

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20171504>

## Original Research Article

# A study of antenatal anxiety: comparison across trimesters

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**Received:** 23 March 2017

**Accepted:** 28 March 2017

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### ABSTRACT

**Background:** The aim of present study was to investigate the antenatal anxiety across all three trimesters of pregnancy.

**Methods:** This is a cross sectional, observational study for which data is collected from consenting subjects attending antenatal Out Patients department for routine antenatal checkup. Data included socio demographic information's and Hospital Anxiety and Depression Scale and statistical analysis done.

**Results:** Out of 169 Pregnant females 27.8% were during first trimester, 40.8% during second trimester and 31.4% during 3<sup>rd</sup> trimester. The mean anxiety scores for first, second and third trimester was  $10.74 \pm 2.97$ ,  $11.69 \pm 3.09$  and  $14.20 \pm 3.10$  respectively. Independent t test revealed significantly higher anxiety scores for third trimester when compared to first trimester scores ( $t = -6.035$ ,  $p$  value = 0.000).

**Conclusions:** This study finds a significantly higher antenatal anxiety during third trimester of pregnancy.

**Keywords:** Antenatal anxiety, Pregnancy, Trimester

### INTRODUCTION

Pregnancy and delivery bring many physiological and psychosocial changes and increased vulnerability for the onset or relapse of a mental illness, anxiety disorders are two to three times more common among pregnant women in compared to general population.<sup>1,2</sup>

Depression and anxiety have been linked to somatic complaints, gestational and obstetric complications, stillbirth, premature birth, low birth weight, low Apgar scores, smaller head circumference, alterations in fetal motor activity, affected fetal heart rate patterns and major congenital anomalies.<sup>3-8</sup> Some studies found the prevalence of similar antenatal anxiety across all three trimesters, but many Previous studies reported that antenatal anxiety varied at different trimesters of

pregnancy and high anxiety was found during first and third trimester.<sup>9-12</sup>

Hence antenatal anxiety across trimesters can be of differing severity and different types of anxiety that may have differing consequences as morbidity. we planned this study to compare the differing severity of antenatal anxiety across all three trimesters of pregnancy.

### METHODS

The aim of the present study was to compare the antenatal anxiety across all three trimesters of the pregnancy. This study was conducted at Hi-Tech Medical College and Hospital, Bhubaneswar, India which is a tertiary care medical college hospital. The study protocol was approved by the institutional review board of Hi-Tech Medical College and Hospital, Bhubaneswar,

India. This study is a part of hospital survey for the prevalence of antenatal anxiety and depression, published earlier.<sup>13</sup> It was a cross-sectional study carried out over a three-month period (November 2016 - January 2017). All adult elective ANC patients who satisfied the inclusion criteria for the study and consented were recruited. All recruited patients were requested to complete a questionnaire about their socio-demographic data sheet and thereafter Hospital Anxiety and Depression Scale (HADS).<sup>14</sup> was applied, for this present study we utilize only anxiety subset of HADS.

**Subjects**

All consenting pregnant women visiting Obstetrics and Gynecology out patient’s department (OPD) for Ante Natal Checkups, were included for this study. Exclusion criteria were presence of any major co morbid medical or other illness. Patients were examined clinically after taking detailed history and their socio demographic variables.

**Tools**

Socio-demographic Data Sheet: The socio demographic data sheet included age, religion, occupation, education and clinical information like duration of pregnancy and other obstetric history.

**Hospital anxiety and depression scale (HADS)**

This is very well validated scale to assess anxiety and depression among hospital based patients. It consists 14 questions, 7 scoring anxiety and 7 scoring depression. Patients were asked to read each question and place a tick against the reply that came closest to how they had been feeling that day. Each answer was scored 0, 1, 2 or 3. The possible range of scores was therefore 0 to 21, with higher scores indicating greater levels of anxiety. Score of 0-7 is considered normal, scores of 8-10 is borderline abnormal and scores of 11-21 is abnormal case.<sup>14</sup>

**Procedure**

It was a cross sectional observational study. All subjects were assessed for inclusion–exclusion criteria, and on qualification they were requested to fill up Socio-demographic data sheet or asked verbally and filled up by investigators. The HADS was applied on all subjects and recorded. Only the anxiety subset of HADS was taken into consideration for this study.

**Statistical analysis**

The collected data of all subjects was statistically analyzed, using Statistical Package for Social Sciences (SPSS, Inc., Chicago, Illinois) version 10.0.

