Journal of Behavioral Health
www.scopemed.org
DOI: 10.5455/jbh.20140621013458

Original Research

GESDAV

A study of the pattern of distribution and correlates of major depressive disorder among pregnant women in a South Western Hospital in Nigeria

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Received: December 24, 2013
Accepted: June 21, 2014
Published: September 12, 2014

ABSTRACT

Background: Few studies in Nigeria have investigated psychiatric morbidity in pregnancy. There is also a lingering controversy about the prevalence and distribution of psychiatric morbidity across trimesters of pregnancy. However, available evidence worldwide suggests that depressive disorder is associated with poor maternal health and fetal complications. **Objectives:** The aim of this study was to compare the prevalence and correlates of major depressive disorder (MDD) at different trimesters of pregnancy and to determine the socio-demographic and obstetric/gynecological characteristics associated with MDD among pregnant women at different trimesters of pregnancy. **Materials and Methods:** Two hundred and twenty-five pregnant women consisting of 75 from each trimester of pregnancy were selected using a stratified systematic random sampling technique at an antenatal clinic. They were interviewed with depression module of the structured clinical interview schedule for axis 1 diagnostic and statistical manual of mental-IV disorder. The severity of identified MDD was rated using the structured interview for the Montegomery–Asberg depression rating scale. Socio-demographic and obstetrics/gynecological details were also obtained with a questionnaire. **Results:** The prevalence of major depression followed decreasing pattern of distribution across the trimesters. The prevalence rates were 8%, 5.3% and 0% for first, second and third trimester, respectively. In the first trimester, major depression was associated with single marital status ($P = 0.003$) and being a student ($P = 0.02$), while the second trimester was associated with preterm delivery ($P = 0.02$). **Conclusion:** MDD is common among pregnant women and particularly most common in the first trimester as it follows a decreasing pattern of distribution across trimesters of pregnancy. Awareness of the associated factors will assist antenatal care providers in the early detection and prompt referral of such patients thereby avoiding the associated poor obstetric outcomes and fetal complications.

KEY WORDS: Major depressive disorder, pregnancy, trimesters

INTRODUCTION

Contrary to the misconception that women are hormonally protected from psychiatric morbidity during pregnancy, a good number of women do experience emotional disorders during pregnancy [1-3]. More recent findings suggest that pregnancy does not protect women from getting depressed [4,5].

The risk factors for depression in pregnancy are similar to that at other phases of life [6]. The identified risk factors for antenatal depression include young age, low income, low educational attainment, history of depression, history of miscarriage and pregnancy termination, history of childhood sexual abuse, low self-esteem, and low social support among others [7]. Extant studies have reported adverse maternal and infant outcomes in pregnant women with depressive symptoms [8,9]. There is a diminished capacity for self-care, inadequate nutrition, drug and alcohol abuse, poor prenatal clinic attendance, all of which may compromise both physical and mental health of the women, as well as reduce optimal fetal monitoring, and affect the growth and development of the fetus [9,10].

The prevalence of major depressive disorder (MDD) also varies across the three trimesters of pregnancy. Although some authors have reported no significant differences in the prevalence of depression across the trimesters of pregnancy [11], others reported high prevalence of psychiatric morbidities in certain trimesters compared with others. For instance, Esimai *et al.*[12]

reported a higher prevalence of depression in the first and third trimester compared with the second trimester, while Bennett *et al*. [13], found highest psychiatric morbidity in the second trimester and lowest in the first trimester. In addition, other authors have found psychiatric morbidity to be highest in the first and lowest in the third trimester of pregnancy [14,15].

There seems to be a lingering controversy about the differential rates of MDD across the three trimesters of pregnancy despite a well-established association between antepartum psychiatric morbidity and pregnancy outcome. There is also a dearth of study examining the differences in the correlates of this disorder across the three trimesters of pregnancy. In addition, many studies on this subject have focused on the post-partum period compared to the antepartum period.

This study therefore aimed to compare the prevalence of MDD in pregnancy including the socio-demographic and obstetric/gynecological correlates of this disorder across the three trimesters of pregnancy.

