



## **A Prospective Study on the Assessment of the Impact of Socio-Economic and Psycho-Social Factors in Pregnancy-Related Anxiety at a Tertiary Care Hospital in Khammam**

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### **ABSTRACT**

*A pregnant woman undergoes physiological as well as psychological changes, during this phase of life anxiety is a common condition and can lead to undesirable outcomes. It can be short and long-term effects on both mother and fetus. This study is aimed to establish its association with psycho-social and socio-economic factors. A total of 229 pregnant women were assessed from all gestational weeks. The study was conducted over 6 months and data was collected using a structured questionnaire associated with different scales. Out of 229 pregnant women, 108 (47.17%) were found to have pregnancy-related anxiety. Lower socioeconomic status, the impact of gravida, maternal complications, trimester, low social support, and history of catastrophic events emerged as significant determinants of anxiety. We could not find any important linkage between residence, maternal nutrition, parental consanguinity, spouse physical violence on anxiety during pregnancy which is, therefore, an important public health concern. Pregnancy-related anxiety must be identified early during routine antenatal care to prevent any untoward pregnancy outcomes.*

**Keywords:** Anxiety, Pregnancy, Maternal complications, social determinants, Socioeconomic status, psychosocial factors.

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### **INTRODUCTION**

Pregnancy leads women into a new stage in their lives, which grants them a new name of “mother” and makes them experience biological and psychological changes as well as status transitions in family and sociality. Almost all women suffer from mental disorders of different types and degrees for some reason during this period, among which stress, anxiety, and depression are the most common and often comorbid [1,2].

There is simple evidence that anxiety and similar mental conditions during pregnancy could increase the risk of adverse pregnancy outcomes and offspring neurodevelopment [3,4].

Symptoms suggestive of disturbed mental health such as poor sleep and tiredness are likely to be ignored and attributed to a normal physiological condition associated with pregnancy [5].

Maternal antenatal anxiety and related disorders are very common [6] despite it being frequently comorbid with and possibly more common than, depression it has received less attention than it deserves in scientific research and clinical practice. Moreover, parental prenatal complications can interfere with the parent-child relationship, with the risk of significant consequences over the years for the child's development and can cause adverse short-term and long-term effects on both mothers and fetal/infant outcomes [7], including an increased risk for suicide and for neonatal morbidity, which is associated with significant health care costs [8]

Supporting mothers' emotional well-being during the perinatal period is now recognized to be as important as the traditional focus on the physical health of the mother and child [9]. Social support refers to the emotional and material resources that are provided to an individual through interpersonal communications; resources perceived by the provider or the recipient to be intended to promote the health of the recipient. Perception of social support during times of stress may have a positive impact on health by helping alter perceptions of threat, lower anxiety, and increase coping ability.

Socioeconomic disadvantage is often related to poorer health, this general tendency hides important heterogeneity. Adverse socioeconomic circumstances have long-lasting effects on pregnancy outcomes such as intrauterine growth restriction (IUGR) and preterm birth. IUGR and preterm birth are considered

key outcomes due to their strong association with infant mortality, long-term morbidity, and high healthcare cost. On the other hand, pregnant women from lower socioeconomic status are failing to obtain adequate nutrition, and appropriate care and are also having limited access to healthcare information. To overcome this predicament in India, the government has started several healthcare schemes that provide adequate nutrition, appropriate antenatal care, or financial support to seek antenatal care to pregnant women belonging to the lower socioeconomic status. Besides, the Ministry of Health and Family Welfare (MoHFW) has recruited local women and designated them as “accredited social health activist (ASHA) workers”, who are being trained to act as health promoters and educators and will be the primary healthcare contact person for poor pregnant women for all their health-related issues. These ASHA workers motivate the poor pregnant women to have their regular antenatal check-ups and to have their labor under medical supervision [10]

Various studies have documented an association between psychosocial factors, socio-economic status, and pregnancy-related anxiety [11-14]. With this background, we conducted this study to document the impact of these factors in our tertiary care hospital. The objectives of the study were to document the impact of socioeconomic and psychosocial factors on pregnancy-related anxiety at a tertiary care hospital in Khammam.

