



Original Article

Prevalence and Sociodemographic Correlates of Anxiety Disorder in Pregnancy
Among Adolescents Attending a Teaching Hospital in Northern Nigeria.

Aveka Audu I¹, Sadiq Sheidu², Anisah Yahya³, Yakubu A Abdulwahab¹, Muhammad Aliyu¹,
Mustapha I Gudaji⁴, Michael A Amedu⁵, Obayi Okwudili⁶

¹Department of Psychiatry, Ahmadu Bello University Teaching Hospital, Zaria. ²Department of Community Medicine, Ahmadu Bello University, Zaria. ³Department of Obstetrics and Gynaecology, Ahmadu Bello University Teaching Hospital, Zaria. ⁴Department of Psychiatry, Aminu Kano Teaching Hospital, Kano. ⁵Department of Psychiatry, Federal University of Health Sciences, Otuokpo. ⁶Department of Psychological Medicine, Ebonyi State University, Abakaliki

Abstract

Background: Adolescent pregnancy is a common occurrence worldwide despite some societal reservations against it. In the predominantly Muslim society of Northern Nigeria, early marriage and the resultant teenage motherhood abound. Very little attention has been paid to the emotional well-being of adolescents in pregnancy, as most studies have concentrated on their physical health. Whether this early motherhood has detrimental effects on the mental health of the adolescents has not been adequately explored. This study aimed to determine the prevalence and socio-demographic correlates of anxiety disorders among adolescents in late pregnancy attending a tertiary hospital in northern Nigeria. **Materials and Methods:** It was a cross-sectional study conducted over a six-week period in which 150 adolescents aged 14 – 19 years in their third trimester of pregnancy, selected via a systematic random sampling technique, participated. All participants completed the socio-demographic, clinical, social support, and GHQ-12 questionnaires via self-report. All 41 participants who screened positive for emotional distress at the cut-off point of 3, and about 10 % of the 109 who screened negative on the GHQ-12, were interviewed with the anxiety module of the Structured Clinical Interview for DSM-IV Disorders (SCID). The data were analysed with SPSS version 20. Descriptive statistics were presented with tables. The chi-square and multiple logistic regression analyses were used to assess associations and identify independent determinants of the variables, respectively, at the 5% level of statistical significance. **Results:** The prevalence of anxiety disorders among the adolescents was 11.3%. The significant socio-demographic factors associated with anxiety disorder were unemployment ($\chi = 7.21$; $p < 0.001$) and marriage type ($\chi = 10.88$; $p < 0.001$). Being a primigravida (OR = 1.32, 95% CI 0.21 – 8.20), having a previous history of stillbirth (OR = 6.06, 95% CI 1.33 – 27.53 and poor social support (OR = 3.15, 95% CI 0.12 – 81.50) were independent determinants of anxiety among the participants. **Conclusion:** Anxiety disorders are prevalent in late pregnancy among adolescents, as found in this study. Routine screening for anxiety disorders during antenatal care using GHQ-12 will help in early detection and management, thereby limiting the potential harmful effects on the women and their newborns.

Correspondence:

Dr. Audu I Aveka,
Department of Psychiatry,
Ahmadu Bello University Teaching
Hospital, Zaria.
P.M.B 06, Zaria, Kaduna state, Nigeria.
E-mail address: audu.veka@gmail.com
Phone no. +234(0)8033492910

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INTRODUCTION

Pregnancy is a major physiological and psychological change in the life of a woman. In the predominantly Muslim society of Northern Nigeria, early marriage and the resultant teenage motherhood abound.¹ Very little attention has been paid to the emotional well-being of adolescents in pregnancy, as most studies have concentrated on their physical health.^{2,3} Anxieties relating to the health of the unborn child as well as the welfare of the newborn are considerable, and some women may suffer psychological disorders at this time.⁴ Even though pregnancy may occur at any time after menarche, there is a societal concern that adolescents who are themselves children may not be psychologically mature to handle the emotional challenges that often accompany pregnancy.^{5,6} Despite this concern, adolescent pregnancy is a common occurrence worldwide. In the predominantly Muslim society of Northern Nigeria, early marriage and the resultant teenage motherhood abound.¹ According to the Nigeria Demographic and Health Survey (NDHS) report 2023 – 2024, approximately 15 % of young ladies aged 15 – 19 years have experienced pregnancy.⁷ This figure is even higher among girls in the rural Northwest and Northeast regions of the country, where early marriage is very common.^{1,6}