MATERIALS AND METHODS

Study Design and Setting

This was a descriptive, cross-sectional study among antenatal clinic attendees of Sacred Heart Hospital, Lantoro, Abeokuta, in South Western Nigeria. Abeokuta, the capital city of Ogun state, has a total estimated population of 451,607 (Federal Republic of Nigeria Official Gazette, 2006). Sacred Heart Hospital is a missionary health facility and is one of the oldest health institutions in Nigeria. It provides both primary and secondary health care, with comprehensive maternal and child health services to Abeokuta and its environs. The antenatal clinic of Sacred Heart Hospital, Lantoro is held 4 days in a week. The antenatal clinic record in 2009 showed that an average of 90 patients was seen on each clinic day.

Ethical approval was obtained from the ethical committee of Sacred Heart Hospital as well as permission to carry out the study from the Hospital management and the consultant in-charge of the antenatal clinic.

Participants

Informed consent from the participating pregnant women was obtained. Participation was voluntary. Respondents' names were not recorded in the proforma and confidentiality was strictly maintained.

The participants consisted of 225 (75 respondents from each trimester) pregnant women attending the antenatal clinic during the study period. A sample frame was generated from the day's clinic attendance register. The attendees were stratified into three groups representing each trimesters of pregnancy based on their last menstrual period. Equal numbers of respondents were selected from each trimester group through a systematic random sampling technique.

Subjects with confirmed pregnancy state through a pregnancy test or an ultrasonography were eligible for the study.Those with previous history of psychiatric disorder, severe medical condition such as severe infection, cardiovascular diseases etc., and those that could not communicate in either English or Yoruba language (the predominant languages spoken in the area the study was conducted) were excluded from the study.

Procedure/Questionaire Administration

Consenting participants who met the inclusion criteria for the study were interviewed using socio-demographic and the clinical information questionnaire designed by the investigators. The Major depression MODULE of the structured clinical interview schedule for axis 1 diagnostic and statistical manual of mental-IV disorder (SCID) was then administered, followed by the Montgomery-Asberg depression rating scale (MADRS) for rating of the severity of depression among respondents meeting the SCID diagnostic criteria for the disorder. The English or the Yoruba translated version of the instrument was used depending on the language of preference of the respondents.

There is no validity study of the Yoruba version of SCID, but several authors had used it in their studies in Nigeria [16,17]. However, there was an excellent Chronbach alpha of 0.96 as well as good correlation in the backward translation.

Data Analyses

Data were analyzed using the Statistical Package for Social Sciences (SPSS) program version 16. Data were presented using frequency distribution tables and cross tabulations with relevant descriptive statistics such as percentages, means and standard deviation. Relationships between categorical variables such as socio-demographic variables, obstetric/gynecological variables and presence or absence of depressive disorder were determined using Pearson's Chi-square and the fishers exact was applied used when necessary. The relationship between continuous variables and binominal categorical variables were examined using Student's *t*-test statistics. Comparisons were considered as statistically significant at the 5% level ($P < 0.05$).

RESULTS

A total of 225 pregnant women were interviewed for the study consisting of 75 pregnant women from each trimester. The ages of all respondents ranged from 18 to 40 years with a mean of 28.3 ± 5.25. The mean age ± standard deviation (SD) for respondents in the first, second, and third trimester groups were 27.8 ± 6.1, 28.0 ± 4.7 and 29.3 ± 4.8, respectively. There were no statistically significant differences in the mean ages of respondents across the trimester groups ($F = 1.90$, df = 2,222, $P = 0.15$).

There was no significant difference in the socio-demographic, obstetrics, and gynecological variables of respondents across the three trimesters as shown in Tables 1 and 2.

Prevalence of MDD

Of a total 225 respondents, 10 had a diagnosis of MDD, giving a prevalence of 4.4%. However, this prevalence varied across trimesters with a prevalence of 8%, 5.3%, 0% in the first, second, and third trimesters, respectively.

