Major depression in the antenatal period in the core Niger Delta area of Nigeria: a neglected area of practice

ABSTRACT

Background: Major antepartum depression is associated with multisystemic symptoms, functional impairment, obstetric complications and even maternal mortality secondary to suicide if not promptly treated.

Aims: To determine the prevalence of Antepartum depression among pregnant women attending antenatal in the Rivers State University Teaching Hospital to promptly identify and manage them, thereby averting its negative effects on the unborn child, mother and the family.

Methodology: This was a cross sectional study carried out in the antenatal clinic of the Rivers State University Teaching Hospital over a period of four months. A total of 163 antenatal patients who met the inclusion criteria were selected using the systematic random sampling method. Data on socio-demographic, obstetrics and medical information were obtained with semi-structured interviewer-administered questionnaire. Screening for depression was done using the Edinburgh Postnatal Depression Scale (EPDS). A score of 10 and above on EPDS was considered depression. Data were analysed with SPSS version 23 and a p-value of less than 0.05 was considered significant.

Results: The mean age of the participants was 29.1±4.53 years with an age range of 20-40 years. The highest proportion (43.6%) of the participants were 26-30 years. The majority of the participants were married (87.1%), from monogamous families (73.6%) and had tertiary level of education (67.5%), majority were within the high social class (56.4%), and did not experience intimate partner violence (92.6%). The prevalence of depression was 44.8%.

Conclusion: The prevalence of antenatal depression in Rivers State University Teaching Hospital was high underscoring the urgent need for introduction of universal screening for the disease in each trimester.

Keywords: Major Depression, antenatal period, Niger Delta, Nigeria, Neglected Atrea, Practice, Antenatal Depression.

1. INTRODUCTION

Depression is a mental health problem prevalent worldwide in developed and developing countries. It is described as the persistent presence for at least two weeks of a sad mood, loss of interest in activities usually experienced as pleasurable, reduced energy (typical symptoms) and at least, two of the other common symptoms which include reduced concentration, reduced self-confidence, ideas of guilt, hopelessness, a bleak and pessimistic view of the future, ideas of self-harm or suicide, disturbed sleep, and diminished appetite.[1,2] The symptoms cause impairment in social and occupational functioning and are not due to physiological effects of a substance or a general medical condition.[3] Women are generally known to be more vulnerable to common mental health problems like depression than men.[4] It is classified by specific symptoms into major depressive disorders, dysthymia and depressive disorders not otherwise specified. [2,3]

Major depressive disorders rank among the top five leading contributors to the global disease burden.[5] Despite being rated the third disabling condition globally by the World Health Organization, it still remains inconspicuous as a component of reproductive healthcare in many countries, including low- and middle-income countries (LMICs). [4,6] In Nigeria, antepartum depression is still largely undiagnosed and consequently untreated. [7] Globally, the lifetime prevalence of depression is put at 17%, but it often goes unrecognized, untreated or underestimated.[8] It affects over 120 million people worldwide. [3] The high female-to-male sex ratio in the prevalence of depression, especially during the reproductive years, is one of the most recurrent findings in epidemiology. [4,9,10] Women have a lifetime risk of the disease of about 1 in 8; its incidence increases with pregnancy, especially in low- and middle-income countries. [7,11,12]

Antenatal depression affects approximately 10% of women during pregnancy and the rates among low-income pregnant women may be as high as 27.6%. [13,14] It has been shown that depression is quite common in primary care settings. [15] In sub-Saharan Africa, fairly high depression rates among pregnant women have been recorded in different studies. [7,16,17] Specifically in Nigeria, a study in South-West Nigeria revealed a rate of 24.5%.15 However a study conducted in another tertiary institution but within the same Rivers State in Southern Nigeria where the present study was conducted gave the prevalence of antenatal depression as 9.57%. [18] Depression tends to be masked in Africans by somatic symptoms, which may explain why it is underdiagnosed or under recognized. [19]

Major depression is a recognised cause of maternal mortality secondary to suicide; it also increases the risk of cardiovascular and other diseases. It is associated with many somatic symptoms: headache, nausea, vomiting, gastrointestinal problems, and sexual dysfunction. Other complications of depression are inadequate weight gain, under-utilization of prenatal care, increased substance use and alcohol consumption, inadequate nutrition, lower infant birth weight, decreased Apgar scores, smaller head circumference, development impairment, prematurity and small for gestational age (SGA) infants. [20,21] Untreated depression can lead to functional impairment and increased risk of pregnancy induced hypertension (PIH), probably due to altered excretion of vasoactive hormones, preeclampsia, and Suicide. [22,23] It is an important risk of developing postpartum depression. [19]

