

Original Article

# Generalized Anxiety Disorder Among Pregnant Women Attending Antenatal Clinic at Primary Health Care Ungwar Rimi, Kaduna State

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## ABSTRACT

Pregnancy is a major physiological change in the life of a woman. It is often accompanied by emotional disorders, including anxiety disorder. 1 The concerns and worries about the health of the unborn child could be enormous and some women are known to suffer psychological distress at this time. 2 Most studies assessing the correlates of anxiety among pregnant women in Nigeria were mainly carried out in tertiary health institutions in Southern Nigeria, leaving out those that attend Primary Health Care (PHC) centres. The objective of this study was to determine the prevalence and correlates of Generalized Anxiety Disorder (GAD) among pregnant women seeking antenatal care at the PHC Centre in UngwarRimi, Kaduna State. One hundred and fifty women at various stages of pregnancy, aged twenty years and above were randomly selected and interviewed by PHC workers using the 7-items Generalized Anxiety Disorder (GAD-7) and the author used the Anxiety module of Structured Clinical Interview for DSM (Diagnosis and Statistical Manual of Mental) Disorders (SCID) to assess the same participants. The prevalence of GAD identified by the PHC workers was 15.3%. The prevalence rate recorded using more elaborate SCID was 10.7%. No significant statistical difference between the two rates was found. Determinants of GAD among the subjects were primigravida (OR= 4.32; 95% CI 3.21 – 8.20), previous adverse pregnancy outcome (OR=2.40; 95% CI 1.00 – 8.15), partner violence (OR = 3.15; 95% CI 1.22 – 7.56). GAD is common in pregnancy and routine screening for anxiety disorder during antenatal care using simple, easily administered tool like GAD-7 could help to identify those at risk even by primary health workers. Prompt referral to psychiatry for management will improve overall wellbeing of women in pregnancy.

**Keywords:** GAD, Antenatal care, PHC.

## INTRODUCTION

The Primary Health Care (PHC) is the first health care service available to the populace at the community level in the hierarchy of health systems in Nigeria.<sup>3</sup> It is present in most communities, including UngwarRimi community in Kaduna North Local Government Area of Kaduna State, Northwest Nigeria. Members of the community patronized the

PHC for various health care services, including family planning, pregnancy, maternity care and immunization of children.

Pregnancy is a major physiological changes in the life of a woman that is often accompanied with significant emotional changes.<sup>2</sup> One of such emotional changes that may occur in pregnancy is Anxiety Disorder.<sup>1</sup> The concerns for the health of the mother and pregnancy

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outcome can be enormous and some vulnerable women may suffer psychological distress.<sup>2</sup>

Several studies have been carried out to assess the correlates of psychological disorders of expectant mothers especially depressive illness at various stages of pregnancy.<sup>4,5</sup> Emphasis has been more on depressive disorders among adult women in pregnancy than anxiety disorders. The available studies on anxiety disorders in pregnancy were carried out among women attending antenatal care at tertiary health institutions in Nigeria and were mainly done in Southwest Nigeria.<sup>1,5</sup> There is dearth of information regarding anxiety disorders in pregnancy in Northern Nigeria. The aim of this study was to determine the prevalence and correlates of Generalized Anxiety Disorder (GAD) among pregnant women attending antenatal care at a Primary Health Care Centre in Northern Nigeria.

## MATERIALS AND METHODS

This was a hospital-based study involving one hundred and fifty women, aged twenty years and above attending antenatal care at UngwarRimi PHC centre. The sample size was based on prevalence of 9.5% of GAD reported by Buist et al in a study among pregnant women.<sup>6</sup> Using the formula  $n = pq (1.96)^2 / d^2$  where  $p = 0.095$ ,  $q = 0.905$  and  $d = 0.05$  gave a minimum sample size of 132 that was rounded up to 150. The study participants were selected via simple random sampling technique over a period of ten weeks from May 2021 to July 2021. The study was approved by Kaduna State Ministry of Health. Informed consent was obtained from the study participants. The nurses and community health workers at PHC were trained on use of GAD-7 to screen for anxiety symptoms. A threshold score of 10 (GAD-7 at cut-off score of 10 has sensitivity of 89.0% and specificity of 82.0% as reported in previous study<sup>7</sup>) was adopted in this study to identify those with anxiety symptoms.

