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To Assess the Relationship Between pregnancy Related Anxiety and Perceived Social Support in Third Trimester Antenatal Females- A Cross-Sectional Study.

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BACKGROUND- Antenatal anxiety have been shown to negatively affect both obstetric and fetal outcomes, while also increasing the likelihood of postnatal mental health problems. As a result, social support during pregnancy is essential in managing these concerns. However, an extensive review of the literature revealed no existing studies examining the specific relationship between perceived social support and symptoms anxiety during pregnancy. This study seeks to explore the link between social support and anxiety symptoms in Indian women.

METHODS- Pregnant women in their last trimester who visited the antenatal clinic were invited to join the study. Those who were eligible filled out forms detailing their socio-demographic and clinical information. Anxiety and depression were assessed using the Pregnancy Anxiety Questionnaire - Revised 2 (PRAQ-R2) and social support was assessed using Multidimensional Scale of Perceived Social Support (MSPSS).

RESULTS- The group showing significant pregnancy related anxiety includes 51 participants, accounting for 42.5% of the sample. There is a moderate negative correlation with perceived social support ($r = -0.53$, $p = 0.001$), suggesting that higher levels of pregnancy-related anxiety are associated with lower levels of perceived social support.

CONCLUSION- A considerable proportion of pregnant women had anxiety symptoms, which poses serious health concerns. Low support have a significant association with symptoms of anxiety. As such, targeted screening of expectant women for social support is essential.

I. BACKGROUND-

Pregnancy is a time marked by significant physiological and psychosocial changes in women, which heightens the risk of developing mental health issues. Among the most prevalent mental health conditions during pregnancy are depression and anxiety.[1,2] Antenatal anxiety refers to heightened worries related to pregnancy, childbirth, the baby's health, and future parenting responsibilities. According to a global meta-analysis, the estimated prevalence of antenatal anxiety is 34.4% in low- and middle-income countries (LMICs) and 19.4% in high-income nations.[3,4]

Risk factors for antenatal anxiety include prior pregnancy loss, stress, pregnancy-related abuse, a history of mental health issues, smoking or substance use, alcohol consumption, antenatal depression, unplanned pregnancies, low social support, and strained relationships with partners.[5-10]

Thus, to tackle these challenges the need for social support during pregnancy is vital.[11]

Social support refers to the financial, instrumental, emotional, and psychological assistance provided by a social network, including family, friends, and members of the community.[12]It enhances social connections and supports overall health and well-being, contributing to a successful pregnancy.[13] A lack of social support can prevent expectant mothers from accessing necessary help and resources, potentially worsening psychological problems. Additionally, pregnant women who receive inadequate social support may be less likely to acknowledge the changes that occur during pregnancy, which could discourage them from following recommended prenatal care practices.

The connection between social support and symptoms of anxiety has been largely understudied both in india and worldwide. Additionally, the existing research reveals gaps and inconsistencies in understanding how social support relate to mental health issues in pregnant women. Gaining insight into these relationships can help in designing targeted community-based social support programs to improve the mental well-being of pregnant women.

Therefore, to address the above mentioned gaps in the current literature this study examined the association between pregnancy related anxiety

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and perceived social support in third trimester antenatal females.

II. METHODOLOGY

STUDY SETTING AND DESIGN-

A cross-sectional study was done from September 2022 to April 2023 in the Psychiatry Department of a tertiary care hospital connected with a medical college in a city in Rajasthan, India. The study received approval from the institutional ethics committee.

Third-trimester pregnant women (28 weeks or more) attending the antenatal clinic in the Department of Obstetrics and Gynaecology were invited to participate. The study's purpose was explained to them, and written informed consent was obtained before their inclusion.

Participants were then evaluated based on specific inclusion and exclusion criteria, and those who met these criteria were enrolled in the study.

Initially, the socio-demographic and clinical profiles of the participants were recorded. The participants were then evaluated using the Pregnancy Anxiety Questionnaire - Revised 2 (PRAQ-R2), the Multidimensional Scale of Perceived Social Support MSPSSFor those with PRAQ-R2 scores exceeding 27, a detailed psychiatric interview was conducted to confirm the diagnosis of anxiety and/or depression based on the ICD-11 diagnostic criteria for research.The antenatal patients who were diagnosed having anxiety, depression or any other psychiatric disorder was referred to the department of Psychiatry for further management.

SAMPLING TECHNIQUE

A purposive sampling technique was used to select participants from the ANC clinicof the Department of Obstetrics and Gynaecology.

For the sample size calculation, formula from creative research system was used, asgiven below:

$$n = ([z_{1-\alpha} + z_{1-\beta}]^2/z^2)_0 + 3.$$

Shafaie et al. reported a negative correlation of r=-0.355 between perceived social support and anxiety, which was used for sample size calculation. Using this formula, we estimated a sample size of 123 antenatal women at an alpha value of 0.01, beta value of 0.10, and 10% contingency.[14,15]

CRITERIA FOR SAMPLE SELECTION

The study involves pregnant women attending the antenatal clinic in the Department of Obstetrics & Gynecology, from the 28th week of pregnancy up to term. Participants must be able to read Hindi or English and be willing to participate and sign informed consent.