Regarding the severity of depression, 2 (0.03%) and 4 (0.05%)

Table I: Socio-demographic characteristics of the respondents

Variables	All respondents (*n*=225) *n* (%)	First trimester (*n*=75) *n* (%)	Second trimester (*n*=75) *n* (%)	Third trimester (*n*=75) *n* (%)	χ^2	df	*P* value
Age group					6.90	4	0.14
18-25	69 (30.7)	26 (34.7)	23 (30.7)	20 (26.7)			
26-35	133 (59.1)	37 (49.3)	48 (64.0)	48 (64.0)			
>35	23 (10.2)	12 (16.0)	4 (5.3)	7 (9.3)			
Religion					0.33	2	0.85
Christianity	132 (58.7)	43 (57.3)	46 (61.3)	43 (57.3)			
Islam	93 (41.3)	32 (42.7)	29 (38.7)	32 (42.7)			
Marital status					6.57	4	0.16
Single	21 (13.8)	15 (20.0)	10 (13.3)	6 (8.0)			
Married	169 (85.8)	60 (80.0)	64 (85.4)	69 (92.0)			
Divorced	1 (0.4)	0 (0)	1 (1.3)	0 (0)			
Educational status					3.40	6	0.76
None	4 (1.8)	1 (1.3)	1 (1.3)	2 (2.7)			
Primary	53 (23.6)	19 (25.3)	15 (20.0)	19 (25.3)			
Secondary	83 (36.9)	28 (37.3)	25 (33.3)	30 (40.0)			
Tertiary	85 (37.8)	27 (36.0)	34 (45.3)	24 (32.0)			
Employment status					8.00	6	0.24
Employed	175 (77.8)	57 (76.0)	54 (72.2)	64 (85.3)			
Unemployed	26 (11.6)	11 (14.3)	8 (10.7)	7 (9.3)			
Student	13 (5.8)	3 (4.0)	8 (10.7)	2 (2.7)			
Apprentice	11 (4.9)	4 (5.3)	5 (6.7)	2 (2.7)			
Occupational status**(*N*=175)							
Higher	28 (16.0)	8 (14.0)	9 (16.7)	11 (17.2)	2.5	2	0.88
Lower	147 (84.0)	49 (86.0)	45 (83.3)	53 (82.8)			

*ANOVA with F- statistics. **Occupational status *n*=175 all respondents. 57, 54 and 64 for first, second and third trimesters' respectively on account of respondents that were unemployed, apprentice and students

Table 2: Obstetric and gynecological characteristic of respondents

Variables	All respondents (*n*=225) *n* (%)	First trimester (*n*=75) *n* (%)	Second trimester (*n*=75) *n* (%)	Third trimester (*n*=75) *n* (%)	χ^2 df	*P* value
Gravidity					5.312	0.07
Primigravida	83 (36.9)	30 (40)	33 (44)	20 (26.7)		
Multigravida	142 (63.1)	45 (60)	42 (56)	55 (73.3)		
Previous abortion					2.322	0.68
Yes	61 (26.7)	19 (25.3)	20 (26.7)	22 (29.3)		
No	164 (73.3)	56 (74.7)	55 (73.3)	53 (70.7)		
Obstetrics hospitalization in previous pregnancy					3.282	0.19
Yes	27 (12.0)	6 (8.0)	8 (10.7)	13 (17.3)		
No	198 (88.0)	69 (92.0)	67 (89.3)	62 (82.7)		
Obstetrics hospitalization in current pregnancy					4.722	0.09
Yes	20 (8.9)	4 (5.5)	5 (6.7)	11 (14.7)		
No	205 (91.1)	71 (94.5)	70 (93.3)	64 (85.3)		
Planned pregnancy					4.342	0.11
Yes	157 (69.8)	50 (66.7)	48 (64)	59 (78.7)		
No	68 (30.2)	25 (33.3)	27 (36)	16 (21.3)		
Previous history of stillbirth					0.822	0.64
Yes	17 (7.6)	4 (5.3)	7 (9.3)	6 (8)		
No	208 (92.4)	71 (94.7)	68 (90.7)	69 (92)		
Previous preterm delivery					3.372	0.19
Yes	8 (3.6)	5 (6.7)	2 (2.7)	1 (1.3)		
No	217 (96.4)	70 (93.3)	73 (97.3)	74 (98.7)		
Previous prolonged labor					3.302	0.20
Yes	18 (8.0)	6 (8.0)	3 (4)	9 (12)		
No	207 (92.0)	69 (92.0)	72 (96)	66 (88)		
Previous operative delivery					1.802	0.60
Yes	25 (11.1)	10 (13.3)	6 (8.0)	9 (12)		
No	200 (88.9)	65 (86.7)	68 (92)	66 (88)		

had mild and moderate depression among the first trimester group respectively, while all respondents in the second trimester with depression had moderate illness severity.

