■ **Original Research Article**

Prevalence and Risk Factors for Antepartum Depression

Hafsat Abdullahi Maikudi [*1], Rabi'at Muhammad Aliyu[2], Aishatu Abubakar-Abdullateef[3],
Rahmatu Yunusa Yusuf[1], Shafa'atu Ismail Sada[2]

1.Department of Obstetrics and Gynaecology, Ahmadu Bello University Teaching Hospital, Zaria; 2. Department of Obstetrics and Gynaecology, Ahmadu Bello University/ Ahmadu Bello University Teaching Hospital, Zaria; 3. Department of Psychiatry, College of Medical Sciences, Ahmadu Bello University, Zaria.

ABSTRACT

Background: Pregnancy increases the susceptibility of women to mental health disorders, especially depression. Depression is more prevalent in low and middle-income countries and is associated with adverse maternal and perinatal morbidity. However, screening for depression is not routinely offered to pregnant women in this setting. **Aim***:* To determine the prevalence of antepartum depression (APD); describe the characteristics of the depressed women and identify the risk factors for antepartum depression among women attending the antenatal clinic of the study hospital. **Methodology***:* A cross-sectional study where 250 women attending antenatal clinics were recruited. An interviewer-administered questionnaire was used to obtain relevant information on socio-demographic characteristics and obstetric history. The Edinburgh Postnatal Depression Scale (EPDS) was used to screen for depression and a score of 13 and above was considered positive for depression. Data was analysed using SPSS version 28. P value <0.05 was considered significant. **Results:** The prevalence of antepartum depression was 6.4% (16/250). The majority of women with antepartum depression were aged ≤35 years (15/16), of the Islamic faith (14/16); had tertiary education (10/16); had low income (12/16) but had spouses with higher income (12/16) and reported no history of marital conflict (10/16). These women were predominantly parous (15/16); in the third trimester (11/16) and had no bad obstetric history (14/16). Tribe and gestational age were associated with APD (p<0.05). Younger women had doubled odds of having APD (OR 2.3, CI 0.29-17.9). Educational level, income, parity, presence of marital conflict and bad obstetric history were not associated with the risk of having APD. **Conclusion***:* APD is common and occurs across all educational levels, socio-economic and obstetric statuses. Gestational age was associated with APD. Screening for APD should be integrated among antenatal packages that promote maternal and perinatal health, especially in the third trimester.

Keywords: Antepartum Depression, Prevalence, Risk Factors, Maternal, Perinatal Morbidity.

*Correspondence

Hafsat Abdullahi Maikudi, Department of Obstetrics and Gynaecology, Ahmadu Bello University Teaching Hospital, Zaria. hafsahmaikudi@gmail.com

INTRODUCTION

The promotion of mental health has been recognized as one of the needed means of improving the overall health and well-being of people worldwide.[1] Depression is among the leading causes of non-communicable diseases worldwide with 1 in 5 lives lost to disability annually, rendering depression a disease of public health importance.[1] Depression is characterized by the core symptoms of having a depressive mood at most times of the day with associated loss of interest in previously pleasurable activities. Other features that characterize depression include feelings of worthlessness, significant loss of weight, increase or decrease in appetite, insomnia or hypersomnia, lack of energy and sometimes associated depressive hallucinations or suicidal ideations.[2,3]

Depression is twice as common in women compared to men with increasing prevalence in the reproductive age group and a significant proportion of women usually have features of depression manifesting for the first time during pregnancy.[4] The prevalence of Antepartum depression (APD) is on the increase worldwide and this has been connected to the increasing recognition of this clinical entity.[5] The prevalence of Antepartum depression is higher in low and middle-income countries compared to their higher-income counterparts.[5]

A previous history of psychosocial disorder may herald the occurrence of APD. However, several factors increase the likelihood of developing depressive disorder in pregnancy which include but are not limited to low socio-economic status, bad obstetric history, young maternal age or domestic violence.[6] Antepartum depression has been linked to poor maternal and perinatal outcomes with associated risk of postpartum depression, pre-eclampsia, premature birth and poor child growth.[7]

Nigeria is among the countries with leading maternal and perinatal morbidity and mortality.[8] It has been observed that most countries especially low and middle-income countries are unlikely to recognize mental health as an important aspect of well-being, thus, the acceptance of depression and other mental health issues as problems that need to be addressed is not the case in these settings.

