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Prevalence of Anxiety Among Antenatal Women in An Urban Area of Belagavi

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ABSTRACT

Background: A woman is highly vulnerable to anxiety and stress during her pregnancy causing negative effect in somatic and psychological forms like Intrauterine growth restriction, low birth weight and preterm birth in child. Maternal anxiety not only leads to adverse effect on pregnancy outcome but also decreases maternal competence in childcare.

Aims/Objectives: Determine the prevalence of antenatal anxiety among women attending Ashok Nagar UHC and identify the associated risk factors.

Methodology: A cross sectional study was done for 3 months in 320 antenatal women attending antenatal clinic at Ashok Nagar UHC. Data collection was done using a pre designed and pre tested questionnaire.

Results: The prevalence of antenatal anxiety was 31.2%. Among them 30% had mild to moderate anxiety and only 1.2% had severe anxiety. Prevalence of anxiety was higher in younger women and with lower literacy status.

Conclusion: Antenatal anxiety is of major public health importance but its effect on mother is not considered to be a serious issue in the society. There is a need for regular antenatal screening, assessment and treatment of antenatal anxiety.

Keywords: Antenatal anxiety, PASS, Primigravida, Screening

INTRODUCTION

Prenatal maternal anxiety is a distinct and definable syndrome that refers to fears and worries about the pregnancy, delivery, health of the child, and ability to care for the child.[1] A woman is highly vulnerable to anxiety and stress during her pregnancy, thus increasing the risk of emotional suffering and psychiatric morbidity in this phase of her life. The occurrence of anxiety and depression during pregnancy is 10-15% in developed world.[2] Studies on anxiety in the antenatal period have shown prevalence ranging from 6.6% in a Swedish study to 54.0% in a study from Hong Kong.[3] Similarly a research study from India revealed that 8% of prenatal women had severe, 22% had moderate and 70% had mild level of anxiety.[4] Studies on antenatal anxiety have indicated that generalized anxiety disorder is the most common, with a prevalence of about 8.5%–10.5%, followed by panic disorder (1.4%–5.2%) and obsessive–compulsive disorder (1.2%–5.2%).[5,6,7]

Mental health, being an important component of reproductive health is often being neglected. Depression during pregnancy has been associated with poor attendance at antenatal clinics, substance abuse, and low birth weight, all of which can lead to neonatal morbidity and mortality.[8,9] anxiety disorders are associated with elevated maternal cortisol, which is a predictor of negative neonatal outcomes, impaired cognitive development, and future behavioural problems.[10]

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Depression and anxiety are the most common mental health problems during pregnancy with around 12% of the women experiencing depression and 13% experiencing anxiety at some point; many experience both.[11] Depression and anxiety have been linked to somatic complaints, gestational and obstetric complications, stillbirth, premature birth, low birth weight, low Apgar score, smaller head circumference, alterations in fetal motor activity, affected fetal heart rate pattern and major congenital anomalies.[12] Stress and anxiety during pregnancy could diminish one's capacity for self-care, which could lead to inadequate nutrition, all of which could have influence on the fetus leading to intrauterine growth restriction (IUGR).[13]

Childcare stresses, pregnancy and obstetric complications, poor relationship with their partner, and lower socioeconomic status have also been identified as moderate-risk factors for depression in pregnancy. [14,15]

Most of the research efforts toward prenatal maternal anxiety has been situated in high-income countries. In low- and middle-income countries (LMIC), other mental health issue such as maternal depression has remained a key focus of research and health care. Because of this, prenatal maternal anxiety in LMIC is poorly understood. Contextual factors in LMICs must be taken into consideration, such as high mortality rates for mother and infant, poor access to health care, cost of obtaining care, and poor quality of available resources. Indeed, it has been suggested that aspects of prenatal maternal anxiety that are particularly potent may not exist only during the pregnancy, but be magnified due to the existence of the pregnancy itself, particularly in LMICs. Antenatal depression has been widely studied but anxiety issue has been scarcely highlighted. The present study was planned to keep these factors in mind to assess the occurrence of anxiety among antenatal mothers attending Ashok Nagar Urban Health Centre (UHC) using the Perinatal Anxiety Screening Scale (PASS) and also to identify the associated risk factors among the measures of anxiety in pregnant women, such as socioeconomic, demographic and obstetric variables.

OBJECTIVES

The research was undertaken to study the prevalence of anxiety among antenatal women in an urban area of Belagavi, Karnataka and to study the factors associated with anxiety among antenatal women.

