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Family Support as a Determinant of Major Depression among Pregnant Women in a Low-resource Setting

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Mental wellbeing of the expectant mother, with particular reference to depression may be improved with a strong and effective family support. This study thus aimed to determine the relationship between major depression with perceived family support among pregnant women attending antenatal clinic in the Rivers State University Teaching Hospital.
Methods: This was a cross-sectional study carried out among 163 participants recruited via systematic random sampling at the antenatal clinic of RSUTH. Data on socio-demographic, obstetrics and medical information were obtained with the aid of semi-structured interviewer-administered questionnaire. Screening for depression was done using the Edinburgh Postnatal

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Depression Scale (EPDS) while perceived social support-family scale (PSS-Fa) was used to assess the perceived family support among the participants. Data was analyzed with SPSS version 23. A p-value of less than 0.05 was considered significant.

Results: The mean age of the subjects was 29.1±4.53years with an age range of 20 - 40 years. The highest proportion (43.6%) of the participants was within the age group of 26-30 years. Majority of the subjects were married (87.1%) from monogamous families (73.6%) and had tertiary level of education (67.5%), Majority were within high social class (56.4%), and did not experience intimate partner violence (92.6%). The prevalence of depression was 44.8%. The majority had a strong family support (82.8%). Equal number 14 (8.6%) of participants had no family support and weak family support respectively. All 14(100%) of the participants who had no family support developed antepartum depression; then, out of the 14 participants who had weak family support, 7 (50%) had antepartum depression and 52(38%) of the 135 participants who had strong family support developed antepartum depression (X=19.558; p=0.0001).

Conclusions: Family support during pregnancy was inversely related to the prevalence of major antepartum depression. This finding thus highlights the need for Family Physicians to utilize the role of family support in achieving better mental wellbeing in pregnant women and reduction of the prevalence of antepartum depression and its sequelae.

Keywords: Family support; major depression; determinant; low-resource setting.

1. INTRODUCTION

The global high prevalence of the mental health problem in the developed and developing countries is well documented. The Depression 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]. These symptoms can lead to impairment in social and occupational functioning and are not due to physiological effects of a substance or a general medical condition [3]; Women are more prone to mood disorders (commonly depression) especially during pregnancy due to the pregnancy hormones [4]. The classification into major depressive disorders, dysthymia and depressive disorders not otherwise specified is based on specific symptoms, and it is the commonly used classification [3,5].

Despite its rating as the third disabling condition globally by the World Health Organization, [6] it still remains inconspicuous as a component of reproductive healthcare in many countries, including those in low- and middle-income countries (LMICs) [4,7]. In Nigeria, antepartum depression is still largely undiagnosed and consequently undertreated [8, 9]. Globally, life time prevalence of depression is put at 17%, but it often goes unrecognized, untreated or underestimated [10,11]. 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 [4,12,13]. Women have a lifetime risk of the disease of about 1 in 8; its incidence increases with pregnancy, [8,14,15] especially in low and moderate income countries [7,15,16]. Antenatal depression affects approximately 10% of women during pregnancy, and the rates among low-income pregnant women may be as high as 27.6% [17,18].

Major depression is a recognised indirect cause of maternal mortality through suicide; it increases the risk of cardiovascular and other diseases. It is associated with high numbers of somatic symptoms namely headache, nausea, vomiting, gastrointestinal problems, and sexual dysfunction. Others complications of depression are inadequate weight gain, under-utilization of prenatal care, increased substance use and alcohol consumption with associated foetal alcohol syndrome (FAS), inadequate nutrition, lower infant birth weight, decreased Apgar scores, smaller head circumference, development impairment, prematurity and small for gestational age (SGA) infants [19,20,21]. Untreated depression can lead to functional impairment, 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 for the development of postpartum depression [7,24].

