Unwanted	19 (8.8)
Male child preference in the family	
Yes	98 (45.4)
No	118 (54.6)
Period of gestation (trimester)	
First	44 (20.4)
Second	108 (50)
Third	64 (29.6)
Parity Status	
Primigravida	102 (47.2)
Multigravida	114 (52.8)
Abortion History (n=114)	
No	96 (44.4)
Yes	18 (8.3)

Half of the participants were in the second trimester of pregnancy, 29.6% were in the third trimester, and the remaining 20.4% were in the first trimester. More than half (52.8%) of the participants were multigravida. A history of abortion was reported by 8.3% of the participants.

Figure 1 shows that 65.7% of the participants had minimal GAD, and nearly a quarter had mild (25.9%) GAD.

Figure 2 shows the grading of depression among the study participants according to the PHQ-9. Approximately three-fourths (73.1%) of the participants did not suffer from depression. Mild, moderate and moderately severe depression were found in 19.9%, 5.1% and 1.9% of the antenatal females, respectively.

Table 3 shows that the migrants had a higher proportion of minimal anxiety (43.5%), which was statistically significant. The participants having age between 26-35 years, those belonging to nuclear

Figure 1: Generalised Anxiety Disorder (GAD) Classification of study participants (N=216)

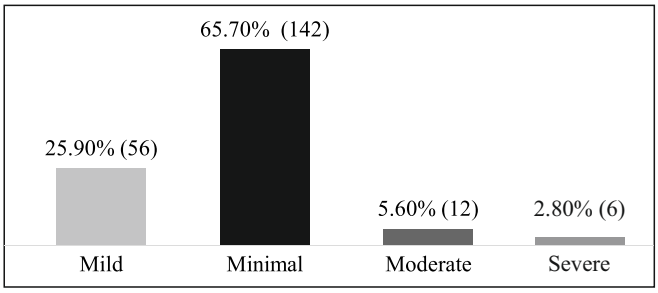

Figure 2: Depression Grading As Per PHQ-9 Among Study Participants (N=216)

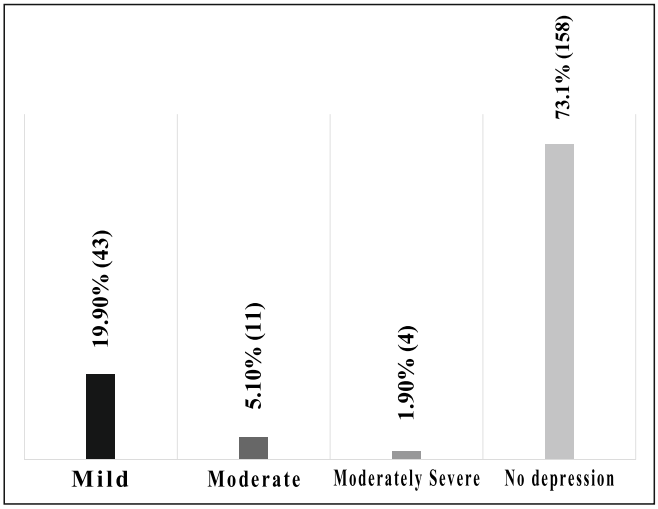

Table 3: Distribution of anxiety grades according to socio-demographic and obstetric characteristics of participants (N=216)

