

# Anxiety and depression in pregnancy: prevalence and associated risk factors among pregnant women attending antenatal clinic in Aminu Kano Teaching Hospital Kano, Nigeria

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## Abstract

Pregnancy is not considered as a pathological state, however pregnancy heightens the vulnerability to emotional and psychological condition such as anxiety and depression. Untreated depression and anxiety during pregnancy may have negative effects on both the mother and the fetus. The objective of this study was to estimate the prevalence and associated risk factors of anxiety and depression during pregnancy.

Cross sectional descriptive study using systematic sampling technique was used to collect data among 297 pregnant women attending antenatal clinic in Aminu Kano Teaching Hospital, Kano. Data was collected using a structured questionnaire, Mini International Neuropsychiatric Interview (MINI 6.0).

About one-third of the respondents were in the age group 20-25 years. The prevalence of anxiety and depression during pregnancy were found to be 23.2% and 26.6% respectively. Risk factors that were significantly associated with anxiety during pregnancy were co-morbid depression during pregnancy ( $P=0.01$ ), and partner abuse ( $P=0.04$ ), with 37.5% anxious among those abused compared to 21.5% among those not abused. Risk factors associated with depression during pregnancy were co-existing medical

condition ( $P=0.04$ ) with 45.7% of respondents with coexisting medical condition found to be depressed compared to 24.0% without co-existing medical condition.

Anxiety and depression in pregnancy were found to be prevalent among the study subjects. Measures to detect anxiety and depression during pregnancy especially in those with risk factors should be introduced during routine antenatal care.

## Introduction

Pregnancy is not considered as a pathological state, however, pregnancy heightens the vulnerability to emotional and psychological condition such as anxiety and depression.<sup>1</sup> Untreated depression and anxiety during pregnancy may have negative effects on both the mother and the fetus. The objective of this study was to estimate the prevalence and associated risk factors of anxiety and depression during pregnancy.<sup>2</sup>

Anxiety is a state of emotional tension of uncertain or unknown cause, which produces feeling of apprehension and fear.<sup>1</sup> Anxiety is not the same as fear, which is a response to a real or perceived immediate threat, whereas anxiety is the expectation of future threat.<sup>2</sup>

Depression is a common mental illness, which is ranked the third most prevalent moderate and severe disabling condition globally by the World Health Organization (WHO).<sup>3</sup> It affects about 350 million people worldwide. The burden of depression is 50% higher in females than males.<sup>4</sup>

There is a wide variation in prevalence of depression during pregnancy: Brazil (14.2%), 31.1% in North Ethiopia (31.1%), India (12%) and Tanzania (39.5%).<sup>5</sup> In Nigeria the prevalence of depression in pregnancy was found to be 24.5%.<sup>5,6</sup>

Anxiety in pregnancy shows a wide variation in prevalence globally, with the following prevalence obtained across the world: Canada (25%), Australia (21%), China (20%) and Ghana (7%).<sup>7</sup>

This study was undertaken to determine the prevalence and associated risk factors of anxiety and depression in pregnancy among pregnant women attending antenatal clinic in Aminu Kano Teaching Hospital, Kano, Nigeria.

## Materials and Methods

Cross sectional descriptive study and a systematic sampling technique was used to collect data among 297 pregnant women attending antenatal clinic in Aminu Kano Teaching Hospital (AKTH), Kano. AKTH is a Federal tertiary health institution situated in Kano, Kano State, and offers specialist care to people in the State and some neighboring states. Data was collected using a structured questionnaire, Mini International Neuropsychiatric

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Interview (MINI 6.0), which has variously been used and validated in northwestern region of Nigeria.<sup>8</sup>

All the 297 were interviewed with the structured questionnaire. The questionnaire collected information on socio-demographic characteristics of the respondents, prevalence of anxiety and depression and risk factors. All participants consented to participate in the study and ethical clearance was obtained from the ethics committee of the teaching hospital.