Exclusion criteria include a history of psychiatric disorders, current use of psychotropic medications, significant hearing or visual impairments, intellectual disabilities, gestational diabetes requiring insulin, and being in active labor.

TOOLS USED IN THE STUDY

1. **Written Informed Consent**: Participants provided written consent, confirming they understood the study's purpose, procedures, and their rights, including the ability to withdraw from the study at any time without any repercussions.

2. **Self-Designed Semi-Structured Performa for Socio-Demographic Data and Clinical Variables**: This included information such as name, age, gravida, last menstrual period, expected date of delivery, period of gestation (POG), occupation, working status, education, husband's education, occupation, family income (per capita), socio-economic status, and number of family members. It also included details on marital relationship satisfaction, planned or unplanned pregnancy, and years of marriage. Clinical variables included weight, height, BMI, blood pressure, pulse, blood group, family history of psychiatric illness, past medical or psychiatric illness, birth order of the child, and worries about the new born, breastfeeding, and labor.

3. **The Pregnancy-Related Anxiety Questionnaire-Revised 2 (PRAQ-R2)-** created by Huizink, is intended for use with all pregnant women, regardless of their pregnancy history. This tool comprises 10 questions, divided into three subscales:[16]

1. Fear of childbirth: Items 1, 2, and 6
2. Concerns about having a child with physical or mental disabilities: Items 4, 9, 10, and11
3. Worries about personal appearance: Items 3, 5, and 7.

Scoring of Pregnancy Anxiety Questionnaire (PRAQ-R2): The total score ranges from 10 to 50, derived by adding the individual item scores. Scores for the three subscales are also calculated by summing their respective item scores. Higher scores reflect a greater level of pregnancy-related anxiety. Although there is no established clinical cutoff for this questionnaire, it can be used as both a self-report tool and in participant interviews. In a comparable study, a cutoff score of above 27 was recommended, and this threshold was also applied

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in the present study to distinguish participants with pregnancy-related anxiety from those without.[16,17]

4)Multidimensional scale for perceived social support

The 12-item Multidimensional Scale of Perceived Social Support (MSPSS), created by Zimetand colleagues, measures social support from family, friends, and significant others. In a study with 265 pregnant women, the English version of the MSPSS showed high internal consistency. Participants rated their agreement with each statement on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating greater perceived social support. The MSPSS demonstrated a Cronbach's α of 0.92 in this study, indicating its reliability.[18]

III. STASTICAL ANALYSIS

The stastical package for social science (SPSS version 20, Chicago, US) was used to analyse the data. Mean and standard deviation will be calculated for the continuous variables and frequency and percentages will be calculated for nominal and ordinal variables. Univariate analysis was performed to predict the factors associated with anxiety and support. Pearson correlation test was used to analyse the relation between the variables and the level of significance was set at $p < 0.05$.

IV. RESULTS

TABLE 1 Univariate analysis showing association between pregnancy related anxiety and socio demographic and clinical variables. (n-123)

Variables			Odds ratio (95%CL)	P-value
Age (in years)	18-26		2.07 (1.03-3.81)	0.06
	>26	Ref		
Education Level	Up to 12th	Ref		
	Graduate		1.96 (0.99-2.85)	0.10
Residence	Rural	Ref		
	Urban		1.91 (1.01-3.48)	0.11
Working Status	Employed		2.13 (1.10-3.67)	0.014*
	Unemployed	Ref		
Family Type	Nuclear		1.82 (0.94-2.7)	0.25
	Joint	Ref		
Birth order	First		2.05 (1.04-4.23)	0.038*
	Second or above	Ref		
Complications	Absent	Ref		
	Present		7.59(3.96–12.1)	<0.01*
Worry for breastfeed	No	Ref		
	Yes		8.2 (4.5–13.6)	<0.01*
Worry about labour	No	Ref		
	Yes		11.33 (5.17-17.02)	<0.01*
Worry about new born	No	Ref		
	Yes		1.82 (0.94-2.7)	0.25

According to the univariate analysis, several factors were significantly associated with pregnancy-related anxiety . Employed women were more likely to experience pregnancy-related anxiety compared to unemployed women, with an odds ratio (OR) of 2.13 (95% confidence interval [CI]: 1.10-3.67, $p = 0.014$). First-time mothers also had a higher likelihood of anxiety compared to those with a second or subsequent child, with an OR of 2.05 (95% CI: 1.04-4.23, $p = 0.038$). Participants who experienced complications during pregnancy were significantly more likely to report anxiety, with an OR of 7.59 (95% CI: 3.96-12.1, $p < 0.01$). Additionally, women who were worried about breastfeeding had an OR of 8.2 (95% CI: 4.5-13.6, $p < 0.01$), and those worried about labor had an OR of 11.33 (95% CI: 5.17-17.02, $p < 0.01$), both indicating a strong association with pregnancy-related anxiety.In contrast, factors such as age, education level, residence, family type, and worry about the newborn did not show significant associations with pregnancy-related anxiety in this analysis.