Antepartum depression may be linked with higher rates of suicidal ideation and attempts, depressed mood, anhedonia, feelings of guilt, insomnia, and psychomotor retardation, in comparison to depression in the postpartum period [23,25]. In contrast, psychomotor symptoms (restlessness/agitation), impaired concentration/decision making and anxiety symptoms may be more prominent in postpartum depression [23,26].

Untreated depression can lead to functional impairment which affects the whole family. The family is defined conventionally as a basic social component of a community consisting of parents, and their children, whether dwelling together or not, by blood or marriage – it can also include patient's close social network [3,27]. In Family Medicine, the family is broadly defined as that group of individuals related to a patient biologically, legally, or by choice from whom the patient can realistically anticipate a measure of support in the form of food, shelter, finance, clothing, emotional nurturing and sharing a past, a present and a future together [28,29].

Family support has been referred to as the soothe, concern, respect, or assistance a person receives from members of the family. It also includes care received from spouse, lover, and other family members. This is vital as it can positively or negatively affect health outcomes in the face of stress [29].

The primary function of a family is the provision of nurturance and support for psychosocial growth and development of its member. Poor family support during pregnancy has negative impact on the psychological health of the pregnant woman as it has been shown to be associated with unhealthy eating habits, an increase in the use of alcohol, smoking, and substance use [29]. There is increasing evidence that poor-quality interactions within the family can actually harm physical and mental health. Indeed, persons in unhappy marriages exhibit worse physical and mental health than unmarried persons [30]. It is interesting to know that marriages characterized by an equal power of decision making on the part of both spouses are associated with high levels of depression [30].

Family support could be categorized as perceived or received. More emphasis is placed on "perceived family support" because it has been shown to exhibit a greater impact on mental health than the received support. Furthermore, "received support*"* does not always indicate that the felt needs of the individual are being met by the family members. Perceived family support has also been found to have widely beneficial effects in relation to mortality, physical health and mental health [31]. Findings indicate that although family support has beneficial effects in relation to depression it is a highly differentiated concept whose constituent elements work in different ways. Lack of perceived family support is an important risk factor for ante-partum depression [32].

Family support significantly impact health in both positive and negative ways [29]. Perceived support and marital satisfaction are protective factors against antepartum depression [33]. Having a close-knit and supportive family provides emotional support, economic well-being, and increases overall health. The opposite is also true. When family life is characterized by stress and conflict, the health of family members tends to be adversely affected. Families can be a causal or leading factor in illness [33]. Also, family support directly affects one's health by predisposing to the presence or absence of stress, which ultimately determines the psychological well-being of the family [34]. Close relationship among family members, have been linked to decrease in the likelihood of the onset of chronic disease, disability, mental illness, and untimely death [28].

The African culture traditionally makes citizens gregarious with closely knit families and hence family support. But with the advent and encroachment of Westernization into our traditions and cultures, these well-known family relationships and communal way of life have been toned down and, in some places, (especially the urban settlements) completely eroded. As such, citizens (pregnant women) are left with little or no family support with the attendant mental health problems. Despite this reality, proper adjustment and development of our health system to take care of the fall outs of the eroded family system (such as mental health issues) are lacking.

This study thus aimed to determine the impact of perceived family support on the prevalence of the major antepartum depression in the Rivers State University Teaching Hospital (a tertiary hospital in an urban area). The findings of this study will add to the existing body of knowledge and help increase the awareness of the physicians and

the policy makers on the need for screening for antepartum depression during clinic visits.

2. METHODS

2.1 Study Area

This study was carried out 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 rain forest belt in the South- South geo-political zone of Nigeria and has a population of 7,034,973 [3].

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. Pregnancy was confirmed with ultrasound scan.

2.3 Exclusion Criteria

Pregnant women that were too ill to participate and those with other chronic diseases such as Diabetes Mellitus, Hypertension, and Human Immuno-deficiency virus (HIV) disease were excluded from the study.

2.4 Sample Size

To calculate the minimum sample size for this study, the formula below was used [27].