## Results

All the 297 pregnant women responded to the questions with 100% response rate. Table 1 shows some of the socio-demographic characteristics of the respondents. About two-third of the respondents (62.3%) were of Hausa ethnic group, majority (87.6%) were Muslims, over-whelming majority (94.6%) were married, most (60.6) were educated to tertiary level and about half (51.5%) were not engaged in any form of employment.

On their medical history, 187 out of the 297 respondents (62.9%) were in the third trimester and more than a fourth (28.3%) in their second trimester. Majority (83.5%) of the respondents wanted the pregnancy while few (16.5%) do not. Majority of respondent (88.2%) do not have any co-existing medical condition. Out of the 35 respondents diagnosed with a medical condition 40% (n=14) had hypertension, 37.1% (n=13) had Diabetes mellitus, 14.3% (n=5) had sickle cell disease, and 8.6% (n=3) had HIV. Slightly above a quarter of the respondents (27.6%) experienced hyperemesis during the pregnancy, while the rest (n=215, 72.4%) do not. About 31.6% (n=94) had previous history of miscarriage while the rest (68.4%) have never had miscarriage. Fifty-five (18.5%) had caesarean section in their previous childbirth.

Regarding social support, about half (46.8%) of the respondents rate their partner's support as moderate, about 41.1% as strong, while a few (12.1%) rate it as poor.

The prevalence of anxiety and depression during pregnancy were found to be 23.2% and 26.6% respectively as shown in Tables 2 and 3.

There was no statistically significant association ( $P=0.824$ ) between anxiety and gestational age during pregnancy (Table 4). Other risk factors that were significantly associated with anxiety during pregnancy were co-morbid depression during pregnancy ( $P=0.01$ ), and partner abuse ( $P=0.04$ ), with 37.5% anxious among those abused compared to 21.5% among those not abused. Another important risk factor identified was partner abuse during pregnancy ( $P=0.04$ ). Other socio-demographic and medical factors were not found to be associated with anxiety during pregnancy.

There was no statistically significant association ( $P=0.843$ ) between depression and gestational age of pregnant women (Table 5). Risk factors associated with depression during pregnancy were co-existing medical condition with 45.7% of respondents with coexisting medical found to be depressed compared to 24.0% without co-existing medical condition, and this difference was statistically significant ( $P=0.04$ ).

Other socio-demographic and medical factors were not found to be associated with anxiety during pregnancy.

## Discussion and Conclusions

In this study the prevalence of antenatal anxiety was 23.2%. Different percentages are reported by other authors:<sup>9-20</sup> a study done in Canada showed a prevalence of 25%,<sup>9</sup> a study in Australia

**Table 1. Socio-demographic characteristics of respondents.**

Socio-demographic characteristics	Number	Percentage
<b>Ethnic group</b>		
Hausa	185	62.3
Fulani	49	16.5
Igbo	20	6.7
Yoruba	19	6.4
Others	24	8.1
<b>Religion</b>		
Islam	259	87.6
Christians	38	12.8
<b>Marital status</b>		
Widowed	2	0.7
Married	281	94.6
Divorced	14	4.7
<b>Educational status</b>		
Tertiary	180	60.6
Secondary	93	31.3
Primary	13	4.4
None	11	3.7
<b>Occupation</b>		
Unemployed	153	51.5
Civil servant	97	32.7
Students	28	9.4
Traders	19	6.4

**Table 2. Prevalence of anxiety among respondents.**

Anxiety	Frequency	Percentage (%)
Anxious	69	23.2
Not anxious	228	76.8
Total	297	100

**Table 3. Prevalence of depression among respondents.**

Depression	Frequency	Percentage (%)
Yes	79	26.6
No	218	73.4
Total	297	100

**Table 4. Association between anxiety and gestational age.**

Gestational age	Anxious	Not anxious	Total
First trimester	5 (19.2%)	21 (80.8%)	26
Second trimester	21 (25.0%)	63 (75.0%)	84
Third trimester	43 (23.0%)	144 (77.0%)	187

$\chi^2=0.387$ ,  $df=2$ ,  $P=0.824$ .

