



Assessing Levels of Anxiety and Psychological Distress among Pregnant Women in a South-west State of Nigeria: A Descriptive Cross-Sectional, Exploratory Study

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ABSTRACT

Mental health problems affect nearly one-fifth of pregnant women during prenatal and postpartum periods; being particularly vulnerable to psychological distress and anxiety because of immense physiologic and psychosocial changes associated with pregnancy. Screening pregnant women for psychological wellbeing remains ignored. This study assessed the levels of anxiety and psychological distress among pregnant women Attending Antenatal Clinic (ANC) at a General Hospital in Oyo State, southwest Nigeria. Adopting the quantitative descriptive survey method, data were collected from a consecutive sample of 102 pregnant women using modified versions of the Kessler Psychological Distress Scale (K-10) and Beck Anxiety Inventory (BAI) Scale. The data collected were analyzed descriptively using the Statistical Package for Social Sciences (SPSS) version 23.0. Results reveal that over 40% of the women reported moderate to severe psychological distress (21.6% "moderate disorder" and 20.6% "severe disorder.") with another 36.3% reporting "mild disorder;" Only 21.6% of them were "likely to be well." On the anxiety scale, a large majority (87.3%) of the women reported low level of anxiety, and the remaining 12.7% moderate anxiety; none reported any worrying level of anxiety. Further descriptive analysis suggests varying anxiety and psychological distress levels could be related to participants' socio-demographic variables. The study shows levels of psychological distress and anxiety are being experienced by many pregnant women, portending possible high risks of developing mental health disorders during and after pregnancy. The antenatal clinics and periods should be the most suitable places and times for routine and periodic assessment of psychological distress and anxiety in all pregnant women for early interventions. More expanded and intervention-focused studies are however necessary as next steps, as this study is essentially exploratory.

Keywords: Antenatal care; Anxiety; Expectant mother; Psychological distress; Maternal mental health; Pregnant women

INTRODUCTION

Physiologic and psychosocial changes associated with pregnancy, leading to varying health challenges for the mother, infant, and the entire family, are becoming public health challenges, increasing the risk of emotional suffering and psychiatric morbidity at this developmental stage of a woman's life. Expectant mothers thus become vulnerable to a variety of psychological

and mental health issues. About one-fifth of these women are affected by mental health problems during the prenatal and postpartum periods. Pregnant women are particularly vulnerable to such issues as psychological distress and anxiety.

Psychological distress indicates a state of emotional suffering characterized by symptoms such as loss of interest, sadness and hopelessness, and anxiety (such as restlessness and feel-

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ing tensed). It is uneasy feelings of depression or anxiety in response to physical, spiritual or emotional demands, or combination of multiple demands that result in temporary or permanent harm [1].

Maternal psychological distress during pregnancy can adversely affect the development of the fetus, with possible long-term negative effects on the health of the child, the mother and the entire family. Although the connection may not appear immediately, the long term health consequences can be debilitating, disabling, and could affect foetal programming. Fetal programming postulates that the foetus adapts to its utero environment to maximize growth and development, but such adaptations can have long term consequences post-natally. Maternal psychological distress and anxiety could be the triggers that herald the multi-system adaptive processes in pregnant women [2].

For many women, pregnancy is a time of mixed feelings, thoughts and even behaviours; joy, confusion, fear, sadness, anxiety, stress and even depression. Pregnancy is such an occasion of major changes in an individual's life (a crucial period of transition) which is accompanied by its stressors. The stress that comes with the change of pregnancy making certain women vulnerable to this new stress in their lives, therefore resulting to psychological distress and anxiety [3].

Despite being an important component of reproductive health, mental and emotional health remains essentially neglected. Ignoring mental health of women is not new and therefore systematic screening of expectant mothers are often ignored, allowing most antenatal mental health disorders go undetected despite being major health issue, a decisive factor in social mobility and efficacy. This is in spite of the increasing burden of psychological and mental health challenges among expectant mothers [4]. Even in the researchers' environment, it has been observed that antenatal screening services often ignore psychological screening. The need to establish a general speculation in this setting that expectant mothers accessing antenatal services are most likely harbouring varying levels of psychological pressures has become apparent. This study assessed the levels of anxiety and psychological distress among pregnant women attending Antenatal Clinic (ANC) at a General Hospital in Oyo State [5]. The study also explored the possible link between the expectant mothers' levels of anxiety and psychological distress and their socio-demographic characteristics [6].