Anxiety disorders are a frequent occurrence in pregnancy, with over 50 % of pregnant women experiencing worries and other anxiety symptoms.⁸ The expectant mother, especially the adolescent, often expresses excessive worries and concern over her ability to carry the pregnancy to term, fear of labour and delivery, possibility of harm to herself and/or the baby, and reportedly increases vulnerability to anxiety disorders during this period.⁹ Vulnerability to anxiety disorders is a complex interplay between biological and psychosocial stressors.

Although sex hormones, which are abundant in the pregnant state, are known to mediate some anxiolytic effects, anxiety symptoms may still be precipitated in pregnancy as a result of failure to down-regulate negative emotional responses to stress and fear.¹⁰ Several studies have reported an increasing incidence of pregnancy-related anxiety disorders, especially during the late pregnancy period.^{10,11}

The review of available literature has revealed a gap concerning anxiety disorders among pregnant adolescents. Most of the studies assessing the emotional well-being, including anxiety disorders in pregnancy, were mainly done in adult women aged 20 years and above.^{12,13} The few available studies relating to adolescents in pregnancy have focused on the physical rather than emotional well-being of the expectant mothers.^{2,3} Considering the negative impact this may have on the overall physical and mental well-being of the

expectant mother and her developing foetus makes it imperative to conduct this study to assess the prevalence and correlates of anxiety disorders among adolescents in pregnancy.

MATERIALS AND METHODS

The study was conducted at the antenatal clinics of Ahmadu Bello University Teaching Hospital, Zaria, over a period of six weeks. It was a cross-sectional descriptive study involving 150 pregnant adolescents at 32 weeks' gestation or later. Assent was obtained from those under 18 years, while those aged 18 years and above provided consent. Those who had a previous history of psychiatric illness were excluded. The ethical committee of Ahmadu Bello University Teaching Hospital approved the study.

The calculated sample size of 150 was determined using $n = z^2pq/d^2$, based on a previous study reporting a prevalence of 9.7%.¹¹ Participants were selected using a systematic random sampling technique. The attendance register of women attending the antenatal clinic served as the sampling frame. The first subject was randomly selected from the list using a table of random numbers, and subsequent subjects were selected at the calculated sampling interval until all participants were selected. Participants completed the sociodemographic and clinical questionnaires, as well as the social support and GHQ-12 questionnaires, by self-report. The 41 participants who scored 3 or higher on the GHQ-12, including about 10% of the 109 participants with scores below 3, were interviewed using the SCID by the author. Data were collected over six weeks. Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 20. Descriptive statistics were calculated for the variables. Chi-square tests and p-values were calculated to assess associations. Odds ratios and their 95% confidence intervals were calculated. All statistical significance tests were carried out at the 5% level.

RESULTS

The mean age of the participants was 17.04 years, with an SD of 0.04 years. The majority were married. Most had no Western education, and they were mostly full-time housewives (Table 1). The prevalence of anxiety disorders among the participants was 11.3 %, and the GHQ-12 used for screening had a sensitivity and specificity of 82.4% and 80.0%, respectively (Table 2). The variables found to be associated with anxiety disorders among the participants were marriage type, employment status, gravidity, history of stillbirth and poor social support (Table 3). The independent determinants of anxiety disorders after multiple regression of these associated variables were gravidity,

previous experience of stillbirth and level of social support (Table 4)

Table 1: Sociodemographic Characteristics of the Participants (N=150)

Variable	Frequency	Percentage	Statistics
Age (Years)			
14 – 15	9	6.0	$\chi^2 = 12.50$
16 – 17	70	46.7	
18 – 19	71	47.3	
Mean: 17.04±0.04 years			p = 0.11
Marital Status			
Divorced	5	3.3	$\chi^2 = 2.86$
Married	10	6.7	
Divorced	135	90.0	
Educational Level			
Tertiary	10	6.7	$\chi^2 = 1.28$
Secondary	32	21.3	
Primary	38	25.3	
None	70	46.7	p = 0.12
Employment			
Others	4	2.7	$\chi^2 = 10.88$
Civil servant	11	7.3	
Trading	37	24.7	
Full-time	98	65.3	p < 0.001*
Housewives			