Mental health has an impact in achieving the sustainable development goals.[1] For this reason, the WHO initiated the concept of universal health coverage for mental health, intending to improve access to quality and affordable care for mental health conditions in priority countries. Pregnant women are surrounded by risk factors that may increase their susceptibility to developing any of the mental health disorders of which depression is most common. Many clinicians seldom screen for APD during antenatal visits, especially in less developed countries where curative rather than preventive measures of disease management is prevalent. Mental health is poorly integrated into promotional health services and there are none or few policies that address this aspect of health in many resource-poor settings. This undermines the attainment of Sustainable Development Goal 3. Thus, this study aimed to determine the prevalence of antepartum depression; describe the characteristics of depressed women and identify the risk factors for antepartum depression among women attending the antenatal clinic of Ahmadu Bello University Teaching Hospital, Zaria

METHODOLOGY

It was a descriptive cross-sectional study conducted among antenatal clinic attendees within the study period (February-May, 2022). Pregnant women from six (6) weeks to 42 weeks of gestation were conveniently sampled till sample size was attained. Pregnant women in labour and those who did not consent were excluded. The following formula[9] was used to determine the sample size; $n = Z^2pq/ d^2$ where: n= desired sample size; Z = standard normal deviation usually set at 1.96 which corresponds to the 95% confidence interval; p= prevalence of antepartum depression from Bauchi study[10] (0.184); q= 1-p (1-0.184) = 0.816 and d= degree of accuracy desired set at 0.05. Allowing for a 10% non-response rate, a sample size of about 250 was obtained.

Using the convenience sampling technique, a structured questionnaire was administered by trained research assistants to eligible participants after obtaining verbal consent. Strict confidentiality was maintained and all participants received their due antenatal care. The structured questionnaire was organized into three (3) sections: a socio-demographic and reproductive profile section, an obstetric history section and a section on the Edinburgh Postnatal Depression Scale (EPDS). The questions under EPDS were translated into the predominant native language (Hausa) which was the commonest language understood by attendees. The scale was used to screen for depression among pregnant women. The scale had a total of 10 questions. The cut-off points for depression used in this study was 13 or above.

The data was analyzed using SPSS version 28. Frequency tables were generated for the socio-demographic and reproductive variables. The Chi-square was used to assess the association between the variables and the development of antepartum depression. The level of significance for this study was set at ≤ 0.05.

RESULTS

A total of 250 questionnaires were administered and all were responded to appropriately giving a response rate of 100%. The majority (86.1%) of the respondents were between the ages of 25 to 44 years with a mean age of 28.4 years ± 3 years. Hausa ethnicity and Islamic faith were the predominant tribe and religion of the respondents seen in 64% and 77.6% respectively. All the respondents were married and most had a tertiary level of education (68.4%). These are shown in Table 1.

Table 1: Socio-demographic Characteristics of the Women in a Study of Prevalence and Risk Factors for Antepartum Depression Among Women Attending Antenatal Clinic

Characteristic	Frequency (%) n=250
Age (years)	
20-24	1(0.9)
25-29	16(13.9)
30-34	30(26.1)
35-39	35(30.4)
40-44	18(15.7)
45-49	8(7.0)
50-54	7(6.2)
Tribe	
Hausa	160(64.0)
Yoruba	25(10.0)
Igbo	8 (3.2)
Others	57(22.8)
Religion	
Islam	194(77.6)
Christianity	56(22.4)
Woman's education	
Primary	8(3.2)
Secondary	71(28.4)
Tertiary	171(68.4)
Woman's income (Naira per month)	
≤10,000	170(67.6)
>10,000	80(32.4)
Spouse's income (Naira per month)	
≤10,000	64(25.6)
>10,000	186(74.4)

The majority of the respondents were multiparous (73.2%) and 49.2% had 1-3 living children. Most of the index pregnancies were planned (72%) and the women were in their third trimester (68.8%). These are highlighted in Table 2.

The majority of women with antepartum depression were aged ≤35 years (15/16), of the Islamic faith (14/16); had tertiary education (10/16); had low income (12/16) but had spouses with higher income (12/16) and reported no history of marital conflict (10/16).

Table 2: Reproductive Profile of Women in a Study of Prevalence and Risk Factors for Antepartum Depression Among Women Attending Antenatal Clinic

Characteristic	Frequency (%)
Parity	
Primigravida	67(26.8)
Multipara	183(73.2)
Number of miscarriages	
None	158(63.2)
1-3	89(35.6)
4-6	3(1.2)
Number of living children	
None	98(39.2)
1-3	123(49.2)
4-6	20(8.0)
7-9	9(3.6)
Pregnancy intention	
Intended	180(72)
Unintended	70(28)
Trimester	
First	9(3.6)
Second	69(27.6)
Third	172(68.8)

The prevalence of antepartum depression was found to be 6.4% as shown in Table 3.