Therefore, an urgent need to increase clinician awareness and to encourage routine screening for antepartum depression during antenatal visits as early identification and treatment of the disease may improve pregnancy outcomes, including prevention of

postnatal depression. [24] The early detection of depression can be enhanced by screening people for the disorder when they attend a hospital for other reasons. [25] The family practice clinic provides an excellent opportunity for this, as most patients present first at the clinic for all types of illnesses.

This study thus aimed to determine the prevalence of antepartum depression and when concluded may help establish the basis for routine screening for the disease in pregnancy so that prompt measures can be taken for positive cases and thereby avert its negative effects on the unborn child, mother and family.

2. MATERIAL AND METHODS

2.1 Study Area

This study was conducted in the antenatal clinic of Rivers State University Teaching Hospital (RSUTH) in Port Harcourt, Rivers State, Nigeria. Port Harcourt, the capital of Rivers State is an industrial and cosmopolitan city. The state is located in the tropical rainforest belt in the South- South geo-political zone of Nigeria and has a population of 7,034,973.[26]

RSUTH is a Rivers State Government owned tertiary healthcare facility with a 350 bed capacity that renders services in various medical disciplines such as Family Medicine, Obstetrics and Gynaecology, Paediatrics, Surgery, Internal medicine, Radiology, Otolaryngology, Ophthalmology, Dentistry. It is a referral centre for most peripheral hospitals and healthcare centres in the state. There are a minimum of thirty pregnant women daily at the antenatal clinic. The Obstetrics and gynaecology department, part of which is the Antenatal clinic, is fully accredited for training and manned by several consultants, senior registrars, registrars, house officers and trained nurses/midwives all working together to provide primary, secondary and tertiary maternal healthcare services.

2.2 Study Design/Population:

The study was of a cross sectional design carried out over 4 months. Pregnant women with no psychiatric illness who consented to participate in the study were recruited.

2.3 Inclusion/Exclusion Criteria:

Pregnancy was confirmed with an ultrasound scan. All pregnant women attending antenatal clinics in the RSUTH were included in the study. Pregnant women who were too ill to participate and those with other chronic diseases such as Diabetes Mellitus, Hypertension, and Human immunodeficiency virus (HIV) or other viral infections were excluded from the study.

2.4 Sample Size Calculation

The formular below was used to calculate the minimum sample size for this study.[27]

$n = Z^2 (p) (q) / d^2$

Where;

n=minimum sample size

z=the normal standard deviation usually set at 1.96 corresponding to the 95% confidence level.

The prevalence of antepartum depression in Nigeria by Esimai was 10.8% .[28]

P = prevalence = 10.8% = 0.108

q= 1-p = 1.0-0.108= 0.892

d=degree of accuracy desired; usually set at 0.05.

Substituting into the equation;

$n = (1.96)^2 (0.108) (0.892) / (0.05)^2$

= 148

10% of the sample size was added to take care of non-response. 148+10% of 148= 148+14.8 =162.8**.** A total of 163 subjects were recruited for the study.

2.5 Sampling Method

The eligible participants were identified in the antenatal clinic and counselled and consent was obtained for their participation in the study. Then, the systematic random sampling method was employed to select the study participants. It entails calculating the sampling interval (Sample frame/ Sample size). The sample frame is the population of patients that met the study inclusion criteria. At least 30 pregnant women attended the antenatal clinic on 5 working days (Monday- Friday). Three months were projected for data collection. There were 12 weeks in 3 months. One month was projected for data analysis, writing and printing.

The sample size has been calculated to be 163. Therefore;

$$\text{Sampling interval} = \frac{30 \times 5 \times 12}{163}$$

$$= 11.0$$

The first subject was chosen by simple random selection. This was done by blindly picking one out of eleven pieces of paper numbered 1 to 11. The individual represented the index subject for the study. Every eleventh eligible antenatal patient presenting to the antenatal

clinic was recruited until the sample size was achieved. About three persons per day were recruited. The folder of each selected patient was tagged to avoid double selection.