### Study Procedure

The antenatal clinic runs twice a week with an average of twenty patients seen per clinic day. The purpose of the study was explained to the participants and they consented to participate in the study. Ten participants

were randomly selected per clinic day. The PHC workers administered the 7-items GAD on the selected patients and transferred the same patient to the author for assessment. All the study participants were assessed with Generalized Anxiety Disorder module of Structured Clinical Interview for DSM-IV diagnosis by the author. Questionnaires designed by the author were also used to collect the socio-demographic and clinical details of the participants.

## DATA ANALYSIS

The Statistical package for Social Sciences (SPSS) version 20 was used to analyze the data. Descriptive statistics were calculated and chi square was used to establish associations and multiple logistic regression was used to establish independent determinants. All statistical tests were carried out at 5% level of probability.

## RESULTS

The Socio-Demographic Characteristics of the Participants was shown in Table 1 and the clinical variables in table 2. The mean age was 29.9 years with SD of  $\pm 0.5$  years. Most of them were married and one-fifth of them were uneducated. About one-third were unemployed. Similarly, about one-third of them were multiparous in polygamous family settings and they had previous history of adverse pregnancy outcome. The number of participants identified with Generalized Anxiety Disorder, using a cut-off point of 10 was 23 (table 3), giving a prevalence rate of 15.3%. The number of participants diagnosed with GAD using SCID was 16 (Prevalence rate of 10.7 %). The differences in the two prevalence rates were not statistically significant. The factors found to be significantly associated with GAD among the women were primigravida, stages of pregnancy, presence of antenatal problems, history of adverse pregnancy outcome and partner violence (table 4). These significant variables were subjected to multiple logistic regression and the independent determinants of GAD in this study were primigravida, experience of adverse pregnancy outcome and partner violence (table 5).

**Table 1: Socio-Demographic Characteristics of Participants (N=150)**

Variable	Frequency (N)	Percentage
<b>Age (Years)</b>		
20 – 29	82	54.7
30 – 39	54	36.0
40 – 49	14	9.3
Mean:29.9 (0.5) years		
<b>Marital Status</b>		
Single	5	3.3
Married	130	86.7
Divorced	15	10.0
<b>Ethnicity</b>		
Hausa	95	63.3
Yoruba	35	23.3
Others	20	13.4
<b>Religion</b>		
Christianity	33	22.0
Islam	117	78.0
<b>Educational Level</b>		
None	30	20.0
Primary	42	28.0
Secondary	51	34.0
Tertiary	27	18.0
<b>Occupation</b>		
Unemployed	58	38.7
Civil servant	41	27.3
Trading	30	20.0
Others	21	14.0

**Table 2: Clinical Characteristics of Participants (N=150)**

Clinical Variable	Frequency(N)	Percentage
<b>Marriage Type</b>		
Monogamous	52	34.7
Polygamous	98	65.3
<b>Gravidity</b>		
Primigravida	58	38.7
Multigravida	92	61.3
<b>Stages of Pregnancy</b>		
First Trimester	35	23.3
Second Trimester	46	30.7
Third Trimester	69	46.0
<b>Presence of Antenatal problems</b>		
Yes	20	13.3
No	130	86.7
<b>Previous Prolong Labour</b>		
Yes	32	21.3
No	118	78.7
<b>History of Still birth</b>		
Yes	14	9.3
No	136	90.7
<b>History of Postpartum Bleeding</b>		
Yes	18	12.0
No	132	88.0
<b>History of previous Delivery at Home</b>		
Yes	48	32.0
No	102	68.0
<b>Presence of Partner violence</b>		
Yes	55	36.7
No	95	63.3