Variable	Minimal [n=142] n(%)	Mild [n=56] n(%)	Moderate [n=12] n(%)	Severe [n=6] n(%)	p-value
Age (in years)					
≤25	87 (70.7)	29 (23.6)	4 (3.3)	3 (2.4)	0.046*
26-35	54 (60.7)	26 (29.2)	7 (7.9)	2 (2.2)	
>35	1 (25)	1 (25)	1 (25)	1 (25)	
Education					
Illiterate	3 (33.3)	4 (44.4)	1 (11.1)	1 (11.1)	0.060*
Up to the middle school	20 (60.6)	9 (27.3)	3 (9.1)	1 (3)	
Secondary and Higher Secondary	91 (67.9)	36 (26.9)	6 (4.5)	1 (0.7)	
Graduate and above	28 (70)	7 (17.5)	2 (5)	3 (7.5)	
Socioeconomic status					
BPL	76 (62.8)	33 (27.3)	8 (6.6)	4 (3.3)	0.750*
APL	66 (69.5)	23 (24.2)	4 (4.2)	2 (2.1)	
Migration Status					
Migrated	8 (34.8)	10 (43.5)	4 (17.4)	1 (4.3)	0.031*
Non-migrated	134 (69.4)	46 (23.8)	8 (4.2)	5 (2.6)	
Type of Family					
Nuclear	41 (43.2)	42 (44.2)	9 (9.5)	3 (3.1)	<0.001*
Joint	101 (83.4)	14 (11.6)	3 (2.5)	3 (2.5)	
Lifetime Experience of Domestic Violence (DV)					
No	106 (66.3)	47 (29.3)	5 (3.1)	2 (1.3)	0.003*
Yes	36 (64.3)	9 (16.1)	7 (12.5)	4 (7.1)	
Experienced DV in the last three months					
No	137 (68.5)	53 (26.5)	7 (3.5)	3 (1.5)	<0.001*
Yes	5 (31.2)	3 (18.8)	5 (31.2)	3 (18.8)	
Experienced DV in current pregnancy					
No	141 (67.4)	52 (24.9)	11 (5.3)	5 (2.4)	0.009*
Yes	1 (14.3)	4 (57.1)	1 (14.3)	1 (14.3)	
Current pregnancy intent					
Wanted	133 (67.5)	52 (26.4)	8 (4.1)	4 (2)	0.006*
Unwanted	9 (47.3)	4 (21.1)	4 (21.1)	2 (10.5)	
Male child preference in the family					
Yes	55 (56.1)	35 (35.7)	6 (6.1)	2 (2.1)	0.018*
No	87 (73.7)	21 (17.8)	6 (5.1)	4 (3.4)	
Period of gestation (trimester)					
First	31 (70.5)	10 (22.7)	2 (4.5)	1 (2.3)	0.009*
Second	81 (75)	22 (20.4)	3 (2.8)	2 (1.8)	
Third	30 (46.9)	24 (37.5)	7 (11)	3 (4.6)	
Parity Status					
Primigravida	64 (61.6)	31 (29.8)	5 (4.8)	4 (3.8)	0.463*
Multigravida	78 (69.6)	25 (22.3)	7 (6.3)	2 (1.8)	
Abortion History (n=114)					
No	63 (65.7)	28 (29.2)	4 (4.1)	1 (1)	0.027*
Yes	6 (33.3)	9 (50)	2 (11.1)	1 (5.6)	

*Fisher's Exact Test

Table 4: Distribution of depression grades according to socio-demographic and obstetric factors (N=216)