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TABLE 2 Correlation matrix between pregnancy related anxiety, perceived social support

Variables	PRAQ-R2		MSPSS	
	r value	p value	r value	p value
PRAQ- R2	1	-	-0.53	0.001*
MSPSS	-0.53	0.001*	1	-

In **TABLE 2** . There is a moderate negative correlation with perceived social support ($r = -0.53$, $p = 0.001$), suggesting that higher levels of pregnancy-related anxiety are associated with lower levels of perceived social support.

V. DISCUSSION

This study uncovered several key findings regarding the prevalence of anxiety as well as the link between low social support and mental health issues, such as symptoms of anxiety, during pregnancy among indian women.

ANXIETY AND SOCIODEMOGRAPHIC AND CLINICAL VARIABLES.

Our study identified that one in seven pregnant women tested positive for anxiety symptoms. Similar findings were reported in a Canadian study, which indicated a prevalence of 40% for antenatal anxiety symptoms. [7]Additionally, a global systematic review and meta-analysis revealed prevalence rates of 18.2% in the second trimester (based on 10 studies) and 19.1% in the third trimester (from 17 studies).[4] The differences in the prevalence rates could be attributed to different measuring instruments used, as well as the socio-demographic and cultural diversity of the study population.

In our study it is seen that employed women, living in joint family, nulliparous, and women who have multiple maternal worries like worry about breastfeed, labor and newborn have a strong association with anxiety during pregnancy.

Our study revealed a significant relationship between the occupation of pregnant women and their anxiety levels. Western studies commonly emphasize employment as a strong protective factor against major depression during pregnancy several studies conducted in India, which suggests that, overall, housewives experience greater depression than working women.[15] Our findings diverged from this perspective. Interestingly, we observed that employed pregnant women displayed higher levels of anxiety compared to housewives.

In our present study, high levels of Pregnancy related anxiety were found amongst the nulliparous women who had never given birth before. Some studies show that nulliparity is associated with higher levels of pregnancy-related anxiety[19,20]whilst another study reported older maternal age and multiparity relation with pregnancy related anxiety .[21]Also, one study did not report any association between pregnancy-related anxiety and parity.[22] In our research , we observed a significant correlation between pregnancy-related anxiety and individuals residing in nuclear family setups, aligning with the findings of Madhavanprabhakaran et al.[23]They noted that compared to extended family arrangements, the structure of nuclear families often results in reduced exposure to traditional knowledge transfer concerning childbirth from mothers to daughters. This increases pregnancy-related anxiety among expectant mothers. Although normal levels of anxiety regarding labor are reported by 6-10% of pregnant women, many women develop fear or anxiety towards childbirth (tokophobia).[24] This syndrome is more common in nulliparous women compared to multiparous women which is similar to our study. In our study Worry about newborns' health is a common concern among expectant mothers and can significantly contribute to anxiety during pregnancy.($p<0.01$) Research by Dunkel Schetter et al. found that higher levels of maternal anxiety during pregnancy were associated with increased worries about new borns health.[25] A study by Alhusen et al. (2012) demonstrated that higher levels of maternal anxiety were linked to lower levels of maternal-fetal attachment, which in turn contributed to worries about new born health.[26]

Association of anxiety and social support –

This study found that low social support is linked to a higher risk of antenatal depression and anxiety. Pregnant women with less support were three times more likely to experience anxiety, as they may lack someone to confide in, miss important advice, and struggle with managing negative emotions. This increased stress can contribute to the onset of anxiety and depression.[27]

VI. LIMITATIONS

First, the use of a hospital-based cross-sectional design limits the ability to establish causality between variables such as anxietyand social support. Additionally, the study was conducted in a single tertiary care hospital in a metropolitan city, which may not be representative of the broader population, particularly rural areas. The purposive sampling technique further limits generalizability, as it may introduce selection bias. Moreover, the reliance on self-report measures like the PRAQ-R2and MSPSS may lead to response bias, where participants might underreport or overreport their symptoms. Finally, the exclusion criteria, such as excluding women with prior psychiatric disorders or those requiring insulin for gestational diabetes, may have resulted in a sample that is not fully representative of all pregnant women, potentially limiting the applicability of the findings to broader populations.

VII. CONCLUSION

A substantial proportion of pregnant women show signs of anxiety, which presents serious health risks. Early identification of anxiety is essential for safeguarding both maternal and infant well-being. Limited support, as well as insufficient positive social interaction, have been closely associated with these mental health concerns. Consequently, it is advised that pregnant women undergo specific screening for social support to mitigate the onset of anxiety.Policymakers, psychiatrists and maternity care professionals should prioritize the development of community-based support programs aimed at enhancing the mental well-being of expectant mothers.

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