2.6 Study Questionnaire

A five parts semi-structured 48-item questionnaire incorporating validated tools was administered to all

the study subjects by the author and the research assistants. It was divided as follows: Section A – Socio-demographic and obstetric data, Section B - Edinburgh postnatal depression scale, Section C - Medical history and Section D - Obstetric findings. Respondents were placed into three income classes based on the definition of the monthly earning of the Nigerian middle class to be N75, 000.00 to N 100,000.00. [29] Consequently, those who earned below and above the lower and upper ranges were placed into low income and high-income groups respectively

2.7 Diagnosis of depression

It is clinical. Beck Depression Inventory (BDI), Hamilton Depression Inventory (HDI), Prime MD Brief Patient Questionnaire, Patient Health Questionnaire – 9, the Edinburgh Postnatal Depression Scale (EPDS), Geriatric Depression Scale and the Epidemiological Studies Depression Scale are some of the available tools for screening for depression. They all help to elicit some depressive symptoms. Those with positive symptoms could be further evaluated with the ICD-10 or DSM-IV for definitive diagnosis.

Most of screening instruments like EPDS were designed in line with the diagnostic criteria of depression. Compared to lengthy interviews they are quick and easy to use in the field.[30] Edinburgh postnatal depression scale [EPDS] is a validated questionnaire used widely to screen for antenatal and postnatal depression.[30] It has been found to have a sensitivity of 0.867, specificity of 0.915, positive predictive value of 0.684 and negative predictive value of 0.970.[31] The scale's reliability is satisfactory with a Cronbach alpha coefficient of 0.82. It consists of a 10 item short questions in which women are requested to rate how they felt in the previous days. Each question has four possible responses that are scored 0-3; hence the possible range of 0-3. Questions 1, 2 and 4 are scored 0,1,2, or 3 with the box at the top scored 0 and that at the bottom scored 3. Questions 3, 5-10 are reversed scored with the box at the top scoring 3 and the box at the bottom scored 0. It is completed in about 5 minutes. Subjects were grouped as depressed and non-depressed if they scored ≥10 (10 and above) or < 10 (below 10) respectively on the EPDS.

EPDS is the most validated and widely used screening tool for depression during the perinatal period because it does not include questions about somatic complaints, fatigue and changes in appetite, as these complaints are common during pregnancy and would therefore not help to distinguish depressed from non-depressed women in pregnancy. Therefore, somatic complaints may lead to diagnosing of depression during the perinatal period.

However, it has also been argued that not considering somatic complaints may interfere with the measure of the severity of the illness. [42]

2.8 Data Analysis

Data were entered and analysed using the Statistical Package for Social Sciences (SPSS) version 23 statistical software. The first part of the analysis was a descriptive analysis of all the variables in the study involving the use of frequency tables and bar charts. Descriptive statistics were run using numbers and/or percentages.

3. RESULTS AND DISCUSSION

3.1 Socio-Demographic Characteristics of Participants in the Study (Table 1)

The socio-demographic characteristics of participants in the study are shown in Table 1. A total of one hundred and sixty-three participants were recruited. There was a response rate of 100%. Their age range was 20 - 40 years with a mean of 29.41 years (SD=4.53) and median age of 30 years. The highest proportion of the participants were in the age group of 26-30 years, married, had tertiary education, and had an income range of less than N75,000. Married spouses were mostly professional, while most single women had middle level occupations.

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency(n=163)	Percentage (%)
Age category		
21 – 25 years	35	21.5
26 – 30 years	71	43.6
31 – 35 years	46	28.2
36 – 40 years	11	6.7
Marital status		
Single	19	11.7
Married	142	87.1
Separated	2	1.2
Educational level		
None	4	2.5

Primary	3	1.8
Secondary	46	28.2
Tertiary	110	67.5
Social class		
High	92	56.4
Middle	62	38.1
Low	9	5.5
Income		
Less than 75,000	67	41.1
75,000-100,000		
More than 100,000	62	38.0
	34	20.9

3.2 Obstetric Characteristics of the Participants in the Study (Table 2)

The highest proportion of the women was nulliparous i.e. Para-0 while the least proportion were Para 4 and above. The majority (71.8%) of the participants were in their third trimester while those in their first trimester had the lowest proportion. Most of the pregnancies were planned (Table 2).