METHODOLOGY

This cross-sectional study was carried out among 320 antenatal women attending the antenatal clinic at Ashok Nagar Urban Health Centre (UHC), Belagavi. The study population consisted of pregnant women who underwent monthly prenatal care at the UHC. The sample size was estimated using the formula $n = 4pq/d^2$ where, prevalence was 27%,[16] precision of 5% and 95% confidence interval were assumed. Antenatal women who were on anxiolytic drugs or gave a previous history of mental illness or had any major medical illness were excluded from the study. Ethical clearance for the study was obtained from Institutional Ethical Clearance Committee.

Data collection: Data was collected for a period of 3 months (November 2020 to January 2021). Every participant was personally interviewed by the researcher after obtaining written informed consent. A pilot study was conducted to assess the reliability and feasibility of the planned study. Necessary correction was made in the questionnaire.

Socioeconomic status was calculated was using Modified B.G. Prasad Classification 2019 that was classified based upon per capita income (per month): Class I for Rs. 7008 and above, Class II for Rs. 3504-7007, Class III for Rs.2102-3503, Class IV for Rs. 1051-2101 and Class V for Rs.1050 and less.[9]

Study tool: A pre-designed, semi-structured, pretested questionnaire was used. It composed of three parts – socio-demographic detail, obstetric history and Perinatal Anxiety Screening Scale (PASS) scoring system. The socio-demographic detail studied was age, religion, marital status, literacy, employment and socioeconomic status. The obstetric history represented the gravidity, parity, Period of Gestation (POG) and history of previous bad obstetric events. Assessment of anxiety was done using PASS questionnaire. It's a valid and reliable 31 item Likert's scale based, self-report instrument designed to screen the problematic anxiety in antenatal and postpartum women.[10] It measures the four domains that address specific symptoms of anxiety as they present in perinatal women constituting of excessive worry and specific fears; perfectionism, control and trauma; social anxiety and acute anxiety and adjustment. The score ranged from 0 to 93. The severity of anxiety ranged as asymptomatic if the total score was 0-20, mild to moderate symptoms if score was 21-41 and severe symptoms if the score was 42-93. The anxiety status was also differentiated as low and high risk based on the total score of less than 26 and more than or equal to 26 respectively.

Statistical analysis: Data was coded and entered in excel sheet. Descriptive statistics were expressed as percentage. Chi-square test was used to find the association between variables and logistic regression analysis was done by odds ratio. A p value of ≤ 0.05 was considered to be statistically significant.

RESULT

Out of 320 mothers studied, 260 (81.3%) were aged 18 to 25 years, 42 (13.1%) were 26 to 30 years and remaining 18 were aged above 30 years of age. The mean ± SD age was 23.2 ± 3.4 years, with a range of 18 to 33 years. The mean ± SD age of husbands of pregnant women was 26.4 ± 3.5 years and the range was 21to 38 years. All the study participants were

married. Majority 204 (64.4%) of mothers belonged to Muslim religion. Regarding literacy status, 100% rate was noticed among the study population, but most of them had completed only secondary education (90.0%) which corresponds to 12 years of studying. Only 12 (3.7%) were employed and remaining 308 (96.3%) were housewives. Majority of the participant's husbands had completed secondary education (82.4%) and more than half of them were Government employee (65%). According to Modified B.G. Prasad's socio-economic classification, 160 (50.0%) belonged to classes II and III, 152 (47.5%) to classes IV and V and only 2.5% belonged to Upper class. Primigravida constituted 53.1% of the total sample size, whereas 150 (46.9%) were multigravida. According to the gestational age, 74 (23.1%) of pregnant women were in the first trimester, 186 (58.1%) in the second trimester and 60 (18.8%) in the third trimester of pregnancy. History of previous abortion was present in 49 (15.3%) women.

Table 1: Risk and Severity of anxiety among study participants (N=320)

Variables	Anxiety score	Participants (%)
Risk of anxiety		
Low risk	<26	282 (88.1)
High risk	≥26	38 (11.9)
Severity of anxiety		
Asymptomatic	0-20	220 (68.7)
Mild to moderate	21-41	96 (30.0)
Severe	42-93	4 (1.3)

Table 2: Association between prevalence of anxiety and socio - demographic variables of the study participant (N=320)