Variable	No Depression (n=158) n(%)	Mild (n=43) n(%)	Moderate (n=11) n(%)	Moderately (n=4) n(%)	p-value
Age (in years)					
≤25	86 (69.9)	30 (24.4)	6 (4.9)	1(0.8)	0.019*
26-35	71 (79.8)	10 (11.2)	5 (5.6)	3 (3.4)	
>35	1 (25)	3 (75)	0 (0)	0 (0)	
Occupation of participant					
Housewife/homemaker	154 (74.6)	41 (20)	9 (4.4)	2 (1)	0.003*
Labourer	2 (40)	1 (20)	1 (20)	1 (20)	
Employed in the private sector	2 (40)	1 (20)	1 (20)	1 (20)	
Education					
Illiterate	6 (66.7)	2 (22.2)	1 (11.1)	0 (0)	0.492*
Up to the middle class	21 (63.6)	8 (24.2)	2 (6.1)	2 (6.1)	
Secondary and Higher Secondary	98 (73.1)	28 (20.9)	6 (4.5)	2 (1.5)	
Graduate and above	33 (82.5)	5 (12.5)	2 (5)	0 (0)	
Socioeconomic status					
BPL	81 (67)	31 (25.6)	8 (6.6)	1 (0.8)	0.026*
APL	77 (81)	12 (12.6)	3 (3.2)	3 (3.2)	
Migration Status					
Migrated	10 (43.5)	8 (34.8)	4 (17.4)	1(4.3)	0.002*
Non-migrated	148 (76.7)	35 (18.1)	7 (3.6)	3 (1.6)	
Type of Family					
Nuclear	61(64.2)	27 (28.4)	4 (4.2)	3 (3.2)	0.015*
Joint	97 (80.2)	16 (13.2)	7 (5.8)	1 (0.8)	
Ever experienced Domestic Violence (DV)					
No	124 (78)	26 (16.4)	7 (4.4)	2 (1.2)	0.039*
Yes	34 (59.7)	17 (29.8)	4 (7)	2 (3.5)	
Experienced DV in the last three months					
No	151 (75.5)	37 (18.5)	9 (4.5)	3 (1.5)	0.016*
Yes	7 (43.8)	6 (37.5)	2 (12.5)	1 (6.2)	
Experienced DV in current pregnancy					
No	155 (74.5)	41 (19.8)	9 (4.3)	3 (1.4)	0.012*
Yes	3 (37.5)	2 (25)	2 (25)	1 (12.5)	
Current pregnancy intent					
Wanted	142 (72.1)	42 (21.3)	11 (5.6)	2 (1)	0.022*
Unwanted	16 (84.2)	1 (5.3)	0 (0)	2 (10.5)	
Male child preference in the family					
Yes	62 (63.3)	26 (26.5)	8 (8.2)	2 (2)	0.015*
No	96 (81.4)	17 (14.4)	3 (2.5)	2 (1.7)	
Period of gestation (trimester)					
First	34 (77.2)	8 (18.2)	1 (2.3)	1 (2.3)	0.025*
Second	87 (80.6)	16 (14.8)	3 (2.8)	2 (1.8)	
Third	37 (57.8)	19 (29.6)	7 (11)	1(1.6)	
Parity Status					
Primigravida	75 (73.5)	19 (18.6)	6 (5.9)	2 (2.0)	0.932*
Multigravida	83 (72.8)	24 (21.1)	5 (4.4)	2 (1.7)	
Abortion History (n=114)					
No	67 (69.8)	22 (22.9)	5 (5.2)	2 (2.1)	0.582*
Yes	16 (88.9)	2 (11.1)	0 (0)	0 (0)	

*Fisher's Exact Test

families, those with a history of domestic violence (lifetime experience, in the previous three months or during the current pregnancy) were found to have higher proportions of mild anxiety (29.2%, 44.2%, 16.1%, 18.8% and 57.1%, respectively), and these associations were highly statistically significant.

There was no statistically significant association between anxiety grades and the education level, socioeconomic status, and parity status of the participants.

A statistically significant association was found between anxiety grades and unwanted pregnancies, male child preference in the family, duration of pregnancy and abortion history of participants.

It was observed in Table 4 that there was a statistically significant association between depression grade and the participants' age. The highest proportion of participants with no, mild, moderate and moderately severe depression was found in the 26–35 year age group (79.8%), >35 years (75%), 26–35 years (5.6%) and 26–35 years (3.4%), respectively.

Participants who were below the poverty line had higher rates of mild or moderate depression (25.6% and 6.6%, respectively). Migrants were also found to have a higher proportion of mild (34.8%), moderate (17.8%) or moderately severe depression (4.3%).

Those participants who had nuclear families and had a history of domestic violence in the last three months or in the current pregnancy were found to have a statistically significantly higher proportion of depression. No statistically significant associations were found between the grade of depression and education level.

Among the participants with unwanted pregnancies, 10.5% had moderately severe and 26.5% had mild depression, and the association was statistically significant. A longer duration of pregnancy was also significantly associated with different grades of depression. In the third trimester of pregnancy, 29.6% of the participants had mild, and 11% had moderate depression.