MATERIALS AND METHODS

Design

This is a facility-based study. Adopting the quantitative descriptive survey exploratory design, data were collected from an available, convenient sample of 102 pregnant women, accessing antenatal services in a secondary health facility. Setting and study population; the setting is the Antenatal Clinic (ANC) of the General Hospital, Igbeti; the study population was ANC clients. Igbeti town is the headquarters of Olorunsogo Local Government in the Northern part of Oyo State [7]. The town houses the three religions in Nigeria, namely; African Traditional Religion (ATR), Christianity, and Islam but most of the inhabitants are Christians. The town is dominated by the Yoruba but various tribes co-exist. The major occupation of people are farming and trading. There is one General Hospital in Olorunsogo Local

Government Area, owned by the Oyo State Government. The hospital is a secondary health institution, centered on providing general medical services, both as in- and out-patients [8]. The hospital is the Only General Hospital in Olorunsogo Local Government. The General hospital was established 6th of June 1968 to cater for all health care needs and has various sections and units with competent health care workers in which the Ante natal clinic belongs. The hospital was selected for this research study [9].

Study Population, Sample/Sampling Technique

The population of study comprised of all pregnant women accessing antenatal services between June 20 and July 18 2021 at the Hospital, occupation, religion, and tribe, among others [10]. All available and willing women at antenatal clinic were conveniently included (total enumeration); 102 participants were thus assessed within the four weeks of data collection. Availability sampling did not require statistical expertise as it gave the researchers the chance to assess the readily accessible respondents i.e. participants found on clinic days [11].

Instrument for Data Collection

A set of questionnaire made up of modified versions of the Kessler Psychological Distress Scale (K-10) and Beck Anxiety Inventory (BAI) Scale was used to collect data. The K-10 Scale (Kessler Psychological Distress Scale), a standardized instrument containing 10 items with a five level scoring likert scale designed to test psychological distress was used for assessment. Beck anxiety Inventory Scales involves list of statements dealing with general signs and symptoms of anxiety on a three level scoring likert scale. The set of questionnaire consists of three parts:

Section A: Socio-demographic characteristics including age, marital status, religion, ethnicity and highest educational qualification [12].

Section B: Beck Anxiety Inventory (BAI) Scale involves list of statements dealing with general signs and symptoms of anxiety [13].

Section C: Kessler psychological distress scale (K10) is a simple measure of Psychological Distress [14].

Reliability of instrument: The Instrument was tested in a pilot study by administering it to 11 pregnant women at a PHC Ilorin, Kwara State. Following the test, no ambiguity in the questionnaire was found. The reliability analysis yielded 0.815 on Cronbach's coefficient. It was then adjudged to valid and reliable and was therefore administered on the sampled pregnant women [15].

Method of data collection: The questionnaires were administered, face by face by one of the female authors/researchers with the help of a research assistant (a nurse at the clinic) who had been previously oriented to the data collection process the instrument. Pens were also provided for ticking applicable options by literate participants on the questionnaire. Semi-literate and non-literate participants were assisted in filling suitable options. A minimum of at ten minutes was required to complete each questionnaire by the participants, although they were not formerly given any time limit to do so. Completed questionnaires were retrieved from participants and they were thanked for their participation and cooperation. All the

questionnaires administered were retrieved at the spot. Most the questionnaires were researcher-administered while some were just guided to complete the instrument. The others were self-administered. Response rate was 100%.

Method of Data Analysis

The data was screened and coded. All the questionnaires were coded 001-102 while all the variables were coded respectively. Data were then entered directed into the Statistical Package for Social Sciences (SPSS) version (23.0) [16].

Measurements: Interpretations of the scales were adopted.