Data analysis included means and standard deviations for complete sample. The complete sample was categorized

as trimester first, second and third as per the duration of pregnancy. Data analysis included means and standard deviations for each trimester. The parametric t-test was used to determine if differences existed between the groups. Statistically significant levels are reported for p values less than or equal to 0.05. Highly significant levels are p values less than .001.

**RESULTS**

A total of 169 subjects were included for the study, Table 1 summarizes the sample characteristics. The mean age of the sample was 25.48 years ( $\pm 4.64$  years) with minimum age of 18 years to a maximum age of 32 years in ours sample. the mean education years for the sample was found to be  $10.37 \pm 2.61$ .

Most of the sample was during second trimester 40.8%, followed by 3rd trimester 31.4% and 1st trimester was 27.8 %. However, the mean duration of pregnancy for the sample was found to be  $17.42 \pm 6.80$  weeks. (Table 1).

**Table 1: Sample characteristics and findings.**

Total n=169	Min	Max	Mean $\pm$ SD
Age	18	32	25.48 $\pm$ 4.64
years of education	5	15	10.37 $\pm$ 2.61
duration of pregnancy (weeks)	8	36	17.42 $\pm$ 6.80
		<b>n</b>	<b>%</b>
Religion	Hindu	128	75.7
	Others	41	24.3
occupation	House wives	113	66.9
	Working	56	33.1
gravidia	Primi gravida	60	35.5
	Poly gravida	109	64.5
history of abortion	Absent	137	81.1
	Present	32	18.9

**Table 2. Comparison of mean anxiety scores across three trimesters of pregnancy.**

	Mean HADS anxiety subscale	t	DF	Sig.(2-tailed) p value
1 <sup>st</sup> Trimester (n=47)	10.74 $\pm$ 2.97	-1.714	114	0.089
2 <sup>nd</sup> Trimester (n = 69)	11.69 $\pm$ 3.09			
1 <sup>st</sup> Trimester (n=47)	10.74 $\pm$ 2.97	-6.035	97.40	0.000
3 <sup>rd</sup> Trimester (n=53)	14.20 $\pm$ 3.10			

On comparing mean anxiety scores of first trimester and second trimester, there was no significant difference  $10.74 \pm 2.97$  and  $11.69 \pm 3.09$  respectively ( $t = -1.714$ ,  $p$

value = .089). (Table 2). When we compared mean anxiety scores of first trimester and third trimester, we found significantly higher anxiety scores for third trimester ( $10.74 \pm 2.97$  and  $14.20 \pm 3.10$  respectively ( $t = -6.035$ ,  $p$  value = 0.000) (Table 2).

## DISCUSSION

This study is a cross sectional prevalence study where we assessed the point prevalence of antenatal anxiety. We included 169 pregnant females with various duration of pregnancy (mean duration of pregnancy was  $17.42 \pm 6.80$  weeks). Other sample characteristics can be described in terms of mean age of  $25.48 \pm 4.64$  years and mean years of education was  $10.37 \pm 2.61$  years. We found a very high prevalence of anxiety 28.4% among our sample of antenatal clinic. This finding is in collaboration with many other studies reporting antenatal anxiety ranges between 12.2% to 39%.<sup>15,16</sup>

The findings of significantly higher antenatal anxiety during third trimester is in agreement with previous reports by Madhavanprabhakaran et al where they found higher third trimester pregnancy-specific anxiety in a large sample of 500 pregnant females. That study used State Trait Anxiety Inventory and Pregnancy-Specific Anxiety Inventory and they also identified young age, nulliparous status and nuclear family as common risk factors of pregnancy-specific anxiety.<sup>17</sup>

Female as a gender is itself susceptible for stress, anxiety and depression, and there may be dread of childbirth are vulnerability for surgical intervention and subsequent psycho-social issues.<sup>18</sup> In a study adjusted linear regression model for anxiety measured by general anxiety (STAI-trait) was inversely associated with literacy, per capita daily household expenditure on food, and practical support during pregnancy; it was directly associated with poor relationship with husband, physical violence ever, and violence during pregnancy.<sup>19</sup>

There may be various psychosocial factors to neuro-endocrinal factors that may contribute to antenatal anxiety during entire period of pregnancy as well as significantly higher anxiety during third trimester of pregnancy. This study lacks to address those possible psychosocial and neuro endocrinal factors involved, present study also limited by its shorter sample size and lack of follow up longitudinal design, which may be corrected in future studies.

## CONCLUSION

This study finds a significantly higher antenatal anxiety during third trimester of pregnancy when compared to first or second trimester of pregnancy.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Priyambada K, Patojoshi A, Bakhla AK. A study of antenatal anxiety: comparison across trimesters. *Int J Reprod Contracept Obstet Gynecol* 2017;6:1810-3.