Variable	With Anxiety (%)	Without Anxiety (%)	Chi Square	P Value
Age (in years)				
18 – 25	89 (89.0)	171 (77.7)	6.8	**0.03**
26 – 30	6 (6.0)	36 (16.4)		
>30	5 (5.0)	13 (5.9)		
Religion				
Hindu	32 (32.0)	84 (38.2)	1.13	0.286
Muslim	68 (68.0)	136 (61.8)		
Literacy status				
Primary	6 (6.0)	38 (17.3)	11.96	0.008
High school	52 (52.0)	100 (45.5)		
Secondary	36 (36.0)	56 (25.4)		
Graduate	6 (6.0)	26 (11.8)		
Socioeconomic status				
Upper and middle	50 (50.0)	118 (53.6)	0.364	0.545
Lower	50 (50.0)	102 (46.4)		
Gravidity				
Primi	70 (70.0)	100 (45.5)	16.63	0.00005
Multi	30 (30.0)	120 (54.5)		
Trimester of pregnancy				
1st	24 (24.0)	50 (22.7)	13.55	0.001
2nd	46 (46.0)	140 (63.6)		
3rd	30 (30.0)	30 (13.6)		
H/o previous abortion				
Absent	68 (68.0)	203 (92.3)	31.24	0.00001
Present	32 (32.0)	17 (7.7)		

Table 3: Logistic regression analysis to determine relation between prevalence of anxiety and socio - demographic variables of the study participant

Variables	With Anxiety (%)	Without Anxiety (%)	OR* (95% CI) **
Age (in years)			
18 – 25	89	171	2.318 (1.149 – 4.679)
>25	11	49	Ref
Education			
Up to High school	58	138	1.218 (0.750 – 1.970)
Secondary and above	42	82	Ref
Gravidity			
Primigravida	70	100	2.801 (1.693 – 4.632)
Multigravida	30	120	Ref
Period of gestation (trimester)			
First and second	70	190	2.714 (1.526 – 4.826)
Third	30	30	Ref
Previous abortion			
Present	68	203	0.178 (0.093 – 0.340)
Absent	32	17	Ref

*OR = Odds ratio **95% CI = Confidence Interval

Table 4: Domains of Perinatal Anxiety Screening Score (n=320)

Domains	Participants
Domain 1: EXCESSIVE WORRY AND SPECIFIC FEARS	
Worry about the baby / pregnancy	59.40%
Fear that harm will come to baby	60.70%
Sense of dread - something bad is going to happen	19.40%
Worry about many things	45.00%
Worry about the future	41.90%
Feeling overwhelmed	58.80%
Really strong fears about things eg. Blood, birth, pain, needles	63.20%
Sudden rushes of extreme fear/discomfort	28.80%
Repetitive thoughts difficult to control	31.30%
Difficulty sleeping even when there is the chance to sleep	36.90%
Domain 2: PERFECTIONISM, CONTROL AND TRAUMA	
Having to do things in a certain way or order	77.50%
Wanting things to be perfect	71.90%
Needing to be in control of things	38.80%
Difficulty stopping checking or doing things over and over	10.00%
Feeling jumpy or easily startled	5.70%
Concerns about repeated thoughts	9.40%
Being 'on guard' or needing to watch out for things	6.90%
Upset about repeated memories, dreams or nightmares	28.20%
Domain 3: SOCIAL ANXIETY	
Worry that I'll embarrass myself in front of others	33.20%
Fear that others will judge me negatively	38.80%
Feeling really uneasy in crowds	32.50%
Avoiding social activities because I might be nervous	27.50%
Avoiding things which concerns me	11.90%
Domain 4: ACUTE ANXIETY AND ADJUSTMENT	
Feeling detached like watching yourself in a movie	11.90%
Losing track of time and can't remember what happened	24.40%
Difficulty adjusting to recent changes	30.00%
Anxiety getting in the way of being able to do things	14.40%
Racing thoughts making it hard to concentrate	12.50%
Fear of losing control	17.50%
Feeling panicky	46.30%
Feeling agitated	91.30%

Out of 320 antenatal mothers studied, the prevalence of antenatal anxiety was 31.2%. The mean ± SD PASS score among pregnant women was 12.42 ± 4.60, 25.27 ± 4.34 and 42 for no, mild to moderate and severe anxiety respectively. Nearly 38 (11.9%) of women had PASS score of more than 26, thus belonging to high-risk category of anxiety. (Table 1)

Association between prevalence of antenatal anxiety and socio-demographic variables were assessed. It was found that anxiety was more pronounced among women belonging to the age group of 18 - 25 years (34.2%) which was statistically significant (p = 0.03). Literacy status also affected the prevalence of prenatal anxiety. It was seen that anxiety was more among women who had received secondary level of education (39.1%) with a statistically significant association (p = 0.008). Primigravida women also showed an increased level of anxiety (41.2%) with a statistically significant p value of 0.00005. Half of the antenatal women under study were found to be anxious during the third trimester of pregnancy (50%), which was statistically significant (p = 0.001). More than half of the women had reported anxiety (65.3%), with history of previous abortion (p = 0.00001). (Table 2)