The BAI scale: The total score was calculated by finding the sum of the 21 items.

Score of 0-21 =low anxiety Score of 22-35=moderate anxiety Score of 36 and above=potentially concerning levels of anxiety.

For the psychological distress, the K10 Scale involved 10 questions about emotional states; each with a 5-level response scale. The measure was used as a brief screening to identify levels of distress. Each Item is scored from one ("None of the time"(to five ("all of the time").

Scores of the 10 items are then summed, yielding a minimum of 10 and a maximum score of 50. Low scores indicate low levels of psychological distress and high scores indicate high levels of psychological distress:

10-19=Likely to be well.

20-24=Likely to have a mild Psychological Distress.

25-29=Likely to have a moderate Psychological Distress.

30-50=Likely to have a severe Psychological Distress.

All the study participants had their responses analysed based on these scores (BAI Scale and the K-10). Descriptive analysis was undertaken, and data were presented in frequency tables and charts [17]. Inferential analysis was not feasible because of the limited biased sample size (the convenient-availability sampling method) adopted for the study, as to avoid possible errors (**Table 1**).

Table 1: Socio-demographic variables of respondents (N=102).

Variable	Frequency	Percentage (%)
Age (in years)		
Below 20	5	4.9
20-24	16	15.7
25-29	38	37.3
30-34	23	22.5
35-39	14	13.7
40-44	6	5.9
Marital status		
Single	15	14.7
Married	84	82.4
Divorced	3	2.9
Religion		
Christianity	66	64.7
Islam	31	30.4
Traditional	5	4.9
Ethnicity		
Yoruba	74	72.5

Hausa	16	15.7
Igbo	12	11.8
Educational level		
Primary	19	18.6
Secondary	37	36.3
Tertiary	46	45.1

Ethical approval: The University of Ilorin Teaching Hospital (UIH) Health Research Ethical Committee (UIH/HREC) gave approval for the study. Additionally, a letter granting permission was also collected from the General Hospital Igbeti Management, after a further review of the research proposal and the instrument for data collection. The instrument has an aspect that introduced what was to be done by the respondents. Confidentiality of their responses and anonymity were all assured. Participation was voluntary, and willingness to participate after due explanation served as consent from the women. The purpose of the study was explained to the respondents and their consent was gotten willingly. There was no one respondent less than 18 years among the pregnant women [18].

RESULTS

Socio-Demographic Characteristics

This shows that age range of the participants was between 30 and 34 years (mean age=26.3 yrs) with a large proportion being 25-29 years (n=38; 37.3%). In all, over 65% are below 30 years of age, indicating a relatively young group of mothers; only 6 (5.9%) was between ages 40 and 44 years [19].

Majority of the expectant (n=84; 82.4%) were married, 15 (14.7%) single and 3 (2.9%) were divorced. Their religious affiliations indicate a predominantly Christian population (n=66; 64.7%), with Islam and African Traditional Religion [ATR] constituting 30.4% (n=31) and 4.9% (n=5) respectively. Respondents were mainly of the Yoruba ethnic extraction (n=74; 72.5%), the predominant and major tribe in south-west Nigeria, with a good number of Hausa/Fulani (n=16; 15.7%) and Ibos 12 (11.8%) accessing antenatal services. These are the major tribal groups in Nigeria. Level of anxiety among pregnant women [20].

The level of anxiety as measured using Beck Anxiety Inventory Scale and presented in **Figure 1** indicates that a large majority, 89 (87.3%) of antenatal (pregnant) women, reported low level anxiety (BAI Score: 0-21) while 13 (12.7%) reported moderate anxiety (Score: 22-35). None of the expectant mothers reported any worrying level of anxiety (**Figure 1**).