Table 3: Prevalence of Antepartum Depression, in a Study of Prevalence and Risk Factors for Antepartum Depression Among Women Attending Antenatal Clinic

EPDS score	Frequency (%)
< 13	234(93.6)
≥ 13	16(6.4)
Total	250(100.0)

These women were predominantly parous (15/16); in the third trimester (11/16) and had no bad obstetric history (14/16). These are shown in Tables 4 and 5.

Only tribe was found to be associated with antepartum depression (p=0.0006). Though women aged ≤ 35 years and of Islamic faith had double odds of having antepartum depression, the associations were not significant. Lesser education and income of the woman slightly increased the odds of having antepartum depression

Table 4: Association Between Sociodemographic Characteristics and Depression, In A Study of Prevalence and Risk Factors of Antepartum Depression Among Women Attending Antenatal Clinic.

Characteristic	EPDS Score		Total (%)	Odds ratio (CI)	p-value
	≥13 (%)	< 13(%)			
Age (years)					
≤35	15(6.0)	203(81.2)	218(87.2)	2.3 (0.29-17.96)	0.430
>35	1(0.4)	31(12.4)	32(12.8)		
Tribe					
Minority tribe[a]	16(6.4)	44(17.6)	60(24.0)	141(8.32-2399.64)	0.0006
Majority tribe[b]	0(0)	190(3.2)	190(76.0)		
Religion					
Islam	14(5.6)	180(72.0)	194(77.6)	2.1 (0.46-9.53)	0.336
Christianity	2(0.8)	54(21.6)	56(22.4)		
Woman's level of education					
Less than tertiary	6(2.4)	73(29.2)	79(31.6)	1.32 (0.46-3.78)	0.600
Tertiary	10(4.0)	161(64.4)	171(68.4)		
Woman's income (Naira per month)					
≤10,000	12(4.8)	157(62.8)	170(67.6)	1.47 (0.46-4.71)	0.515
>10,000	4(1.6)	77(30.8)	80(32.4)		
Spouse's income (Naira per month)					
≤10,000	4(1.6)	60(24.0)	64(25.6)	0.967 (0.30-3.11)	0.954
>10,000	12(4.8)	174(69.6)	186 (74.4)		
Marital conflict					
Yes	6(2.4)	95(38.5)	101(40.9)	0.86(0.30-2.44)	0.776
No	10(4.1)	136(55.0)	146(59.1)		

EPDS- Edinburgh postnatal depression scale; [a] –tribes other than Hausa, Igbo and Yoruba; [b] –tribes of Hausa, Igbo and Yoruba

Table 5: Association Between Obstetric Characteristics and Antepartum Depression, in a Study of Prevalence and Risk Factors of Antepartum Depression Among Women Attending Antenatal Clinic.

Characteristic	EPDS Score		Total (%)	Odds ratio (CI)	p-value
	≥13 (%)	< 13(%)			
Trimester					
Third	11(4.4)	161(64.4)	172(68.8)	10.0(3.06-32.91)	0.0001
Below third	5 (2.0)	73(29.2)	78(31.2)		
Parity					
Nulliparous	1(0.4)	27(10.8)	28(11.2)	0.51(0.06-4.04)	0.523
Parous	15(6.0)	207(82.8)	222(88.8)		
Bad Obstetric history					
Yes	2(0.8)	49(19.8)	51(20.6)	0.46(0.10-2.08)	0.317
No	14(5.7)	182(73.7)	196(79.4)		

but the associations were also not significant (p>0.05). These are shown in Table 4.

Gestational age was associated with antepartum depression (p=0.0001) and women in the third trimester had 10-fold odds of being depressed (OR 10.0; 3.06-32.91). Parity and the presence of a bad obstetric history (BOH) which was defined as the history of three or more consecutive miscarriages, a stillbirth or a neonatal death, were not associated with antepartum depression as shown in Table 5

DISCUSSION

Maternal mental health has in recent times gained traction as an integral part of the discussion surrounding maternal health mortality, morbidity and even neonatal outcomes. While more attention is often paid to mental health well-being after delivery, antenatal mental health is also crucial as it may lead to adverse consequences not only for the mother but for the growing fetus and family[10,11] and even be a precursor to postpartum depression[12]. This study allowed us to investigate the prevalence and correlates of antepartum depression using a cross-sectional design among pregnant women in a tertiary hospital in Zaria, Nigeria.