No significant association was observed between depression grade and the parity status or history of abortion.

Discussion

The antenatal period is characterized by physical, physiological and many hormonal changes in the body. Although females visit health centers for ANC service utilization, screening for common mental disorders is not performed routinely, even though the conditions might be adversely affecting both the mother and the fetus. The current study, therefore, aimed to estimate the burden of depression and anxiety among antenatal women using the validated screening tools PHQ-9 and GAD-7, respectively.

The majority of participants in the current study were up to 25 years of age, were housewives, were educated to secondary and higher secondary levels, lived below the poverty line, and lived in joint families. Nearly a quarter of the participants had experienced domestic violence in their lifetime. Among the obstetric characteristics, most of the participants were in their second trimester of pregnancy. Nearly half of the participants were expecting their first child and reported a male child preference in the family. Approximately 9% of the current pregnancies were unwanted, and 8.3% had a previous history of abortion.

The current study revealed that 26.8% of the participants had some degree of depression, and among these, 1.9% had moderately severe depression. No participant was found to have severe depression. Systematic review of studies done in Indian settings by Arora *et al.*[17], and Sahoo *et al.*[18] reported that the prevalence of antenatal depression was between 9.18% and 65%, and between 3.8% and 65%, respectively. The prevalence of depression in the current study lies within the range reported by these systematic reviews. Similar proportions of depression as the current study were reported in studies by Kantipudi *et al.*[5] (22%), Prabhu *et al.*[19] (21.98%), and Rehman *et al.*[20] (26%). Lower percentages of depression were reported in studies by Gupta *et al.*[21] (11.8%), Rayapureddy *et al.*[22] (16.7%), Kamali *et al.*[23] (14.62%), and Babu *et al.*[7] (8.7%). These variations in the study results can be attributed to the

different scales used to assess depression across these studies, which use different sets of questions and cutoff points for classification, and to the different study settings (hospital vs. community-based setting) and characteristics of the study participants. Studies conducted across the globe also report that the prevalence of antenatal depression is between 11.9% and 65%.[3,24-26]

Some hospital-based studies and studies performed among high-risk groups reported higher prevalence of depression, ranging between 32% and 42%.[2,27,28] These studies also used different assessment scales than the current study did to estimate depression. As hospital-based studies are likely to involve a greater burden of patients with complications and co-morbidities, this could be a likely factor for the higher prevalence of depression reported in these studies.

Various demographic and obstetric factors, such as increasing maternal age, lower socioeconomic status, nuclear family structure, lifetime or current experience of domestic violence, unwanted pregnancy, advanced gestation and male child preference, were significantly associated with depression in the current study. Similar associations have been reported in studies by Kantipudi *et al.*[5] (22%), Prabhu *et al.*[19] (21.98%), Rehman *et al.*[20] (26%), Gupta *et al.*[21] (11.8%), Rayapureddy *et al.*[22] (16.7%), Kamali *et al.*[23] (14.62%), Babu *et al.*[7], Sahoo *et al.*[18], Bedaso *et al.*[24], and Dadi *et al.*[26]. These studies also revealed the role of social support in depression, with a lack of social support being significantly associated with depression.

Antenatal anxiety has been reported less commonly in the literature. The current study revealed that 65.7% of the participants had minimal anxiety, 25.9% had mild anxiety, 5.6% had moderate anxiety, and 2.8% had severe anxiety based on GAD-7 scale. In a systematic review of Indian studies, Sahoo *et al.*[18] reported that the prevalence ranged from 13%-55%. Kantipudi *et al.*[5]and Tripura *et al.*[3] also used the GAD-7 scale in their hospital-based studies and reported that the prevalence of antenatal anxiety was 23% and 70%, respectively. Studies by Rayapureddy *et al.*[22] (31.2%), Thomas *et al.*[30] (22.6%), and Ruban *et al.*[27] (48.5%) reported lower prevalence of antenatal anxiety than the current study. Studies performed in various countries have reported that the prevalence of antenatal anxiety between 4.2% and 35%.[3,24,25,29,31] The current study reported a higher prevalence of antenatal anxiety. Usually, in hospital settings, a higher patient load might lead to less time being devoted to each patient. In our community-based study, we could invest more time with the participants, leading to their increased engagement in the study process and better response to the tool used. Tripura S *et al.*[2] conducted their study in a high-risk pregnancy population, leading to a higher prevalence of anxiety among such females due to awareness of the problem and its consequences.