Table 2. Prevalence of Anxiety among the Participants using GHQ-12 and SCID

		SCID		
GHQ-12	Anxiety Disorders	No Disorders	Anxiety Disorders	Total
Positive	14	27		41
Negative	3	106		109
Total	17	133		150

*Sensitivity of GHQ-12 was 82.4 %; Specificity was 80.0 %

DISCUSSION

The mean age of the respondents was 17.04 years, with an SD of 0.04 years. This is lower than the 18.4 years reported by Oladeji et al. among pregnant adolescents in Ibadan, Southwest Nigeria.⁵ More than half of the respondents were under 18 years of age, and about three-quarters had not completed primary education. This finding concurs with that of Adeola et al., who found that early marriage is detrimental to girl-child education³ as further affirmed by Erulkar *et al.*'s study, which found

that two-thirds of young ladies in rural Northwestern Nigeria were married by age 18 years.⁶ Educational attainment of the girl child

Table 3: Socio-demographic variables associated with Anxiety Disorders among the Participants

Variable	Normal N (%)	95% CI	Anxiety disorder N (%)	95% CI	Statistics
Age (years)					
14 – 17	67 (84.8)	74.4 – 90.6	12 (15.2)	10.6 – 19.6	$\chi^2 = 5.86$
17 – 19	64 (90.1)	82.6 – 97.8	7 (9.9)	6.6 – 12.3	
Marital Status					
Single/Divorced	7 (87.5)	79.2 – 92.0	1 (12.5)	9.4 – 15.2	$\chi^2 = 2.86$
Married	126 (88.7)	80.2 – 95.6	16 (11.3)	7.4 – 15.8	
Marriage Type					
Monogamy	54 (91.5)	82.1 – 97.5	5 (8.5)	2.5 – 17.9	$\chi^2 = 10.88$
Polygamy	79 (86.8)	70.7 – 91.5	12 (13.2)	12.5 – 29.3	
Employment Status					
Unemployed	113 (88.3)	70.2 – 95.8	15 (11.7)	10.2 – 19.8	$\chi^2 = 7.21$
Employed	20 (90.9)	87.9 – 102.3	2 (9.1)	6.3 – 10.1	
Western Education					
No	79 (88.8)	79.2 – 94.0	10 (11.2)	6.0 – 20.8	$\chi^2 = 1.28$
Yes	54 (88.5)	79.8 – 89.9	7 (11.5)	10.0 – 30.2	
Gravidity					
Primigravida	90 (87.4)	80.3 – 98.1	13 (12.6)	5.9 – 21.7	$\chi^2 = 24.06$
Multigravida	43 (91.5)	67.8 – 95.6	4 (8.5)	4.4 – 12.2	
Marital satisfaction					
No	88 (92.6)	83.8 – 95.8	7 (7.4)	4.2 – 16.2	$\chi^2 = 8.30$
Yes	45 (81.8)	58.9 – 83.5	10 (18.2)	16.5 – 41.1	
History of Still Birth					
No	119 (93.0)	87.1 – 96.7	9 (7.0)	3.3 – 12.9	$\chi^2 = 32.85$
Yes	14 (63.6)	55.7 – 68.1	8 (36.4)	34.9 – 74.3	
Social Support					
No	112 (93.3)	84.5 – 95.3	8 (6.7)	4.7 – 15.5	$\chi^2 = 17.06$
Yes	21 (70.0)	50.7 – 75.5	9 (30.0)	24.5 – 59.3	

*Significant variables

has a direct influence on the delay in age at first marriage. Lack of functional education has a direct bearing on the employment and economic empowerment of women. About 65% of the respondents were not income earners, as they were full-time housewives. This may reflect the respondents' low educational attainment, as most did not go beyond primary education. Studies have shown that young women in marital relationships are more likely to be unemployed and stay at home as full-time housewives.^{1,6}

The prevalence of anxiety disorders was 11.3 % in this study. This is similar to the 11.4% reported by Bindt et al. among their respondents in Ghana¹⁴, but is far

higher than the 4.2% reported by Magdy et al. among pregnant adolescents in Saudi Arabia.^[15] This difference may be due to differences in the subjects' ages and parities.