The mean±SD total MADRS score for first and second trimester groups were 20.67 ± 7.74 and 23.50 ± 1.92, respectively. This difference in mean scores was not statistical significant across the trimesters ($F = 0.50$, df = 1, 8, $P = 0.50$).

MDD and its Correlates

Among all respondents, being single was associated with MDD ($P = 0.05$) and was also associated with MDD among respondents in the first trimester ($P = 0.003$). Being a student and unemployed was associated with MDD among respondents in the first trimester group [Table 3].

Although, a history of previous preterm delivery was found to be associated with MDD among all respondents ($P = 0.02$) as well as in the second trimester group ($P = 0.02$) [Table 4].

DISCUSSION

The age range of respondents in this study (18-40 years) is in line with the widely reported reproductive age group of women. This is similar to age of respondents in previous studies among pregnant women in Nigeria [11,18].

About 75% of the respondents had secondary education and above, which is higher than the rate of 44% reported for the general population of women in Nigeria [19]. Level of literacy may have influenced the registration for antenatal care compared to the less educated women. This high rate of literacy

Table 3: MDD and socio-demographic characteristics

Variables	All subject (*n* (%))		First trimester (*n* (%))		Second trimester (*n* (%))		Third trimester (*n* (%))	
	No MD	MD	No MD	MD	No MD	MD	No MD	MD
Age								
18-25	64 (92.8)	5 (7.2)	23 (88.5)	3 (11.5)	21 (91.3)	2 (8.7)	20 (100)	0 (0)
26-35	129 (97.0)	4 (3.0)	35 (94.6)	2 (5.4)	46 (95.6)	2 (4.2)	48 (100)	0 (0)
>35	22 (95.7)	1 (4.3)	11 (91.7)	1 (8.3)	4 (100)	0 (0)	7 (100)	0 (0)
	χ^2=1.9		χ^2=0.78		χ^2=0.87			
	df=2		df=2		df=2			
	P=0.38		*P*=0.68		*P*=0.65			
Religion								
Christianity	125 (94.7)	7 (5.3)	39 (90.7)	4 (9.3)	43 (93.5)	3 (6.5)	43 (100)	0 (0)
Islam	90 (96.8)	3 (3.2)	30 (93.8)	2 (6.2)	28 (96.6)	1 (3.4)	32 (100)	0 (0)
	χ^2=0.55		χ^2=0.23		χ^2=0.33			
	df=1		df=1		df=1			
	P=0.46		*P*=0.63		*P*=0.56			
Marital status								
Single	27 (87.1)	4 (12.9)	11 (73.3)	4 (26.7)	10 (100)	0 (0)	6 (100)	0 (0)
Married	187 (96.9)	6 (3.1)	58 (96.7)	2 (3.3)	60 (93.8)	4 (6.3)	69 (100)	0 (0)
Divorced	1 (100)	0 (0)	-	-	1 (100)	0 (0)	-	-
	χ^2=6.1		χ^2=8.9		χ^2=0.73			
	df=2		df=1		df=2			
	P=0.05		*P*=0.003		*P*=0.70			
Employment								
Employed	169 (96.6)	6 (3.4)	55 (96.5)	2 (3.5)	50 (92.6)	4 (7.4)	64 (100)	0 (0)
Unemployed	23 (88.5)	3 (11.5)	8 (72.7)	3 (27.3)	8 (100)	0 (0)	7 (100)	0 (0)
Student	12 (92.3)	1 (7.7)	2 (66.7)	1 (33.3)	8 (100)	0 (0)	2 (100)	0 (0)
Apprentice	11 (100)	0 (0)	4 (100)	0 (0)	5 (100)	0 (0)	2 (100)	0 (0)
	χ^2=4.34		χ^2=10.1		χ^2=1.64			
	df=3		df=3		df=3			
	P=0.23		*P*=0.02		*P*=0.65			
Educational								
No formal	4 (100)	0 (0)	1 (100)	0 (0)	1 (100)	0 (0)	2 (100)	0 (0)
Primary	52 (98.1)	1 (1.9)	18 (94.7)	1 (5.3)	15 (100)	0 (0)	19 (100)	0 (0)
Secondary	79 (95.2)	4 (4.8)	26 (92.9)	2 (7.1)	23 (92.0)	2 (8.0)	30 (100)	0 (0)
Tertiary	80 (94.1)	5 (5.9)	24 (88.9)	3 (11.1)	32 (94.1)	2 (5.9)	24 (100)	0 (0)
	χ^2=1.44		χ^2=0.66		χ^2=1.27			
	df=3		df=3		df=3			
	P=0.70		*P*=0.88		*P*=0.74			
Occupation								
Higher	27 (96.4)	13 (3.6)	7 (87.5)	1 (12.5)	9 (100)	0 (0)	11 (100)	0 (0)
Lower	142 (96.6)	5 (3.4)	48 (98.0)	1 (2.0)	41 (91.1)	4 (8.9)	53 (100)	0 (0)
	χ^2=0.002		χ^2=2.22		χ^2=0.86			
	df=1		df=1		df=1			
	P=1.0		*P*=0.14		*P*=0.35			