**Table 5. Association between depression and gestational age.**

Gestational age	Depressed	Not depressed	Total
First trimester	8 (30.8%)	18 (69.2%)	26
Second trimester	23 (27.4%)	61 (72.6%)	84
Third trimester	48 (25.7%)	139 (74.3%)	187

$\chi^2=0.341$ ,  $df=2$ ,  $P=0.843$ .

showed a prevalence of 21%,<sup>10</sup> another study in China showed a prevalence of 20%.<sup>13</sup> In contrast, a cross-sectional study conducted in Ghana showed a lower prevalence of 9.7%.<sup>7</sup> In another study in Nigeria by Adewuya and colleagues,<sup>20</sup> a higher prevalence of anxiety (39.0%) was observed.

This study shows that antenatal anxiety was significantly associated with co-morbid antenatal depression ( $P < 0.01$ ). Another study done in Australia showed a statistically significant correlation between anxiety in pregnancy and having depression in pregnancy.<sup>10</sup> This was also found in study done in Malaysia to assess the prevalence and associated risk factors of anxiety, stress and depression in pregnancy.<sup>14</sup>

Another important risk factor identified was partner abuse during pregnancy ( $P = 0.04$ ). This was consistent with a study done in Malaysia where partner violence was associated with mental health disorders (anxiety, depression and stress) during pregnancy ( $P < 0.02$ ). A cross-sectional study done in China found disharmony in family relationship and life satisfaction to be significantly related to anxiety during pregnancy.<sup>13</sup>

In this study, the prevalence of depression during pregnancy was 26.6%. In another study in Nigeria the prevalence of antenatal depression was found to be 24.5% by Thompson and colleagues,<sup>5</sup> which this study was consistent with.<sup>5</sup> This study is also consistent with the finding of a study in Finland that showed the prevalence of depression to be 25%.<sup>11</sup> Another study done in the US showed the prevalence of depression among low-income African American pregnant women to be 26%.<sup>17</sup> In contrast many studies have shown a lower or higher prevalence of gestational depression; Brazil 14.2%,<sup>15</sup> 31.1% in North Ethiopia,<sup>16</sup> 12% in India,<sup>18</sup> 39.5% in Tanzania.<sup>19</sup>

This study is consistent with the finding that prevalence of depression in pregnancy is higher in developing countries. As seen in a study conducted to review the epidemiological and clinical aspects of depression during pregnancy in developed and developing countries,<sup>15</sup> which shows the average prevalence of gestational anxiety in developing countries to be 20%.<sup>15</sup> This is also close to the finding of National Institute of Clinical Excellence which found the prevalence of antenatal depression in developing countries to range from 19% to 25%.<sup>6</sup>

This study shows a significant relationship between antenatal depression and coexisting medical condition ( $P = 0.006$ ). This is consistent with the finding of a cross-sectional study done in Nigeria where co-existing medical condition was one of the ten risk factors identified.<sup>6</sup> Another study done in Rio de Janeiro, Brazil, also showed physical illness as an important risk factor for developing antenatal depression.<sup>15</sup> There was also significant relationship between depression and partner abuse. This is an important risk factor especially in developing countries. This is consistent with the study done in Nigeria,<sup>20</sup> where gender-based abuse was a risk factor identified. Other studies conducted globally in developed and developing countries have identified presence of problems with spouse and violence respectively as a risk factor for antenatal depression.

In conclusion our findings demonstrated that pregnant women attending Antenatal clinic in Aminu Kano Teaching Hospital, Kano State, Nigeria, have considerably high prevalence of anxiety and depression during pregnancy of 23.2% and 26.6% respectively. The prevalence of anxiety and depression and their associated factors are consistent with findings in Nigeria and other developing countries.<sup>5,6,16</sup>

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