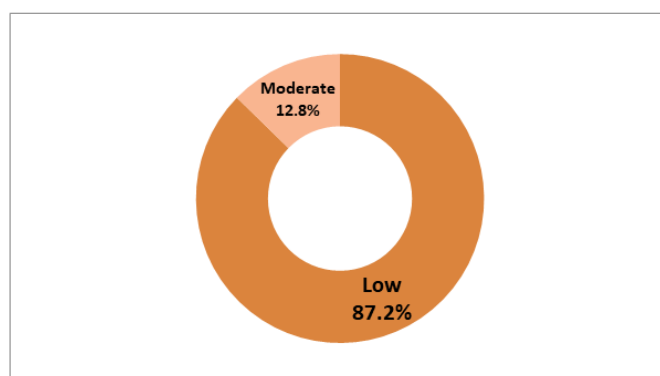


Figure 1: Level of anxiety among pregnant women (BAI Scale).

Of all the socio-demographic variables, the level of education appears to present an interesting descriptive finding between the two. The pregnant women of both primary and secondary school levels appear to rate their anxiety levels relatively higher (15.8% and 16.2% respectively), compared to the 8.7% to those with tertiary education. However the sample size does not make for statistical test of relationship [21].

Pregnant Women's Level of Psychological Distress

Using Kessler Psychological Distress Scale-K-10, over one-third of pregnant women (n=37; 36.3%) reported "mild disorder" (K-10 score: 20-24), 22 (21.6%) "moderate disorder" (K-10 Score: 25-29) while 21 (20.6%) reported "severe disorder" (K-10 score: 30-50). Only a little above one-fifth of the women are "likely to be well" (K-10 score: 10-19) (n=22; 21.6%) (Table 2).

Table 2: Participants level of education and observed anxiety level.

Highest level of education	Anxiety level		Total (%)
	Low (%)	Moderate (%)	
Primary	16 (84.2)	3 (15.8)	19 (100.0)
Secondary	31 (83.8)	6 (16.2)	37 (100.0)
Tertiary	42 (91.3)	4 (8.7)	46 (100.0)
Total	89 (87.2)	13 (12.8)	102 (100.0)

Overall, the moderate and severe scores show a K-10 score of 42.2%, indicating a level of psychological distress that would require intervention. The implications on the health of the mother and the child and even on the family should be significant [22].

Comparing pregnant women's level of psychological distress with their level of Anxiety and Socio-demographic characteristics [23]. The levels of psychological distress are compared with those of anxiety.

From it is indicated that pregnant women with low anxiety levels are more "likely to be well" or to "have a mild distress" level (95.5% and 94.6% respectively) than those with moderate anxiety; who, in turn, are more likely to have moderate to severe psychological distress (8.2% and 9.0% respectively) [24].

The psychological distress is also compared with the expectant mothers' socio-demographic characteristics. The few teenage expectant mothers seem to have more levels of distress than the rest, followed by those aged 25 years-9 years. Older pregnant women (age: 35-44 years) and those between 20 years and 24 years appear more mildly distressed (Table 3).

Table 3: Anxiety level and psychological distress among pregnant women.

Psychological distress	Anxiety level		Total (%)
	Low (%)	Moderate (%)	
Likely to be well	21 (95.5)	1 (4.5)	22 (100.0)
Likely to have a mild disorder	35 (94.6)	2 (5.4)	37 (100.0)
Likely to have a moderate disorder	18 (81.8)	4 (8.2)	22 (100.0)
Likely to have severe disorder	17 (81.0)	6 (9.0)	21 (100.0)
Total	89 (87.2)	13 (12.8)	102 (100.0)

The unmarried expectant mothers are more likely to have moderate (33.3%) to severe distress (60.0%) while divorced pregnant women are mostly likely have moderate distress. The most likely to be well or have mild distress are the married ones. This

seems to suggest a possible correction between marital status and psychological distress in this setting (Figure 2).

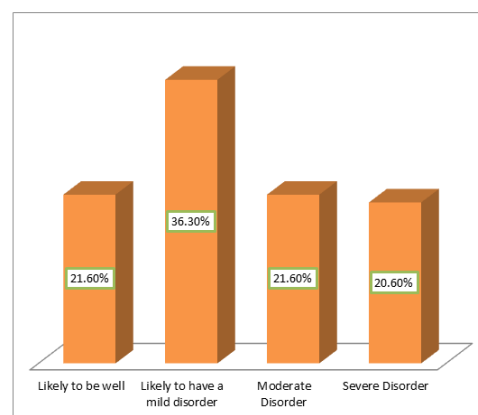


Figure 2: Level of psychological distress among respondents using Kessler psychological distress scale (K10).