**Table 3: GAD-7 Scores of Study Participants (N=150)**

Score	Frequency (N)	Percentages
0	77	51.3
1-5	50	33.3
6-10	16	10.7
11-15	6	4.0
16-20	1	0.7

Using cut-off point of 10, the prevalence of GAD was 15.3% (N=23)

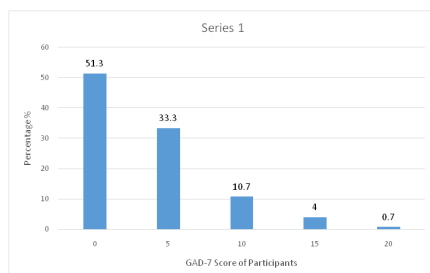


Fig. 1 Bar Chart Showing Percentage GAD-7 Scores of Participants

**Table 4: Socio-demographic and Clinical Factors Associated with GAD (N=150).**

Variable	Normal	Generalized Anxiety Disorder	Statistics
<b>Marital Status</b>			
Single/Divorced	20 (80.0)	5 (20.0)	$\chi^2 = 2.74$
Married	114 (91.2)	11 (8.7)	$p = 0.22$
<b>Marriage Type</b>			
Monogamy	40 (80.0)	10 (20.0)	$\chi^2 = 6.86$
Polygamy	94 (94.0)	6 (6.0)	$p = 0.14$
<b>Gravidity</b>			
Primigravida	32 (74.4)	11 (25.6)	$\chi^2 = 14.07$
Multigravida	102 (95.3)	5 (4.7)	$p < 0.001^*$
<b>Stage of Pregnancy</b>			
Early	54 (90.0)	6 (10.0)	$\chi^2 = 0.05$
Late	80 (88.9)	10 (11.1)	$p = 0.57$
<b>Presence of Antenatal problems</b>			
Yes	60 (87.0)	9 (13.0)	$\chi^2 = 0.76$
No	74 (91.4)	7 (8.6)	$p = 0.043^*$
<b>Partner violence</b>			
Yes	66 (85.7)	11 (14.3)	$\chi^2 = 2.17$
No	68 (93.2)	5 (6.8)	$p < 0.001^*$
<b>Adverse pregnancy outcome</b>			
Yes	70 (87.5)	10 (12.5)	$\chi^2 = 0.61$
No	64 (91.4)	6 (8.6)	$p = 0.021^*$

\*Significant Variables

**Table 5: Logistic Regression Analysis: Independent Determinants of GAD (N=150)**

Variable	Odds Ratio	95% CI OR	p-value
<b>Gravidity</b>			
Primigravida	4.32	3.21 – 8.20	0.040*
Multigravida (ref)	1		
<b>Adverse pregnancy outcome</b>			
Yes	2.40	1.00 – 8.15	0.015*
No (ref)	1		
<b>Partner violence</b>			
Yes	3.15	1.22 – 7.56	0.001*
No (ref)	1		

\*Significant variables; CI = Confidence Interval; OR = Odd Ratio

## DISCUSSION

The socio-demographic characteristics of the study participants revealed about three-quarters of them were muslimultiparous women in polygamous family settings reflecting the socio-cultural norm of the study area. Almost half of the participants did not acquired education beyond primary school; consequently more than of the subjects were unemployed. This finding reflect the low girl child education in northern Nigeria as reported by Adeola et al, 2009.<sup>8</sup>

The GAD-7 administered by PHC workers identified twenty-three participants with a GAD-7 score of 10 and above which was used as cut-off point for identifying generalized anxiety disorder in this study, giving a prevalence of 15.3%. Spitzer et al. reported a sensitivity of 89% and specificity of 82% for GAD-7 in picking GAD at cut-off point of 10<sup>7</sup>, even though some studies classified a GAD-7 score of 5 – 9 as mild, 10 – 14 moderate and 15 – 21 as severe GAD for brief intervention of care.<sup>9</sup> The cut-off of 10 was used in this study. Using the more elaborate SCID, the prevalence of GAD was 10.7% (N=16). The two rates recorded were not statistically different. The PHC

workers and the non-mental health physicians attending to antenatal women should be encouraged to use GAD-7 for routine screening in antenatal care to identify and refer those that may require further assessment by a psychiatrist for prompt management.