Table 2: Obstetric characteristics of participants

Variables	Frequency (n=163)	Percentage
Parity		
Para 0	63	38.7
Para 1	43	26.4
Para 2	26	16.0
Para 3	28	17.2
Para ≥4	3	1.8

Gestational age		
First trimester	10	6.1
Second trimester	36	22.1
Third trimester	117	71.8
Planned pregnancy		
Planned	120	73.6
Unplanned	43	26.4

3.3 Pregnancy Related Findings of Participants (Table 3)

Most of the 43 participants with unplanned pregnancies, felt happy about pregnancy (n=38; 88.4%). Only 4.6% (n=2) wished the pregnancy never occurred. Most of the participants reported that they had no domestic violence in index pregnancy (92.6%; n=151), while 5.5% (n=9) and 1.8% (n=3) of the participants experienced domestic violence twice and thrice respectively. (Table 3)

Table 3. Pregnancy related findings in respondents

Variables	Frequency	Percentage (%)
Feelings about unplanned pregnancy (N = 43)		
Happy	38	88.4
Wished it did not happen	2	4.6
Indifference to pregnancy	3	7.0
Domestic Violence in the index pregnancy		
None	151	92.6
Once	9	5.5
Twice or more	3	1.8

3.4 Prevalence of Antepartum Depression (Figure 1).

Seventy-three of the participants had antepartum depression giving a prevalence rate of 44.8%

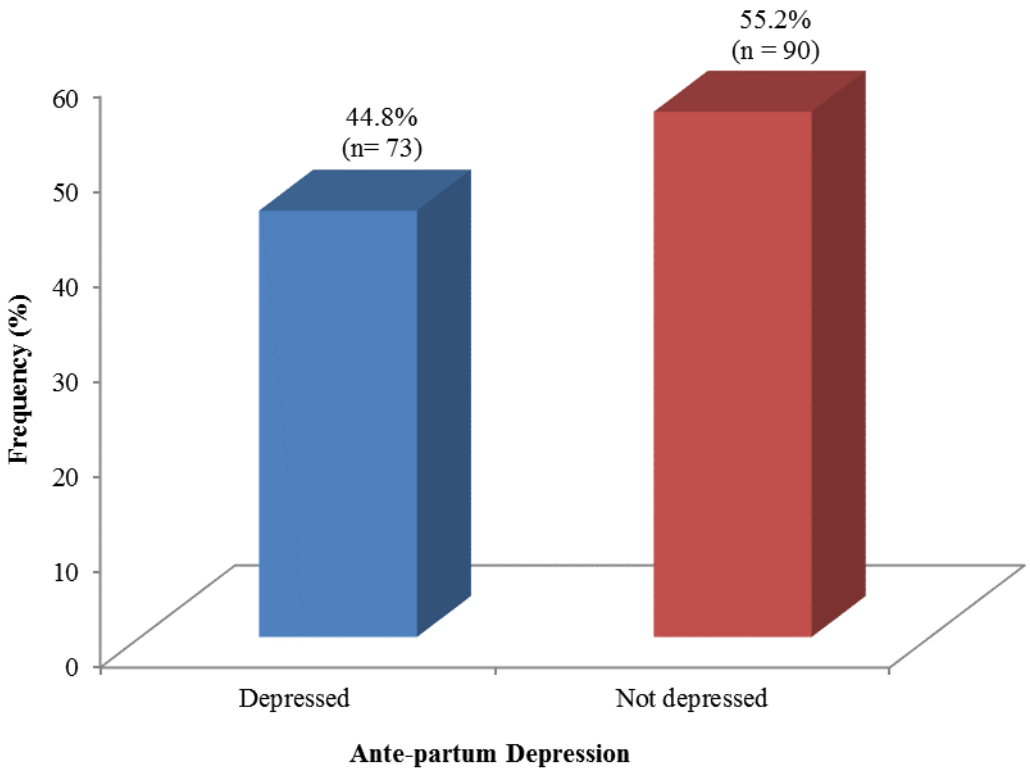

Fig.1: Prevalence of antepartum depression among participants

3.5 Discussion

This study was designed to determine the prevalence of major depression in the antenatal population in Rivers State University Teaching Hospital. The prevalence of depression during the antenatal period was 44.8%. This value was lower than the 47% found in a similar study carried out in rural HIV-affected populations in South Africa by Rochat et al using the short and ultrashort versions of the Edinburgh postnatal depression scale.[33]The dissimilarity between the prevalence in the two studies may be because the South African study was done in HIV patients. The differences in the questionnaire used in the two studies could have also accounted for the disparity in the prevalence figures.