## **MATERIAL AND METHODS**

A prospective study was conducted on 229 purposively selected patients attending the Medicine Outpatient department (OPD) in a tertiary care hospital in Khammam between October 2021- and February 2022. We have included pregnant ladies regardless of gestational weeks. Normally pregnant women and Pregnant ladies with complications, Able to take part in the review and Participant case sheets having every of the important information.

We have avoided patients not ready to take part, Patient case sheets having inadequate information.

The patients are arranged by their gestational age, further, the patients are grouped by economic wellbeing. The interview was led to evaluate the effect of psycho-social factors on anxiety in pregnancy.

Socio-economic status was evaluated utilizing an altered Kuppuswamy scale, Psycho-Social Factors were surveyed utilizing a Multidimensional scale of perceived social support, and Pregnancy-related anxiety was evaluated utilizing Hamilton's scale. This study was approved by the institution's Ethical Committee. Informed consent and confidentiality of the participants: Informed consent of the study participants was taken. The details of the patients were kept confidential and analyzed after the removal of personal identifiers like name, address, etc.

Outcomes: Assessment of risk factors and complications causing anxiety at an early stage and educating pregnant women towards a positive pregnancy outcome and clinical pharmacist role in managing the anxiety in pregnant women. The statistical analysis will be carried out by Microsoft Office and Graph Pad Prism 8. Descriptive data analysis will be performed in the form of percentages.

## **RESULTS**

An aggregate of 229 cases that met our inclusion and exclusion criteria were included in the study. Factors like age, residence, trimester, maternal nutrition, parental consanguinity, gravida, maternal complications, education, profession, social support, stress, unplanned pregnancy, source of pregnancy-related information, history of catastrophic events, spouse physical violence, depression, domestic violence, and impact of these factors on anxiety during pregnancy were assessed. We have graded the presence of anxiety as severe, moderately severe, moderate, and mild, and surveyed the importance utilizing the chi-square test where 'P' < 0.05 was thought of as huge and significant.

### **AGE**

In the factor age, we have graded the age group into three levels. It includes age groups of less than 20, 21-30, and more than 30. Among 229 cases, 33 (14.4%) cases were reported in having age group less than 20, 181 (79.03%) cases were reported in age between 21-30, and 15 (6.55%) cases were reported in the age group of more than 30. The results were reported in table 1. Among 229 cases, 33 pregnant women who are under the age group of less than 20, 19 women were assessed as having anxiety, and 14 are not having anxiety. Of the 181 pregnant women who are in the age group of 21-30, 87 women were assessed to have anxiety and 94 are not having anxiety. Of the 15 pregnant women who are in the age group of more than 30, 2 women were assessed to have anxiety and 13 are not having anxiety. On performing statistical analysis using the chi-square p test, we have analyzed the impact of age on anxiety during pregnancy was found to be 0.0151. Therefore, it is significant that age has an impact on women during pregnancy.

**Table 1: Parameters influencing anxiety during pregnancy**

Parameters	Number	Percentage	Anxiety		Chi-square P-value
			Yes	No	
<b>Age Group</b>					
< 20	33	14.41	19	14	0.015
21 – 30	181	79.03	87	94	
> 30	15	6.55	2	13	
<b>Residence</b>					
Rural	61	26.63	35	26	0.23
Urban	168	73.36	73	95	
<b>Trimester</b>					
1st Trimester	17	7.42	10	7	0.03
2nd Trimester	89	38.86	31	58	
3rd Trimester	123	53.71	67	56	
<b>Parental consanguinity</b>					
Yes	56	24.45	29	27	0.42
No	173	75.54	79	94	
<b>Gravida</b>					
Primi	113	49.34	62	51	0.03
Multi	116	50.65	46	70	
<b>Maternal complications</b>					
Present	37	16.15	25	12	0.006
Absent	192	83.84	83	109	