The independent determinants of GAD among the participants were being a primigravida, experience of adverse pregnancy outcome and partner violence. The risk of developing GAD was four times higher in primigravida than multigravidarous women in this study (OR=4.32, CI= 3.21 – 8.20). This is in agreement with several other studies that identified women undergoing pregnancy for the first time as being more prone to anxiety disorder in pregnancy than those who have been delivered previously.<sup>1,5</sup> This may be related to excessive worries and fear often expressed by a first timers, doubting their capacity to successfully carry the pregnancy to term and deliver the baby safely.

Adverse pregnancy outcomes such as prolong labour, postpartum bleeding and still births were reported in more than half of the subjects. Women who experienced adverse pregnancy outcomes were about twice more at risk of developing GAD in pregnancy than those without such history in this study. The practice of delivery at home as observed in more than half of the participants who may probably be attended to by unskilled birth attendants may be responsible for these adverse outcomes. This findingsupports the work of Bukar et al that a significant number of womendelivered at home in northern Nigeria under the supervision of unskilled birth attendants with resultant complications.<sup>10</sup> The fear of possible repeat of such outcome may be responsible for the anxiety especially in resource-poor settings where adequate fetal monitoring may be hampered by unavailability of funds and/or equipment.<sup>5</sup>

Partner violence ranging from verbal to physical abuse were reported in over sixty percent of the participants. Finding from this study showed that women who experienced partner violence were three times more prone to developing anxiety disorder than those in normal peaceful relationship with their partners. Intimate partner violence has been reported to have adverse effects on mental health of the victim.<sup>11</sup>The charged atmosphere characterized by

shouting, abuses and physical attacks dampen emotion and distort neurotransmitters, which may provoke anxiety disorders. Dysregulation of the amygdala, the neurobiological centre of emotion is known to precipitate psychiatric disorders, including anxiety and depression.<sup>12</sup> The serotonergic system that richly innervates this centre appears to be crucial for the myriad of brain functions, including cognition and emotion, and dysregulation of the serotonergic system has long been implicated in the generation of aversive emotions such as fear and anxiety.<sup>13</sup>Adebowale et al reported that intimate partner violence was common amongst pregnant women in southern Nigeria with an increased risk for psychiatric morbidity, including anxiety disorders.<sup>14</sup>

## CONCLUSION

This study showed that generalized anxiety disorder is common in pregnancy especially among the primigravida and women that experienced adverse pregnancy outcome and partner violence. There is the need to look out for these factors among the antenatal attendees and make it as a routine, screening for anxiety disorder using the simple, easily administered and less-time consuming tool like GAD-7 to identify those at risk and refer them promptly for further psychiatric evaluation. This will help in promoting the overall wellbeing of women in pregnancy and prevent adverse effects of psychiatric morbidity on their fetuses and newborns.

## Limitations

It is point prevalence study that cannot establish causality. It may be necessary to carry out prospective analytical study of the identifiable risk factors to determine their independent contribution to anxiety disorder in pregnancy. In addition, constitutional make-up and genetic factors of the participants were not explored by this study.

## Recommendations

Routine screening for anxiety disorders during antenatal care should be encouraged among the primary health care workers and non-psychiatrist physicians should use simple tools such as GAD-7 to identify cases of anxiety disorders in pregnancy and

institute appropriate treatment. This will help in providing improved holistic care for expectant mothers and ensure their optimal health, including that of their unborn child.

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