Among the demographic and obstetric factors, those significantly associated with antenatal anxiety were maternal age, nuclear family structure, lifetime and current experiences of domestic violence, unwanted pregnancy, advanced gestation, male child preference and previous history of abortion.

In the present study, participants living in nuclear families were more likely to have depression and anxiety, which might be due to the limited social support associated with the nuclear family system. Moreover, domestic violence could also result in marital disharmony and decreased partner support, leading to the risk of depression and anxiety. These findings emphasize the need to raise awareness about the role of spouses in successful and smooth pregnancies, as well as to establish culturally appropriate peer support groups to effectively navigate the challenges of pregnancy.

Male child preference is a significant phenomenon in the Indian subcontinent, specifically in the area in which the study has been undertaken, and is affected by the child sex ratio in this area. Such a preference in the family may pose a constant stressor for the expecting mother and might lead to anxiety about the outcome of pregnancy. These findings focus on increasing awareness of gender equality.

Pregnancy at an advanced age may be due to late marriage or difficulty conceiving, which might lead to stress, stigma, a greater number of consultations and the use of hormonal treatment methods, which could lead to

a greater level of depression. In the current study, nearly half of the participants were expecting a child for the first time. A greater proportion of antenatal depression and anxiety in the current study might be due to lack of prior exposure to childbirth, fear of pain and unforeseen complications during childbirth. These findings suggest that females should be made aware of birth preparedness and complication readiness.

Limitations and strengths:

Unlike previous hospital-based studies, the current study was a community-based study and estimated the burden of antenatal anxiety and depression. The investigators collected data through home visits, which could have been beneficial for early identification of antenatal anxiety and depression, as females generally tend to overlook symptoms/signs of any morbidity. In addition, the process of conducting the study also created awareness of these conditions among the participants and their community. However, the cross-sectional nature of the study could not establish any causal relationship between the variables under study, thereby implying further research to establish temporality and causality. PHQ-9 and GAD-7 are validated screening tools and rely on self-reported symptoms without clinical diagnostic confirmation, which might be a source of bias. Since, regression analysis was not performed, reported associations need to interpret cautiously.

Conclusion:

The current study revealed that more than a quarter (26.9%) of the antenatal females had some degree of depression, and more than a third had mild, moderate or severe anxiety. Socio-demographic and obstetric factors like advanced maternal age, lower socioeconomic status, nuclear family structure, lifetime and current experiences of domestic violence, alcohol abuse and smoking by the husband, unwanted pregnancy, advanced gestation and a male child preference were significantly associated with depression and anxiety among them. The use of screening tools to identify depression and anxiety is a feasible method for improving pregnancy and fetal outcomes.

Declaration

Funding: Nil

Conflict of Interest: Nil

References:

1. India State-Level Disease Burden Initiative Mental Disorders Collaborators. The burden of mental disorders across the states of India: the Global Burden of Disease Study 1990-2017. Lancet Psychiatry. 2020 Feb;7(2):148-161. DOI: 10.1016/S2215-0366(19)30475-4.
2. Tripura S, Roy B, Rakshit AK. Depression and anxiety among high-risk pregnant women of tribal and nontribal origin attending a tertiary center in North Eastern region of India - an observational study. J Evid Based Med Healthc 2021;8(26):2242-2247. DOI: 10.18410/jebmh/2021/419
3. Bante A, Mersha A, Zerdo Z, Wassihun B, Yeheyis T. Comorbid anxiety and depression: Prevalence and associated factors among pregnant women in Arba Minch Zuria district, Gamo zone, southern Ethiopia. PLoS One. 2021 Mar 10;16(3):e0248331. DOI: 10.1371/journal.pone.0248331.
4. Kalra H, Tran TD, Romero L, Chandra P, Fisher J. Prevalence and determinants of antenatal common mental disorders among women in India: A systematic review and meta-analysis. Arch Womens Ment Health. 2021 Feb;24(1):29-53. DOI: 10.1007/s00737-020-01024-0.
5. Kantipudi SJ, Kannan GK, Viswanathan S, Ranganathan S, Menon J, Ramanathan S. Antenatal depression and generalized anxiety disorder in a tertiary hospital in South India. Indian J Psychol Med. 2020;42(6): 513–518.doi: 10.1177/0253717620928440.
6. 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 Aug;36:46-53. doi: 10.1016/j.ajp.2018.06.020.
7. Babu GR, Murthy GVS, Singh N, Nath A, Rathnaiah M, Saldanha N, et al.. Sociodemographic and Medical Risk Factors Associated With Antepartum Depression. Front Public Health. 2018 May 2;6:127. doi: 10.3389/fpubh.2018.00127.
8. Nath A, Venkatesh S, Balan S, Metgud CS, Krishna M, Murthy GVS. The prevalence and determinants of pregnancy-related anxiety amongst pregnant women at less than 24 weeks of pregnancy in Bangalore, Southern India. Int J Womens Health. 2019 Apr 10;11:241-248. DOI: 10.2147/IJWH.S193306.
9. Priya A, Chaturvedi S, Bhasin SK, Bhatia MS, Radhakrishnan G. Depression, anxiety and stress among pregnant women: A community-based study. Indian J Psychiatry. 2018 Jan-Mar;60(1):151-152. doi: 10.4103/psychiatry.IndianJPsychiatry_230_17.
10. Srinivasan M, Reddy MM, Sarkar S, Menon V. Depression, Anxiety, and Stress among Rural South Indian Women-Prevalence and Correlates: A Community-Based Study. J Neurosci Rural Pract. 2020 Jan;11(1):78-83. doi: 10.1055/s-0039-1700595. PMID: 32140007; PMCID: PMC7055615.