MDD: Major depressive disorder

Table 4: MDD and obstetric and gynecological characteristics

Variables	All subject (*n* (%))		First trimester (*n* (%))		Second trimester (*n* (%))		Third trimester (*n* (%))	
	No MD	MD	No MD	MD	No MD	MD	No MD	MD
Gravidity								
Primigravida	78 (94.0)	5 (6.0)	26 (86.7)	4 (13.3)	32 (97.0)	1 (3.0)	20 (100)	0 (0)
Multigravid	137 (96.5)	5 (3.5)	43 (95.6)	2 (4.4)	39 (92.9)	3 (7.1)	55 (100)	0 (0)
	χ^2=0.77		χ^2=1.93		χ^2=0.62			
	df=1		df=1		df=1			
	P=0.38		*P*=0.16		*P*=0.43			
*Previous abortion								
No	102 (97.1)	3 (2.9)	33 (100.0)	0 (0.0)	28 (90.3)	3 (9.7)	41 (100)	0 (0)
Yes	35 (94.6)	2 (5.4)	10 (83.3)	2 (16.7)	11 (100.0)	0 (0.0)	14 (100)	0 (0)
	χ^2=0.04		χ^2=2.50		χ^2=0.15			
	df=1		df=1		df=1			
	P=0.61		*P*=0.07		*P*=0.55			
Planned pregnancy								
No	63 (92.6)	5 (7.4)	21 (84.0)	4 (16.0)	26 (96.3)	1 (3.7)	16 (100)	0 (0)
Yes	152 (96.8)	5 (3.2)	48 (96.0)	2 (4.0)	45 (93.8)	3 (6.3)	59 (100)	0 (0)
	χ^2=1.94		χ^2=3.30		χ^2=0.22			
	df=1		df=1		df=1			
	P=0.16		*P*=0.07		*P*=0.64			
*Previous stillbirths								
No	123 (96.9)	4 (3.1)	40 (97.3)	1 (2.4)	33 (91.7)	3 (8.3)	50 (100)	0 (0)
Yes	14 (93.3)	1 (6.7)	3 (75.0)	1 (25.0)	6 (100)	0 (0)	5 (100)	0 (0)
	χ^2=0.48		χ^2=1.66		χ^2=0.44			
	df=1		df=1		df=1			
	P=0.43		*P*=0.20		*P*=0.51			
*Previous preterm deliveries								
No	132 (97.8)	3 (2.2)	39 (97.5)	1 (2.5)	39 (95.1)	2 (4.9)	54 (100)	0 (0)
Yes	5 (71.4)	2 (28.6)	4 (80.0)	2 (20.0)	0 (0.0)	1 (100.0)	1 (100)	0 (0)
	χ^2=6.95		χ^2=0.41		χ^2=5.63			
	df=1		df=1		df=1			
	P=0.02		*P*=0.21		*P*=0.02			
*History of prolonged labour								
No	121 (97.6)	3 (2.4)	38 (97.4)	1 (2.6)	37 (94.9)	2 (5.1)	46 (100)	0 (0)
Yes	16 (88.9)	2 (11.1)	5 (83.3)	1 (16.7)	2 (66.7)	1 (33.3)	9 (100)	0 (0)
	χ^2=1.41		χ^2=0.25		χ^2=0.44			
	df=1		df=1		df=1			
	P=0.12		*P*=0.25		*P*=0.20			
*Previous operative delivery								
No	144 (97.4)	3 (2.6)	34 (97.1)	1 (2.9)	34 (94.4)	2 (5.6)	46 (100)	0 (0)
Yes	23 (92.0)	2 (8.0)	9 (90.0)	1 (10.0)	5 (83.3)	1 (16.7)	9 (100)	0 (0)
	χ^2=0.55		χ^2=0.009		χ^2=0.015			
	df=1		df=1		df=1			
	P=0.21		*P*=0.34		*P*=0.38			
^ Hospitalization in previous pregnancy								
No	114 (96.6)	4 (3.4)	39 (97.5)	1 (2.5)	33 (91.7)	3 (4.4)	42 (100)	0 (0)
Yes	23 (95.8)	1 (4.2)	4 (80.0)	1 (20.0)	6 (100.0)	0 (0)	13 (100)	0 (0)
	χ^2=0.04		χ^2=0.67		χ^2=0.51			
	df=1		df=1		df=1			
	P=0.84		*P*=0.42		*P*=0.48			
Hospitalization in current pregnancy								
No	195 (95.1)	10 (4.9)	65 (91.5)	6 (8.5)	66 (94.3)	4 (5.7)	64 (100)	0 (0)
Yes	20 (100)	0 (0)	4 (100)	0 (0)	5 (100)	0 (0)	11 (100)	0 (0)
	χ^2=1.02		χ^2=0.37		χ^2=0.30			
	df=1		df=1		df=1			
	P=0.31		*P*=0.54		*P*=0.58			