**RESIDENCE**

In the residence factor, among 229 cases, 61 (26.6%) pregnant women are from rural and 168 (73.36%) are from urban areas. Among 61 pregnant women who are from rural areas, 35 were assessed to have anxiety and 26 women are not having anxiety. Of the 168 pregnant women who are from an urban area, 73 were assessed to have anxiety and 95 women are not having anxiety. Using the chi-square p-value, we have analyzed the impact of residence on pregnancy-related anxiety, and it was found to be 0.237. Therefore, the residence has no impact on women during pregnancy. The results were reported in table 1.

**TRIMESTER**

In the trimester factor, we have graded it into the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> trimesters. Among 229 (7.42%) cases, 17 pregnant women were in 1<sup>st</sup> trimester, 89 (38.86%) women were in 2<sup>nd</sup> trimester and 123 (53.71%) cases were in 3<sup>rd</sup> trimester. Among 17 pregnant women who are in the 1<sup>st</sup> trimester, 10 were assessed to have anxiety and 7 were not having anxiety. Among 89 pregnant women who are in the 2<sup>nd</sup> trimester, 58 were assessed to have anxiety and 31 were not having anxiety and among 123 pregnant women who are in the 3<sup>rd</sup> trimester, 69 were assessed to have anxiety, and 44 were not having anxiety. Using the chi-square p-value, we have analyzed the impact of trimester on pregnancy-related anxiety, and it was found to be 0.030. Therefore, it is significant that the trimester has an impact on women during pregnancy. The results were reported in table 1.

**MATERNAL NUTRITION**

In the factor maternal nutrition, among 229 cases, 227(99.12%) pregnant women were assessed to have good maternal nutrition and 2 (0.87%) were not having maternal nutrition.

**PARENTAL CONSANGUINITY**

In the parental consanguinity factor, among 229 cases, 56 (24.45%) pregnant women were assessed to have consanguineous marriages and 173 (75.54%) were not assessed to have parental consanguinity. Of these, 56 pregnant women who are having parental consanguinity, 29 cases were analyzed to have anxiety and 27 are not having anxiety. Among 173 pregnant women who are not having parental consanguinity, 79 cases were analyzed to have anxiety and 94 are not having anxiety. By performing statistical analysis, the impact of parental consanguinity on pregnancy-related anxiety was found to be 0.425. Therefore, parental consanguinity has no impact on women during pregnancy. The results were reported in table 1.

**GRAVIDA**

In the gravida factor, among 229 cases, 113 (49.34%) pregnant women were assessed to have primigravida and 116 (50.65%) cases were assessed to have multigravida. In this, 113 pregnant women of primigravida, 62 were analyzed for having anxiety and 51 were analyzed for not having anxiety. Among 116 pregnant women with multigravida, 46 were having anxiety and 70 are of no anxiety. The impact of gravida on pregnancy-related anxiety was found to be 0.0382. Therefore, gravida has an impact on women during pregnancy. The results were reported in table 1.

### MATERNAL COMPLICATIONS

In the maternal complications factor, among 229 cases, 37 (16.15%) pregnant women were assessed to have maternal complications during pregnancy and 192 (83.84%) cases were not assessed to have maternal complications. Of these, 37 pregnant women who were having maternal complications, 25 cases were analyzed to have anxiety and 12 were not having anxiety. And among 192 pregnant women who are not having maternal complications, 83 cases were analyzed to have anxiety and 109 were not having anxiety. The impact of maternal complications on pregnancy-related anxiety was found to be 0.006616717 by using the chi-square value. Therefore, maternal complications have an impact on women during pregnancy. The results were reported in table 1.

### EDUCATION

In the education factor, among 229 cases, 104 (45.41%) cases of pregnant woman's husbands were assessed to have a professional degree, 71 (31.00%) cases were having a graduate or postgraduate degree, 29 (12.66%) cases were having intermediate or above SSC education, 12 (5.24%) cases were having SSC, 9 (3.93%) cases were having upper primary education, 1 (0.43%) case was having primary school education and 3 (1.31%) cases were illiterate. The results were reported in table 2.