On further analysis, it was found that women who were 25 years old or below had higher odds of antenatal anxiety Odds Ratio (OR) 2.318; 95% Confidence Interval (CI) (1.149 – 4.679). Participants who studied till high school were found to have higher chance of antenatal anxiety compared to the more educated group OR 1.218; 95% CI (0.750 – 1.970). Similarly, primigravida mothers were 2.8 times more prone to antenatal anxiety compared to multigravida mothers OR 2.801; 95% CI (1.693 – 4.632). It was also highlighted that women in their third trimester were twice as more anxious compared to first/ second trimester mothers. OR 2.714; 95% CI (1.526 – 4.826) (Table 3)

The PASS questionnaire used for the present study has four domains, each one addressing specific cause of anxiety during antenatal period. Domain 1 (Excessive Worry and Specific Fears) nearly 60% of the pregnant women had a strong fear for procedure involving needle, blood, pain, birth, etc. and fear of impending harm to the baby that depicted generalized anxiety and phobia. According to the second domain (Perfectionism, Control and Trauma), more than 70% of study participants revealed obsessive tendencies at home with work being done in a certain way and also craved for perfectionism. Domain 3

(Social Anxiety) was the least cause for anxiety in pregnant women. The reason may be; pregnancy is considered as a norm in our society and very few mothers experience negative judgement, embarrassment and a sense of uneasiness in crowded places. As per the fourth domain (Acute Anxiety and Adjustment), more than 90% of women experienced bouts of frequent agitation across the trimesters of pregnancy and nearly half also complained of panicky attacks. (Table 4).

DISCUSSION

The present study determined the overall anxiety among the 320 study participants as 31.2% with mild to moderate being 30% and very few severe anxiety cases being recorded (1.2%). Our study reflected that majority of the women (81.3%) belonged to the age group of 18 - 25 years with 100% literacy status. However, only 3.7% of the antenatal women were employed. This suggests that the study area comprised of educated women who had good understanding of the prevailing issues. However, lower employment status reflects the societal mindset towards pregnant mothers. Higher prevalence of antenatal anxiety in our study could be due to the prevailing mindset of the women in most of the rural parts of India regarding pregnancy owing to their lack of knowledge and understanding of the issue.

There have been various studies done using other instruments to assess the prevalence of prenatal anxiety. A study conducted in Bangalore by Thomas CZ et al. to determine the prevalence of overall anxiety revealed 22.7% using the same PASS scoring scale.[3] In a study conducted in Delhi by using the Hospital Anxiety and Depression Scale (HADS) scale, the overall prevalence of anxiety was found to be 27% which is similar to the findings of the present study.[16] Another study found in accordance with our study was conducted in Kathmandu by Binita Sapkota et al., using the same PASS scoring scale and the overall anxiety was found to by 29.67%.[2]

The findings of our study were similar to a study conducted in Bangalore by Thomas CZ et al., where 65.1% of the study participants were in the age group of 20 - 25 years and only 10.3% were employed.[3] However the study was conducted in predominantly Hindu population (87.7%). Our study showed that almost half of the participants belonged to lower socioeconomic group (47.5%) with predominantly Muslim population (64.4%). However, a study done in Bangalore by Meera G suggested that only 11% belonged to lower class and Muslims constituted only 20% of the total participants.[19]

The present study reported 23.1% of the antenatal mothers in first trimester with primigravida constituting half (53.1%) of the total study participants and 18.9% of the women gave a positive history of previous abortion or pregnancy loss. Another study conducted by Meera G showed that 43.2% constituted of primigravida women.[19] A study done in Mangalore showed similar findings with 16% constituting at least one pregnancy loss in past.[4] According to the gestational age of the women, 15.8% were in the first trimester, 41.1% in the second trimester and 43.2% in the third trimester. This is in collaboration to a study done in Bhubaneshwar by Priyambada K in which most of the participants belonged to second trimester (40.8%), followed by third trimester (31.4%) and 27.8 % belonging to first trimester.[12]

The socio demographic components of the antenatal women were compared with antenatal anxiety. The age group of 18-25 years ($p = 0.03$) and literacy status of secondary education ($p = 0.008$) reported to be risk factors for prenatal anxiety according to our study signifying that becoming pregnant at a young age itself might be a cause of increased anxiety among women. This is in accordance to the study conducted by Binita Sapkota et al., that showed significant association of age with antenatal anxiety ($p < 0.001$).[2]