11. 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 Oct;3(10):973-982. doi: 10.1016/S2215-0366(16)30284-X. Epub 2016 Sep 17. PMID: 27650773; PMCID: PMC5155709.
12. Ali GC, Ryan G, De Silva MJ. Validated Screening Tools for Common Mental Disorders in Low and Middle Income Countries: A Systematic Review. PLoS One. 2016 Jun 16;11(6):e0156939. doi: 10.1371/journal.pone.0156939.
13. Beidas RS, Stewart RE, Walsh L, Lucas S, Downey MM, Jackson K, Fernandez T, Mandell DS. Free, brief, and validated: Standardized instruments for low-resource mental health settings. Cogn Behav Pract. 2015 Feb 1;22(1):5-19. doi: 10.1016/j.cbpra.2014.02.002.
14. The protection of women from domestic violence act, 2005: Chapter II [Internet]. Sep 13, 2005. Available from: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.indiacode.nic.in/bitstream/123456789/15436/1/protection_of_women_from_domestic_violence_act%2C_2005.pdf
15. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. Arch Intern Med. 2006 May 22;166(10):1092-7. doi: 10.1001/archinte.166.10.1092.
16. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: Validity of a brief depression severity measure. Journal of General Internal Medicine. 2001; 16(9):606-13.DOI:10.1046/j.1525-1497.2001.016009606.x
17. Arora P, Aeri BT. Burden of antenatal depression and its risk factors in Indian settings: A systematic review. Indian J Med Spec. 2019;10:55-60. DOI:10.4103/INJMS.INJMS_36_18
18. Sahoo S, Gill G, Sikka P, Nehra R. Antenatal depression and anxiety in Indian women: A systematic review. Ind Psychiatry J. 2023 Jul-Dec;32(2):222-233. doi: 10.4103/ipj.ipj_156_22.
19. Prabhu S, Guruvare S, George LS, Nayak BS, Mayya S. Prevalence and Associated Risk Factors of Antenatal Depression among Pregnant Women Attending Tertiary Care Hospitals in South India. Depress Res Treat. 2022 Nov 17;2022:9127358. doi: 10.1155/2022/9127358.
20. Rehman B, Ahmad J, Kaul RR, Haque MK. An epidemiological study to assess the mental health status of pregnant women in a tertiary care hospital, Srinagar, Jammu and Kashmir, India. Int J Reprod Contracept Obstet Gynecol 2017;6:2580-3. doi:10.18203/2320-1770.IJRCOG20172355
21. Gupta B, Mangal A, Thakur A, Vaghela JF, Sharma A. Antenatal depression and its correlates - a cross-sectional study in an urban resettlement colony of Delhi. Indian J Comm Health. 2022;34(4):569-572. doi:10.47203/IJCH.2022.v34i04.23
22. Rayapureddy SKK, Benerji T, Chegireddy M, Popuri PK, Parvathaneni KM. Determinants of depression, anxiety, and stress among rural pregnant women: A hospital-based study. Telangana Journal of Psychiatry. 2025 March 20,:10.4103/tjp.tjp_54_24. DOI: 10.4103/tjp.tjp_54_24
23. Kamali R, Chibi R, Abirami V, Sowmiya KR, Dhanalakshmi S. Antenatal Depression: Prevalence And Associated Risk Factors Among Mothers Of Kanchipuram District, South India. Int J Acad Med Pharm 2023; 5 (2); 278-282
24. Bedaso A, Adams J, Peng W, Sibbritt D. The association between social support and antenatal depressive and anxiety symptoms among Australian women. BMC Pregnancy Childbirth. 2021 Oct 22;21(1):708. doi: 10.1186/s12884-021-04188-4.
25. Li H, Bowen A, Bowen R, et al.. Mood instability, depression, and anxiety in pregnancy and adverse neonatal outcomes. BMC Pregnancy Childbirth. 2021; 583. DOI: 10.1186/s12884-021-04021-y
26. Dadi AF, Miller ER, Bisetegn TA, et al.. Global burden of antenatal depression and its association with adverse birth outcomes: an umbrella review. BMC Public Health. 2020 Feb 4; 173. DOI: 10.1186/s12889-020-8293-9.
27. Ruban JA, Santosh A, Valmurugan M, Selvaraj L, Leela K, Subbarayan LM. Prevalence and Predictors of Anxiety and Depression among Perinatal Women in Tertiary Care Hospital: A Cross-Sectional Study. J Health Allied Sci. 2024;14(SupplS1): S89–S96. DOI https://doi.org/ 10.1055/s-0044-1786692.
28. Sheeba B, Nath A, Metgud CS, Krishna M, Venkatesh S, Vindhya J, et al.. Prenatal Depression and Its Associated Risk Factors Among Pregnant Women in Bangalore: A Hospital Based Prevalence Study. Front. Public Health. 2019; 7:108. doi: 10.3389/fpubh.2019.00108
29. Naja S, Al Kubaisi N, Singh R, Bougmiza I. Generalized and pregnancy-related anxiety prevalence and predictors among pregnant women attending primary health care in Qatar, 2018-2019. Heliyon. 2020 Oct 23;6(10):e05264. doi: 10.1016/j.heliyon.2020.e05264.
30. Thomas CZ, Surekha A, Suguna A , Puthur KJ, Kiran P, Sulekha T. Screening for Anxiety among Ante-natal Women Attending a Taluk Hospital in Rural India. Ntl J of Community Med 2015; 6(3):313-317.
31. Jalal SM, Alsebeiy SH, Alshealah NMJ. Stress, Anxiety, and Depression During Pregnancy: A Survey Among Antenatal Women Attending Primary Health Centers. Healthcare. 2024; 12(22):2227. DOI: 10.3390/healthcare12222227