The finding obtained in this index study was higher than 20% in a Pakistan study on the prevalence of suicidal thoughts and attempts among pregnant Pakistani women and 33% obtained in Bangladesh in a community based study.[34,35] Prevalence figures of 26.6% and 32.9% were obtained in Ghana and Côte d'Ivoire respectively.[16] These dissimilarities in the findings possibly reveal socio-cultural and regional differences of antepartum depression.

The economic hardship and the societal unrest in Nigeria within the period of the study could have seriously influenced the prevalence as compared to findings in these countries.

A study carried out at the University of Port Harcourt Teaching Hospital in 2017 showed that antenatal depression was 9.57% prevalent. [18] The disparity between the findings could be explained by the fact that the study by Abbey et al. used the MINI international neuropsychiatric questionnaire for screening patients for depression. In contrast, the present study made use of EPDS. A study by Adewuya et al among pregnant women in Ilesha, South Western Nigeria reported a slightly lower prevalence of 42%.[36] The lower cut-off score of six on the EPDS in the Ilesha study, as against 10 used for the index study, could have accounted for this difference. Furthermore, the Ilesha study was conducted among women in the third trimester of pregnancy who could have been worried about the outcome of their pregnancy, delivery processes and financial constraints. Moreover, changes in the quality and severity of psychological derangements from one trimester to another have been documented among pregnant women.[20]

The prevalence of antepartum depression in the index study was also found to be higher than the 24.5% found in Abeokuta North Local Government Area, Ogun State, and the weighted mean prevalence for antepartum depression of 11.3% reported in a systematic review involving African women by Sawyer et al.[19,37] Nonetheless, the prevalence in this study is still within the range of prevalence of 50% to 48.4% revealed in the systematic review.

Generally, prevalence rates could vary by race/ethnicity.[38] Apart from cultural differences, the discrepancies could also have been due to different instruments and cut-off marks for the same instrument. Moreover, as in other settings, assessment tools perform differently across cultures due to the cultural influences on the perception of measured indices and psychological well-being. Other contributory factors are the timing of evaluation and the population characteristics. The study was carried out during the recession period in Nigeria when her indigenes experienced huge financial and economic distress. The state was also plagued with heightened levels of violence and kidnapping activities affecting more of the female gender, cutting across the middle and high-level social class. The majority of the study participants fell into this category. This could have led to the high prevalence of antepartum depression seen.

Noteworthy, depression has been associated with economic meltdown in some studies done in Nigeria by Afolabi et al. on the pattern of depression among patients in a family practice population[18] and by Thompson et al on the prevalence of antenatal depression and associated risk factors among pregnant women attending antenatal clinics in Ogun state.[19]

Another point worth noting is that the index study was carried out in the Niger Delta which is known for catastrophic environmental pollution. It may be that the high prevalence of major depression in the region was associated with environmental teratogens. Adverse house/built environment, including poor housing quality and non-functioning, lack of green spaces, noise and air pollution were associated with depressive mood.[39] Furthermore, depression was positively correlated with long-term exposure to Particulate Matter-2.5 (PM2.5) and Nitrogen Dioxide ($NO_{2)}$ and with short-term exposure to Particulate Matter-10 (PM10), PM2.5, NO_2, Sulfur Dioxide (SO_2), ozone (O_3) and Carbon monoxide (CO).[40]

4. CONCLUSION

The prevalence of antenatal depression in RSUTH was high underscoring the urgent need for introduction of universal screening for APD in the antenatal period, thus timely identifying and treating the disease with resultant prevention of its untoward negative impact including postnatal depression.

ETHICAL APPROVAL AND CONSENT

Ethical clearance was obtained from the ethical review committee of RSUTH. An informed consent was obtained from the study population prior to recruitment into the study in accordance with ethical principles for the guidance of physicians in medical research.

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LIMITATIONS

This was a one-centre hospital-based study. Nonetheless, the findings of this study may be generalizable to the society because the hospital is a referral centre and attends to persons from different cultural backgrounds and all cadre of persons in the society.

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