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

Where;

n=minimum sample size
z=the standard normal deviation usually set at 1.96 which corresponds to the 95% confidence level.

The prevalence of ante partum depression in Nigeria by Esimai was 10.8% [35].

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 into the study.

2.5 Sampling Method

The eligible participants were selected daily for the study using systematic random sampling method. It entails calculation of sampling interval (Sample frame/ Sample size). Sample frame is the population of patients that met the study inclusion criteria. A minimum of 30 pregnant women attended the antenatal clinic on 5 working days (Monday- Friday). Three (3) months were projected for data collection. There were 13 weeks in 3 months. One month was projected for data analysis, writing and printing.

Sample size had been calculated to be 163. Therefore:

$$\text{Sampling interval} = \frac{30 \text{ x } 5 \text{ x } 12}{163}$$
$$= 11.0$$

The first participant 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. Thereafter every eleventh eligible antenatal patient presenting to the ante natal 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. It was divided as follows: Section A – Socio-demographic and obstetric data, Section B - Edinburgh postnatal depression scale, Section C - Medical history (consisting of history of Hypertension, Diabetes, Sickle cell disease, HIV and past history of mental illness) 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 [36]. 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. They are quick and easy to use in the field, in comparison to lengthy interviews [32]. Edinburgh postnatal depression scale [EPDS] is a validated questionnaire which has been used widely to screen for both antenatal and postnatal depression [24]. 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 [37]. The reliability of the scale 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 [18]. 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 scored 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 the over diagnosis 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 [24]. Other instruments used to screen for antepartum depression include the Beck Depression Inventory (BDI) which is used as a longitudinal metric for depression and the Centre for Epidemiologic Studies Depression Scale (CES-D) [19,20].

2.8 Family Support

Perceived social support-family scale is the degree to which one perceives how his or her needs for support are fulfilled by family members. It is a 20-item validated questionnaire, with an alpha coefficient of 0.9 indicating good internal consistency [12,28]. This scale has been used to assess the pattern of family support in a Nigerian population and among patients with depression [28]. It consists of 3 possible responses-Yes, No and Don't know. Scores range from zero to twenty, with higher scores indicating higher levels of perceived family support. A summated score equal to or greater than 11 points suggested 'strong family support.' Scores from 7-10 suggested 'weak family support', while scores from equal to or less than 6 suggested 'poor or absent family support' [24]. Perceived family support scores were grouped into three categories (Strong 11-20, weak 7-10 and absent 0-6).

Common tools for assessing family support include; Julkunen Family Support Scale, Family Support Scale and Perceived Family Support Scale [38]. The Julkunen Family Support Scale was designed by Julkunen and Greenglass in Finland. The tool aims to assess the perceived level of support that a subject receives from the members of his family (with whom he/she lives). The scale is a self-administered tool, comprising of 13 items, which are answered on a five-point Likert scale. This scale has a good reliability as indicated by the Cronbach's alpha of 0.820 for the 13 items in both males and females. However, this tool is not recommended for individuals that live alone, since all of the items are focused on the interrelations of individuals that live together [38]. Another tool that has been used to assess family support is family support scale [39].

2.9 Data Analysis

Data was 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

Socio-Demographic Characteristics of Participants in the Study as 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 income range less than N75,000. Married spouses were mostly professional, while most of the single women had middle level occupation.

Obstetric Characteristics of Participants in the Study as Shown in Table 2

Highest proportion of the women were nulliparous i.e. Para-0 while the least proportion were Para ≥4. 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 of the participants were planned.

Pregnancy Related Findings of Participants as shown in Table 3

Among the 43 participants with unplanned pregnancies, majority 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).