### PROFESSION

In profession factor, among 229 cases, 94 (41.04%) cases of pregnant woman's husbands were reported to have professional work, 82 (35.80%) cases were having semiprofessional work, 25 (10.91%) cases were having clerk/shop owner/farming profession, 9 (3.93%) cases were having skilled work, 6 (2.62%) cases were having semi-skilled work, 6 (2.62%) cases were having unskilled work and 1 (0.43%) case was unemployed.

### INCOME

In income factor, among 229 cases, 24 (10.48%) cases of pregnant women's husband had >1,23322 of income, 77 (33.62%) cases had 61,663-1,23321 of income, 60 (26.06%) cases had 46,129-61,662 of income, 38 (16.59%) had 30,831-46,128 of income, 27 (11.7%) cases had 18,497-30,830 of income, 2 (0.87%) cases had 6175-18,496 of income, 1 (0.43%) were had <6174 of income. The results were reported in table 2.

**Table 2: Social determinants of status of pregnant woman's husband**

Social determinants	Number	Percentage
<b>Education</b>		
Professional	104	45.41
Graduate or Postgraduate	71	31.00
Intermediate or above SSC	29	12.66
SSC	12	5.24
Upper Primary education	9	3.93
Primary school education	1	0.43
Illiterate	3	1.31
<b>Profession</b>		
Professional	94	41.04
Semi-professional	82	35.80
Clerk, shop owner, farming	25	10.91
Skilled worker	12	5.24
Semi-skilled worker	9	3.93
Unskilled worker	6	2.62
Unemployed	1	0.43
<b>Income</b>		
>1,23322	24	10.48
61,663-1,23321	77	33.62
46,129-61,662	60	26.20
30,831-46,128	38	16.59
18,497-30,830	27	11.79
6175-18,496	2	0.87
<6174	1	0.43

### SOCIO-ECONOMIC CLASS

Among 229 cases, 16 (6.98%) cases belong to the upper class, 110 (48.03%) cases belong to the upper-middle class, 82 (35.80%) cases belong to the lower middle class, 20 (8.73%) cases belong to the upper lower class and 1 (0.43%) belong to lower class. The results were given in table 3.

**Table 3: Socio-economic class of pregnant women**

Socio-Economic Class	Number	Percentage	Anxiety		P-value
			Yes	No	
Upper	16	6.98	1	15	0.0002
Upper Middle	110	48.03	45	65	
Lower Middle	82	35.80	47	35	
Upper Lower	20	8.73	14	6	
Lower	1	0.43	1	0	

**SOCIAL SUPPORT**

In the social support factor, among 229 cases, 65 (28.38%) pregnant women were assessed to have high social support, 153 (66.81%) cases were assessed to have medium social support and 11 (4.80%) cases were assessed to have low social support. The results were reported in table 4. Of these, 65 pregnant women who are having high social support, 15 cases were analyzed to have anxiety, and 50 were not having anxiety. Among 153 pregnant women who are having medium social support, 67 cases were analyzed to have anxiety and 86 are not having anxiety. And among 11 pregnant women who are having low social support, 7 cases were assessed to have anxiety and 4 were not having anxiety. The results were reported in table 8. By performing statistical analysis, the impact of social support on pregnancy-related anxiety was found to be 0.0036. Therefore, social support has an impact on pregnant women.