Our study reported an association between the period of gestation with antenatal anxiety. According to the study, antenatal women in their third trimester showed a significant association ($p = 0.001$). This may be due to increased level of stress and presence of psycho-social issues as they get closer to the delivery date. This is similar to study done in Bhubaneshwar that reported significantly higher anxiety scores for third trimester ($p =0.000$).[12] Another study done by Madhavanprabhakaran et al. in Kerala suggested a significantly high prevalence of pregnancy-specific anxiety during the third trimester.[20] However, another study done in Bangalore reported increased anxiety in early pregnancy with significantly higher levels of anxiety during the first trimester (47.8%).[19] The present study also showed a strong trend of association between the gravida status of the respondents and the prevalence of anxiety with primigravida women showing positive association with anxiety which is statistically significant ($p < 0.05$). As first-time pregnant women show more apprehensions to the stress of childbirth due to lack of experience and appropriate knowledge, primi mothers tend to go through serious anxiety issues. This is in accordance to the study conducted by Thomas CZ et al., that reported a higher anxiety level among primigravida (21.5%) compared to multigravida (14.3%).[3] Our study supports the significant association with respect to previous pregnancy loss. A positive history of abortion has shown risk to positive anxiety screen (65.3%) which is statistically significant ($p = 0.00001$). Therefore, a bad obstetric history could affect the mental health and lead to the development of anxiety in current pregnancy. The study from Bangalore also reported a similar association between previous abortions and antenatal anxiety ($p = 0.001$).[19]

The present study used the PASS Likert's scale to determine prenatal anxiety. In Domain 1 depicting "Excessive Worry and Specific Fears", 63% of the preg-

nant women presented with 'strong fear for procedure involving needle, blood, pain, birth, etc.' and 'fear of impending harm to the baby' suggesting generalized anxiety constituted among more than half (60.7%) of the participants. This was similar to a study conducted by Binita Sapkota et al., that showed a finding of 63.5% and 68.8% respectively. In Domain 2 that signified "Perfectionism, Control and Trauma", more than 70% of study participants expressed their desire of 'Having to do things in a certain way or order' and 'Wanting things to be perfect'. Similar findings were noted in the Nepal study that contributed to more than 65% of the total study participants. The third domain that denoted "Social Anxiety" formed the minimal contributing factor to antenatal anxiety. According to this domain in our study, "Worry that I'll embarrass myself in front of others" and "Fear that others will judge me negatively" were answered by only 33.2% and 38.8% respectively. However, the other study noted positive response among 70.9% and 72.7% of the study participants, respectively. According to the fourth domain "Acute Anxiety and Adjustment", 91.3% of women experienced episodes of frequent 'agitation' during the course of pregnancy. This observation was found to be similar to the study by Binita Sapkota et al., that suggested the bouts of agitation among 84.3% of the women.[2]

STRENGTHS & LIMITATIONS

Every participant was interviewed by the female researcher hence the pregnant women could open up and give their honest views on anxiety. We conducted the interview on antenatal clinic days at our Urban Health Centre so that we could reach out to maximum participants. The application of PASS scale that deals mainly with perinatal anxiety proved to be a significant strength to this study research.

The limitation of our study is that possible involvement of neuro-endocrinal factors that was not assessed. Gender-based risk factors like intimate partner violence were not assessed in our study. Recall bias and social desirability are potential threats to the internal validity of the study. Since this is a cross sectional study design and has a small sample size, there is a lack of follow up which is necessary to track anxiety issues in postpartum period as well. This can be corrected by applying longitudinal study designs in future research.

CONCLUSION

Antenatal anxiety affects a pregnant woman's physical, emotional, social and behavioural well-being. Our findings suggest a high proportion of prevalence of anxiety among pregnant women (31.2%). The predominant causes of anxiety were worry, fear of harm to the baby, strong fears of blood, pain, needle, fear of being judged negatively, panic attacks and bouts of agitation during pregnancy. Factors influencing this prevalence were age of the women, less education and trimester of pregnancy. There was a significant association of prenatal anxiety with age, gravida status and period of gestation. There is a need to highlight the comprehensive approach of antenatal care services including timely identification and management during pregnancy in order to overcome the potential mental hazard posed to motherhood.

RECOMMENDATIONS

It is important to conduct routine screening of antenatal mothers for anxiety especially in the first trimester by female health workers in the community. Once identified, we must counsel the anxious pregnant women, focusing on young mothers who are primigravida. Awareness must be created first among the grass root level health workers regarding the effects of antenatal anxiety and appropriate training should be provided to them so that they can assess, screen and deal with anxious mothers efficiently.

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