The prevalence of antepartum depression in this study was found to be 6.4%, lower than the range of antepartum depression reported in other studies in Nigeria and other parts of sub-Saharan Africa[13,14] but close to rates found by Abbey et al [15] and by Izuka et al in Enugu in women across the three trimesters of gestation[16]. The difference in rates found in the studies could be attributed to varying methods and materials employed during the studies, including the gestational age at which symptoms were assessed and instruments used in identification of symptoms[10]. In their study, Adeoye et al[17], employed a diagnostic tool in a prospective study in women in the third trimester while Thompson et al[18] assessed women in a multicenter study across all trimesters. This variation is replicated in other studies across the African continent resulting in a wide range of reported rates of antepartum depression, thus eliciting debates on which instruments are best suited for such studies and also the likelihood of interference by other confounding sociocultural variables.

Though not significantly associated with antepartum depression, respondents in our study who were less than 35 years of age (94%) had a higher representation among those who screened positive as were those with a low income (75%), parous (94%), and those in the third trimester (69%), all of which are socio-demographic variables that have been reported in other studies to be associated with antepartum depression[19]. Low income and parity may exert their stressor effects through worries and anxieties about the health of the mother and additional costs that are likely to be incurred through the period of conception, delivery and arrival of the newborn, putting additional strain on the family's finances in a country where health expenses are still mainly paid for out-of-pocket[13].

Similar to the findings of Okagbue et al,[19] this study revealed that women in the third trimester constituted a majority of those who reported symptoms of antepartum depression possibly emanating from advancement in pregnancy, the restrictions and changes in body shape/size that accompany it, fear of childbirth and uncertainties surrounding pregnancy outcome. This has attendant implications when the problems of utilization of antenatal care in the region are considered. Studies in the region show poor utilization of antenatal services among women who often prefer traditional birth attendants leading to few women booking their pregnancies[20], underscoring the fact that in the general population, a considerable proportion of women miss out on the benefits that structured antenatal care offers including screening for psychological disorders.

Interestingly, the analysis showed tribe as a significant factor associated with APD. Tribal identity is heavily entrenched in the fabric of communal consciousness in the country and maybe a source of perceived stress through a variety of ways[21]. Individuals not of the major tribe in the region may be far away from where they perceive to be home and by extension family/social support, or may engage in traditional practices that have an effect on mental health. The northern Nigerian region where this study was carried out has also suffered from incidents relating to insecurity, all of the above having the propensity to activate the hypothalamic-pituitary-adrenal (HPA) axis and sympathetic nervous systems leading to the release of stress hormones like cortisol and adrenaline which when prolonged lead to maladaptive changes that may result in depressive and anxiety disorders[22].

Our study has some limitations. The Edinburgh Postnatal Depression scale is a screening tool and not a diagnostic tool making it necessary to establish links between obstetric and psychiatric teams for case confirmation, referral and management. Also, our study was cross-sectional in design and only determined associations as it was not adequately powered to assess for causal factors. In addition, the convenient sampling method adopted has an inbuilt researcher bias, unequal representativeness and generalization is limited. Finally, this was an institutional study that assessed only those who sought antenatal care. It did not include non-seekers with different sociodemographic features and findings cannot be extended to the general population.

CONCLUSION

In conclusion, findings from this study show that depression is prevalent in the antepartum period among women in the region. Maternal and infant health policies and protocols in the region should integrate maternal mental health into antenatal care services. There is a need for randomized control studies and further research into predictive causal models.