**Table 4: Psycho-Social factors in pregnant women and the impact of social support on anxiety**

Psycho-Social factors	Number	Percentage	Anxiety		Chi-squareP-value
			Yes	No	
<b>Social support</b>					
High	65	28.38	20	45	0.003
Medium	153	66.81	81	72	
Low	11	4.80	7	4	
<b>Unplanned pregnancy</b>					
Yes	128	55.89	54	74	0.089
No	101	44.10	47	47	
<b>Source of Pregnancy-Related information</b>					
Yes	224	97.81	103	121	0.0167
No	5	2.18	5	0	
<b>History of catastrophic events</b>					
Yes	45	19.65	30	15	0.0034
No	184	80.34	78	106	

**UNPLANNED PREGNANCY**

In the unplanned pregnancy, among 229 cases, 128 (55.89%) cases of pregnant women were assessed to have an unplanned pregnancy and 101(44.10%) cases were assessed to have a planned pregnancy. The results were reported in table 4. Of these, 128 pregnant women who are having an unplanned pregnancy, 54 cases were analyzed to have anxiety and 74 are not having anxiety. Among 101 pregnant women who are having planned pregnancies, 54 cases were analyzed to have anxiety and 47 were not having anxiety. The Chi-squarep-value was found to be 0.0896. Therefore, unplanned pregnancy shows no impact on pregnancy-related anxiety.

**SOURCE OF PREGNANCY-RELATED INFORMATION**

In the source of pregnancy-related information, among 229 cases, 224 (97.81%) pregnant women were assessed to have the source of pregnancy-related information and 5 (2.18%) were not having the source of pregnancy-related information. The results were reported in table 4. In this, 224 pregnant women were having sources of pregnancy-related information, 103 pregnant women were analyzed to have anxiety and 121 were not having anxiety. Among 5 pregnant women who were not having the source of pregnancy-related information; all of them were analyzed to have anxiety. By performing statistical analysis, the impact of the source of pregnancy-related information on pregnant women was found to be 0.0167. Therefore, the source of pregnancy-related information shows the impact on women during pregnancy.

**HISTORY OF CATASTROPHIC EVENTS**

In the history of catastrophic events, among 229 cases, 45 (19.65%) pregnant women were assessed to have a history of past catastrophic events and 184 (80.34%) cases were not assessed to have a history of catastrophic events. The results were reported in table 4. In this, 45 pregnant women were assessed to

have a history of catastrophic events, 30 cases were analyzed to have anxiety and 15 were not having anxiety, 184 pregnant women who were not having a history of catastrophic events, 78 cases were analyzed to have anxiety and 106 were not having anxiety. Using the chi-square p-value, the impact of the history of catastrophic events on pregnant women was found to be 0.003. Therefore, a history of catastrophic events shows an impact on women during pregnancy.

**DOMESTIC AND SPOUSE PHYSICAL VIOLENCE**

Among 229 cases, 4 (1.74%) pregnant women were reported to have domestic violence and 225 (98.25%) cases were reported not having domestic violence.

In the spouse physical violence, among 229 cases, 2 (0.87%) pregnant women were suffering from spouse physical violence and 227 (99.12%) cases had no spouse physical violence.

**DEPRESSION AND STRESS**

In stress factors, among 229 cases, 32 (13.97%) cases of pregnant women were reported to have stress and 197 (86.02%) cases did not have stress. In depression, among 229 cases, 25 (10.91%) pregnant women were assessed to have depression and 204 (89.08%) cases were assessed as not having depression.

**ANXIETY**

Among 229 pregnant women, 14 (6.11%) were analyzed to have severe anxiety, 25 (10.91%) were analyzed to have moderately severe anxiety, 27 (11.79%) were analyzed to have moderate anxiety, 42 (18.34%) were analyzed to have mild anxiety and 121 (52.83%) were analyzed of not having anxiety. The results were reported in table 5.

**Table 5: Gradation of anxiety:**

Anxiety	Number	Percentage
Severe	14	6.11
Moderately Severe	25	10.91
Moderate	27	11.79
Mild	42	18.34
None	121	52.83

**DISCUSSION**

This study is to evaluate the prevalence of anxiety during pregnancy in a sample of women attending the tertiary care hospital in both urban and rural areas. The data was collected using a structured questionnaire associated with different scales based on different factors like age, residence, trimester, maternal complications, etc. In this study half of the pregnant women (47.17%) were suffering from pregnancy-related anxiety of various grades like Mild (18.3%), Moderate (11.7%), Severe (6.1%), Moderately severe (10.95%).