Family Type of Participants as shown in Table 4

Most of the participants were from monogamous family setting (73.6%; n=120), followed by polygamous (12.9%; n=21) while the family type with the least proportion was co-habiting (4.3%; n=7)

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	62	38.0
More than 100,000	34	20.9

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

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 index pregnancy		
None	151	92.6
Once	9	5.5
Twice or more	3	1.8

Table 4. Family type among participants

Family type	Frequency	Percentage (%)
Monogamous	121	74.2
Polygamous	21	12.9
Single parent	15	9.2
Co-habiting	6	3.7
Total	163	100.0

Table 5. Association between perceived family support and ante-partum depression among participants

Family support scale	Ante-partum depression		
	Depressed n% (Row)(Col)	**Not depressed n% (Row)(Col)**	**Total n% (Row)(Col)**
Absent family support	14 (100)(19.2)	0 (0.0)	14 (100)(8.6)
Weak family support	7 (50)(9.6)	7 (50)(7.8)	14 ()100(8.6)
Strong family support	52 (38.52)(71.2)	83 (61.48)(92.2)	135 (100)(82.8)
Total	**73 (44.8)**	**90 (55.2)**	**163 (100.0)**

Chi square = 19.558; p-value = 0.0001: *Statistically significant*

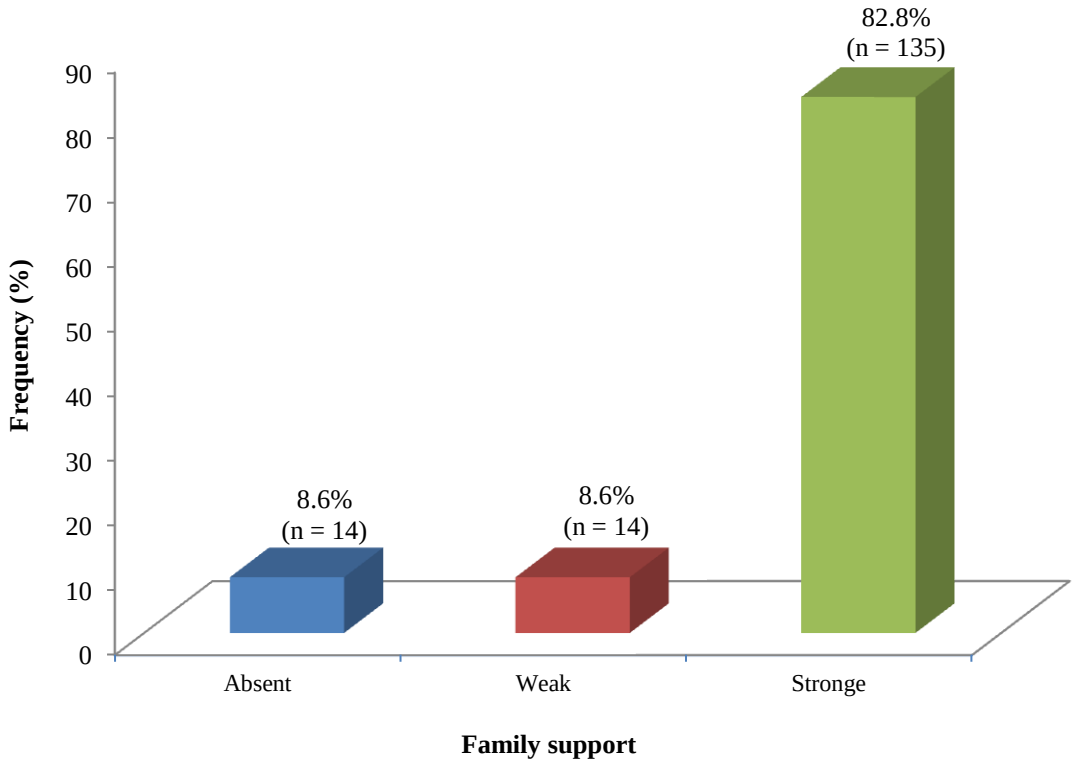

Fig. 1. Distribution of perceived family support among participants

Perceived Family Support among participants as shown in Fig 1

Equal number 14 (8.6%) of participants had no family support and weak family support respectively. Strong family support was noted in 82.8% of the participants (Fig. 1).