REFERENCE

1. World Health Organization. (2019). The WHO special initiative for mental health (2019-2023): universal health coverage for mental health. World Health Organization. https://apps.who.int/iris/handle/10665/310981. License: CC BY-NC-SA 3.0 IGO.
2. Fried EI. The 52 symptoms of major depression: Lack of content overlap among seven common depression scales. J Affect Disord. 2017 Jan; 208:191–7.
3. Ridley M, Rao G, Schilbach F, Patel V. Poverty, depression, and anxiety: Causal evidence and mechanisms. Science (1979). 2020 Dec 11;370(6522).
4. Jeong HG, Lim JS, Lee MS, Kim SH, Jung IK, Joe SH. The association of psychosocial factors and obstetric history with depression in pregnant women: Focus on the role of emotional support. General Hospital Psychiatry. 2013;35(4):354–8.
5. Gelaye B, Rondon MB, Araya R, Williams MA. Epidemiology of maternal depression, risk factors, and child outcomes in low-income and middle-income countries. Lancet Psychiatry. 2016;3(10):973–82.
6. Babu GR, Murthy GVS, Singh N, Nath A, Rathnaiah M, Saldanha N, et al. Sociodemographic and Medical Risk Factors Associated with Antepartum Depression. Front Public Health. 2018;6.
7. Schaffir J. Consequences of antepartum depression. Clinical Obstetrics and Gynecology. 2018;61(3):533–43.
8. Olonade O, Olawande TI, Alabi OJ, Imhonopi D. Maternal Mortality and Maternal Health Care in Nigeria: Implications for Socio-Economic Development. Open Access Maced J Med Sci. 2019 Mar 16;7(5):849–55.
9. Bolarinwa O. Sample size estimation for health and social science researchers: The principles and considerations for different study designs. Nigerian Postgraduate Medical Journal. 2020;27(2):67.
10. Fekadu Dadi A, Miller ER, Mwanri L. Antenatal depression and its association with adverse birth outcomes in low and middle-income countries: A systematic review and meta-analysis. PLoS One. 2020 Jan 10;15(1):e0227323.
11. Gyang BA, Musa U, Michael AT, Davou GM, Taiwo OJ. Effect of Antenatal Depression on Fetal Growth Outcomes at the Jos University Teaching Hospital Jos, Plateau State, Nigeria. Open J Psychiatr. 2022;12(04):336–44.
12. Okunola TO, Awoleke JO, Olofinbiyi B, Rosiji B, Olubiyi AO, Omoya S. Predictors of postpartum depression among an obstetric population in South-Western Nigeria. J Reprod Infant Psychol. 2021;
13. Sulyman D, Aminu M, Ayanda K, Dattijo L. Antepartum depression among women attending antenatal clinic in a Nigerian teaching hospital. Nigerian Journal of Medicine. 2021;30(5):556.
14. Okocha AN, Abbey M, Amadi SC, Ononuju CN, Adewale O. Family Support as a Determinant of Major Depression among Pregnant Women in a Low-resource Setting. AsianResJGynaecolObst. 2023;6(1):121–32.
15. Abbey M, Kasso T. Depression in pregnancy and the puerperium in a tertiary health facility in Nigeria. A neglected area of practice. Nigerian Journal of Medicine. 2017;26(2):146.
16. Izuka E, Iyidobu T, Obiora-Izuka C, Enebe J, Onyeabochukwu A, Nkwo P, et al. Evaluation of Anxiety and Depression among Pregnant Women in Enugu, Nigeria. Niger J Clin Pract. 2023 Sep;26(9):1368–76.
17. Adeoye IA, Sogbesan A, Esan O. Prevalence, associated factors and perinatal outcomes of antepartum depression in Ibadan Nigeria. BMC Pregnancy Childbirth. 2022;22(1).
18. Thompson O, Ajayi I. Prevalence of Antenatal Depression and Associated Risk Factors among Pregnant Women Attending Antenatal Clinics in Abeokuta North Local Government Area, Nigeria. Depress Res Treat. 2016; 2016:1–15.
19. Okagbue HI, Adamu PI, Bishop SA, Oguntunde PE, Opanuga AA, Akhmetshin EM. Systematic Review of Prevalence of Antepartum Depression during the Trimesters of Pregnancy. Open Access Maced J Med Sci. 2019 May 15;7(9):1555–60.
20. Abdulhamid Z, Lawal U, Tahir A, Harande M, Usman H, Nuhu A. Perceptions of Hausa and Fulani Tribes on Traditional Birth Attendants in Zaria Local Government Area, Kaduna State, Nigeria. Journal of Complementary and Alternative Medical Research. 2017 Jan 10;2(2):1–7.
21. Nweke KO, Anazonwu CO, Ezendu AN, Umeaku NNkemdilim, Oluwafemi O, Ugboaku PU, et al. Influence of Mother's Marital Status and Ethnicity on Perceived Depressive Symptoms. NigPsyResearch. 2022;7(2):99–109.
22. Dean J, Keshavan M. The neurobiology of depression: An integrated view. Asian J Psychiatr. 2017 Jun; 27:101–11.