*N=142 as it applies only to respondents with multigravidity. MDD: Major depressive disorder

might have helped respondents in this study to understand the possible gynecological complications of pregnancy in advanced age (i.e. age <35 years).

The pattern of distribution of socio-demographic and obstetrics and gynecological variables across trimesters were similar and there was no significant difference across trimesters. This shows that the characteristics of respondents are similar for comparison reducing the chances of cofounders affecting the result of this study.

This study found prevalence of 4.4% for major depression (MDD) among pregnant women across all trimesters.

The finding of 4.4% in this study is much lower than the 15-25% life time prevalence of MDD reported by Sadock and Sadock [20]. Remarkably, it is lower than finding in some studies among a similar population. For example, it is much lower than the 12.3% found by Marchesi *et al*. [21] who examined depression among pregnant women in the antenatal unit in Parma, Italy. The difference could be due to the use of a screening instrument in their study compared to the structured diagnostic instrument used in this study.

In Africa, the finding of this study is similar to the reported prevalence of 4.8% for the adult South African population [22].

The prevalence of MDD found in our study is however higher than the 0.8% reported by Demyttenaere *et al*. [23] and 1.0% by Gureje *et al*. [16] among the general population in the Nigerian Survey of Mental Health. This is also in keeping with the fact that psychiatric morbidity including depressive disorder is higher among pregnant women than the general population [4].

When taken together, this finding is comparable to what obtains in the Nigerian general population as revealed by Gureje *et al*. [16] but lower than reported rates in other parts of the world. One explanation might be that depression manifested by "psychological" complaints is not very common among Nigerians, while "somatic" complaints might represent the construct of depression among them [24,25]. Thus, the use of the SCID with its reliance on "psychological" symptoms in diagnosing in this population might account for the variance observed.

An alternative explanation might be that the impairments associated with major depression might have hindered the clinic attendance of such respondents, thereby reducing the prevalence in this study. Hence, the absence of severe depression in respondents screened as having depression in this study. Furthermore, the difference could be related to the difference in the methodology employed in the various studies. Nevertheless, the prevalence of 4.4% implies that depression is a common psychiatric morbidity in pregnancy and should be looked out for by the attending physician to reduce the associated complication of the disorder among pregnant women.

This study found a prevalence of 8% in the first trimester, 5.3% in the second trimester and 0% in the third trimester. The finding in each trimester is higher than that found in the Nigerian survey of mental health by Gureje *et al*., [16] except in the third trimester where none was diagnosed with major depression.