Table 4: Logistic Regression Analysis: Independent determinants of anxiety disorders

Variable	Odds Ratio	95% CI OR	p-value
Marriage type			
Polygamy	2.46	1.02 – 19.00	0.65
Monogamy	1		
Employment			
Yes	4.06	1.33 – 10.13	0.061
No	1		
Gravidity			
Primigravida	1.32	0.21 – 8.20	0.030*
Multigravida (ref)	1		
Marital satisfaction			
Yes	2.36	1.54 – 6.56	0.075
No	1		
Still Birth			
Yes	6.06	1.33 – 27.53	0.020*
No (ref)	1		
Social support			
Yes	3.15	0.12 – 8.15	0.001*
No (ref)	1		

*Significant variables.

For instance, adolescents in this study were younger, with a mean age of 17 years, and three-quarters were primigravida, compared with participants in the study by Magdy *et al.*, who were slightly more mature, with a mean age of 19 years, and most were multigravida.¹⁵ The rate was also higher than the 10.7% reported by Audu et al. among pregnant women attending a primary health care clinic.¹⁶ Unlike in this study, the respondents in Audu et al.'s study were adult women in pregnancy. The higher rate of anxiety disorders among the respondents in this study may be because they were young and most of them were pregnant for the first time, and were more likely to be preoccupied with excessive fear about their capacity to cope with the demands of pregnancy and delivery.¹⁶ There is empirical evidence from studies that young people carry the burden of negotiating the transition from childhood to adulthood, and carrying the additional burden to cope with multiple stressors associated with pregnancy may predispose the vulnerable ones to emotional disorders.^{17,18}

The GHQ-12, used as a screening instrument for anxiety disorders in this study, identified 14 out of 17 cases, representing a sensitivity of 82.4%. It also showed specificity of 80.0%, making it a reliable, simple tool that can be used in our busy clinic to identify those at risk of anxiety disorders for early intervention. This study showed that adolescents undergoing pregnancy for the first time in their lives are more prone to developing

anxiety disorders than those who have carried pregnancies—in the past. Primiparous adolescents are more at risk than their multiparous counterparts for anxiety disorders, with an odds ratio of 1.32 (95% CI 0.21 – 8.20). This finding supports the earlier report by Audu et al in a study on generalised anxiety disorder among women in late pregnancy.¹⁶ This may not be unconnected with excessive worries over the likely outcome of the pregnancy. In our routine clinical services at antenatal care, the emotional needs of the women are hardly inquired into to identify those at risk, and the fear and worries may persist without any assurance given to boost the women's confidence; this concern may become elevated to a point of causing emotional distress, including anxiety disorders.

There is a significant association between a history of stillbirth and anxiety disorder among the respondents in this study ($\chi^2=32.85$, $P<0.001$). The odds of developing an anxiety disorder after experiencing a stillbirth are six times higher than those without such a history. This is similar to the finding of Akinsulore et al, who reported a significant association between anxiety disorder and a history of previous abortion.⁷ The fear of a possible repeat of the sad experience may be responsible for this association.

The perceived social support is associated with anxiety disorders in this study. The level of social support from significant others, such as the husband and in-laws, helps build confidence and soothe the expectant mother's emotional needs. Where the environment is hostile without social support being given to the adolescent by way of encouragement, and overlooking the areas of deficiency, can precipitate a state of fear and excessive worries. Studies have reported that the level of perceived social support from family members has a significant association with the occurrence of antenatal anxiety among pregnant adolescents.^{19,20}

CONCLUSION

This study showed the need for a holistic evaluation of women in antenatal care, especially the younger ones. Specific enquiries about the emotional health of the antenatal attendees, with particular focus on primigravida, previous history of adverse pregnancy outcomes and poor social support, should alert the attending health personnel to request a thorough psychological evaluation of such women. This may help in the prompt detection and treatment of those with emotional disorders, including anxiety disorders.

Conflict of Interest: None

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