According to the factor age, out of 229 pregnant women, the age group with 21-30 a greater proportion of pregnant women were accessed of having anxieties, which is 87 out 108 and on performing statistical analysis using chi-square ‘P’ test our results showed that age has a significant effect on anxiety.

Contrary to this is the finding of Mahin, Sahar, Homeyra, and Mohammad, (2015) who reported no significant influence of age on social support received among pregnant women attending antenatal clinics in selected hospitals in the Ibadan metropolis [15].

Regarding the trimestral prevalence of antenatal anxiety, our study found that the prevalence of anxiety was highest during 3<sup>rd</sup> trimester. On contrary, among Indian studies, Madhava Prabhakaran et al with the help of the Pregnancy Specific Anxiety Scale (PSAS), found that all women during the first trimester had some degree of pregnancy-specific anxiety, which was mostly the moderate form in 89.4% of the women [16].

Our results show, that out of 108 pregnant women with primi and multigravida, 62 with primi and 46 with multigravida were accessed of having anxiety. The findings from the study indicated higher anxiety levels in primigravida women. Physical activity, regular pregnancy check-ups, having trust in health care providers, and attending childbirth preparation classes are the strongest predictors within the study population.

Out of 108, 25 with maternal complications and 83 with no maternal complications were accessed of having anxiety. Among the socio-demographic factors, we could not demonstrate any relevant association of pregnancy-related anxiety concerning pregnant women’s education, occupation, and income. While Lau and Yin (2011) contended that well-educated women could handle stress in a better way during pregnancy [17].

So, we considered pregnant women's husbands, socio-demographic factors. Our results show that having a low level of education being jobless and having financial difficulties are the three crucial predisposing factors of anxiety in pregnant women who tend to receive prenatal care less frequently and are at higher risk for obstetric complications. Like our findings, previous studies that have the associations between SES and pregnancy outcomes depended on which SES parameter was used [18]

Among psycho-social factors, 'medium social support' emerged as a significant predictor of anxiety. Increased social support and partner support appear to decrease the risk for antenatal anxiety. Identified barriers to social support during pregnancy include poor family income, spouses' nature of the job, and hospital policy. We could not find any important linkage between residence, and parental consanguinity although many studies showed higher anxiety. Supplementation did not affect pregnancy outcomes, so our analysis did not subdivide our participants on this basis. Also, an unplanned pregnancy did not appear to predispose to prenatal anxiety.

While spouse physical and domestic violence is known as a stressor [19,], paradoxically in the present study the prevalence of anxiety was seeming lower in respondents who were victims; this may be described as a respondent bias in the form of non-reporting, most likely due to fear apprehension or an associated social stigma. Similar cases of spousal violence go under-reported, the reported cases present the "tip of the iceberg" [20].

The history of catastrophic events has emerged as a significant factor for anxiety. A catastrophic event is defined as a disaster or accident which takes place within a designated area or is caused by an act of terrorism or war, and results in the deaths of six or more persons within 30 days after the onset of such an event, regardless of the cause, that causes damage to property of significant severity and magnitude. Examples of natural catastrophic events are natural disasters, like floods, fires, earthquakes, droughts, tsunamis, and epidemics [21]. Human-made catastrophic events are wars, explosions of factories, nuclear reactors, and acts of terrorism. All these events may aggravate the economic state of individuals, regions, and countries and specific restrictions on transport, housing, job loss, and hunger.

## CONCLUSION

Our study highlights that anxiety is quite common among pregnant women. Therefore, there is a need to incorporate screening for anxiety in the existing antenatal programs and development of strategies to provide practical support to those identified. The findings from this study provided much-needed insight into the perspectives and priorities of women, who have experienced PRA and further support the need to explore this phenomenon.

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## CONFLICT OF INTEREST

None declared

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