The decreasing prevalence rate of MDD across trimesters in this study is in keeping with the study by Buist *et al*. [15] and Teixeira *et al*. [14]. Buist *et al*. [15] used similar structured instrument and had large sample size. It is also in keeping with the Aderibigbe *et al*. [26] that found a lower psychiatric morbidity using GHQ-24 in post-partum women compared with when same assessment was done in their second trimester of pregnancy. This may suggest that the closeness to the arrival of the expected baby tend to improve the mental health of pregnant women.

However, it differs from the study by Esimai *et al*. [12] who reported a lower prevalence of depression compared with our finding. This might be due to methodological issues and small sample size for first trimester respondents.

It is also in keeping with that reported by Felice *et al*. 2004, where a lower prevalence of depression in the late pregnancy compared to the earlier period of pregnancy was found.

The decreasing pattern of distribution is however at variance with the study by Abiodun *et al*. [11] who found no difference in the prevalence of psychiatric morbidity across trimesters. Although Abiodun *et al*. did not focus on specific psychiatric morbidity, but it was noted that major depression is one of the most common psychiatric morbidity in pregnancy.

In another vein, the significant decrease in the rate of MDD may be in agreement with the studies that found pregnancy to be protective against psychiatric morbidity. The initial increased prevalence in the first trimester may be resulting from the anticipation of getting pregnant.

This finding suggests that physician should pay more attention to pregnant women in their first trimester to be able to identify and manage emotional problem and improve the fetal and maternal outcome. There is also a need for more researches on this issue to be able to establish the variation of psychiatric morbidity across trimesters.

Our study revealed that depression in pregnancy was associated with single marital status, and history of preterm delivery.

This finding is in keeping with that of Adewuya *et al*. [27] who found that past negative event like previous history of prolonged labor was associated with depression in pregnancy. It is also in agreement with other studies that found significant association between antenatal depressions and being single [28,29], being divorced/widowed [30]. The lack of a partner to provide support may be the factor responsible for the association between antenatal depression and being single, divorced or separated. It is well-known that there is a traditional and religious objection to pregnancy outside wedlock in this environment. The stigma associated with this may contribute to the depressive symptoms. The association of obstetric factors to morbidity in pregnancy is likely due to fear of repeat occurrence of such negative events during pregnancy.

Attention should therefore be paid to pregnant women with the noted socio-demographic and obstetric/gynecological characteristics to prevent and reduce the prevalence of psychiatric morbidity among pregnant women.

This study showed that single marital status, as well as been student and unemployment were associated with depression in the first trimester of pregnancy. This is in keeping with the findings of Karmaliani *et al*. [7] as some of these factors could contribute to a lower house hold wealth which was associated with emotional problem in their study.

Preterm delivery also predicts MDD in the second trimester. This may also explain the fact that past negative event and the fear of a repeat, especially when the pregnant woman is getting to accept the pregnancy may precipitate depressive symptoms.

The absence of major depression in the third trimester is curious, and may be related to the joyful expectation of the child.

Limitations of the Study

This study is limited on account of the cross sectional nature of this study, it was not possible to examine the direction of causality between this disorder and their associated socio-demographic and obstetrics/gynecological characteristics. Another limitation is the fact that Nigeria is a multi-culture country and thus result may differ across the different cultures.

Strengths of the Study

This study is perhaps the first to employ a standardized, internationally accepted semi structured diagnostic instrument to investigate specific psychiatric diagnosis among pregnant women in Nigeria.

This is the first study in Nigeria that has attempted to put into consideration, the relative rarity of first trimester antenatal clinic attendees and has made effort to adequately represent them in the total study sample.

The fact that the current study had based its comparison on trimesters of pregnancy rather than early or late period of pregnancy makes it to be more specific and contextual.

CONCLUSIONS

This study reveals the magnitude of MDD among pregnant women in Nigeria and their pattern of distribution across the trimesters of pregnancy. It noted a decreasing pattern of distribution of psychiatric morbidity with highest prevalence in the first trimester.

This study has shed some light on the magnitude of a common but poorly recognized psychiatric disorder among pregnant women. However, further studies among similar population will assist in no small way in providing reliable estimates and of the burden of emotional disorders among pregnant women. It is hoped that attending health care providers to pregnant women will be able to incorporate short screening for depression into their practice and probably able to add basic psycho-education on this important mental health aspect of pregnant women.

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Source of Support: Nil, Conflict of Interest: None declared.