Association between Perceived Family Support and Antepartum Depression shown in Table 5 above

All participants with absent family support had antepartum depression. Perceived family support showed a significant relationship with antepartum depression (p=0.0001).

4. DISCUSSION

This study was designed to determine the perceived impact of family support on the prevalence of major depression in the antenatal period in the RSUTH. The prevalence of depression during pregnancy was found to be 44.8%. This value was lower than the findings in a similar study in South Africa [40]. The dissimilarity between the prevalence figure in this study and the South African study is not surprising considering the fact that it was conducted in HIV-affected rural populations where the prevalence of depression is expected to be higher. The differences in the questionnaire used in the two studies could have also contributed. The finding from this study is higher than the finding from the study in Ghana, Cote d'Ivoire and Parkistan [41,42]. These differences in the prevalence in the different studies, may be due to the differences in the socio-cultural and economic realities in the various countries. This finding in this study, is similar to the result of the study in Illesha, South-Western Nigeria [18].

Out of the 14 (8.6%) patients that did not have family support, 14 (8.6%) that had weak family support and 135 (82.8%) that had strong family support, 14(100%), 7(50%) and 52(38.5%) respectively had major depression, indicating that lack of perceived family support was significantly associated with antepartum depression (p-value = 0.0001). The finding is in agreement with several other studies carried out in Nigeria by Adewuya et al., Afolabi et al., and

others around the world [18,28,43,44]. Perceived family support is a multidimensional concept and includes informational support (information and advice), instrumental support (practical help) and emotional support (expression of caring and holding in esteem). Perceived support and marital satisfaction were found to be protective factors against antepartum depression [33].

It has been established that a difficult or unhappy/ poor relationship with partner was a risk factor for the onset of depression during pregnancy [32]. Good support, provided firstly by the partner and also by the family and the social environment, is crucial for the mother-to-be [24]. Marital satisfaction on its own right was not assessed in this study. The existence of a compassionate partner acts as a cushion against the difficulties experienced in the evolution to parenthood, protecting maternal mental health [33]. This kind of support is lacking in many families in Nigeria, due mainly to our degrading economic situation where many families find it increasingly difficult to make ends meet leading to high level of stress at home culminating into decreased compassion, love and support for the pregnant woman. In addition, with the cultural belief that “pregnancy is not sickness” and the economic meltdown, many pregnant women are subjected to long working hours and high level of stress in developing countries like Nigeria.

Due to the influences of Western values, Nigerian women have been increasingly employed. Role conflict based on multiple responsibilities, and little support from spouses may predispose Nigerian women to be more depressed. All these factors lead to the high prevalence of antepartum depression seen in this study. It has been reported by Adachi et al that poor working conditions, in terms of discrimination and lack of key entitlements of pregnant women, are associated with higher levels of antepartum depression [7].

It has been suggested that supportive exchanges exert a great impact on positive well-being [44]. Furthermore, Emotional support and nurturance elements of feeling loved, cared for, and understood have been shown as important correlates in cushioning negative psychological states [44]. This was clearly noted in a cross-sectional study in the Kathmandu valley, Nepal by Amiya et al on perceived family support, depression, and suicidal ideation among people living with HIV/AID [44]. Consequently, the finding from the index study highlights the need for promotion of optimal family support among pregnant women.

5. CONCLUSION

The prevalence of antepartum depression among antenatal population at the RSUTH was high and its association with lack of perceived family support was statistically significant. The above knowledge will be of immense benefit to health care workers as the authors advocate universal screening of pregnant women for antepartum depression and also improving the psychological wellbeing of pregnant women, thus preventing the untoward effect of antenatal depression and the sequel postnatal depression.

6. LIMITATION OF THE STUDY

This was a single-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.

CONSENT

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.

ETHICAL APPROVAL

Ethical clearance was obtained from the ethical review committee of RSUTH.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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