On religious affiliation and psychological distress, those who subscribe to Islam are 67.7% more likely to have moderate to severe distress compared to their Christian counterparts (33.3%) in the same category. Those practicing African Traditional Religion are more likely to be well or have mild distress (40.0 and 60.0% respectively). The Hausa women are more likely to be well and the Igbos more likely to report moderate to severe distress (Table 4).

Table 4: Psychological distress and socio-demographic characteristics of respondents.

Variables	Level psychological distress				Total (%)
	Likely to be well (%)	Likely a mild disorder (%)	Likely moderate disorder (%)	Likely severe disorder (%)	
Age (in years)					
>20	0	0	3 (60.0)	2 (40.0)	5 (100.0)
20-24	3 (18.7)	9 (56.3)	3 (18.7)	1 (6.3)	16 (100.0)
25-29	10 (26.3)	7 (18.4)	13 (34.2)	8 (21.1)	38 (100.0)
30-34	6 (6.1)	8 (34.8)	2 (8.7)	7 (30.4)	23 (100.0)
35-39	3 (21.4)	7 (50.0)	1 (7.1)	3 (21.4)	14 (100.0)
40-44	0	6 (100.0)	0	0	6 (100.0)
Total	22 (21.6)	37 (36.3)	22 (21.6)	21 (20.6)	102 (100.0)
Marital status					
Single	0	1 (6.7)	5 (33.3)	9 (60.0)	15 (100.0)
Married	22 (26.2)	35 (41.7)	15 (17.9)	12 (14.2)	84 (100.0)
Divorced	0	1 (33.3)	2 (66.7)	0	3 (100.0)
Total	22 (21.6)	37 (36.3)	22 (21.6)	21 (20.6)	102 (100.0)
Religion					
Christi- anity	14 (21.2)	30 (45.5)	9 (13.6)	13 (19.7)	66 (100.0)
Islam	6 (19.3)	4 (13.0)	13 (41.9)	8 (25.8)	31 (100.0)
ATR	2 (40.0)	3 (60.0)	0	0	5 (100.0)
Total	22 (21.6)	37 (36.3)	22 (21.6)	21 (20.6)	102 (100.0)
Ethnicity					
Yoruba	11 (14.9)	35 (47.2)	11 (14.9)	17 (23.0)	74 (100.0)
Hausa	7 (43.8)	1 (6.2)	6 (37.5)	2 (12.5)	16 (100.0)

Igbo	3 (25.0)	1 (8.3)	5 (41.7)	3 (25.0)	12 (100.0)
Total	22 (21.6)	37 (36.3)	22 (21.6)	21 (20.6)	102 (100.0)
Highest level of education					
Primary	4 (21.0)	4 (21.0)	8 (42.1)	3 (15.9)	19 (100.0)
Secondary	8 (21.6)	11 (29.7)	11 (29.7)	7 (18.9)	37 (100.0)
Tertiary	10 (21.7)	22 (47.8)	3 (6.5)	11 (23.9)	46 (100.0)
Total	22 (21.6)	37 (36.3)	22 (21.6)	21 (20.6)	102 (100.0)

On the level of psychological distress and highest educational status, while those with tertiary level of education are more mildly distressed, those with primary and secondary education are more likely to have moderate distress. All the women in the three categories of educational levels (primary, secondary and tertiary), reported similar “likely to be well” (21.0%, 21.6% and 21.7% respectively) and “likely to have severe disorder” (15.9%, 18.9% and 23.9% respectively). Educational status should also be a possible factor of correction in a more expanded randomized sample size [25].

DISCUSSION

This study explored the levels of anxiety and psychological distress among expectant mothers accessing antenatal services at a General Hospital, a secondary level health facility in Oyo State, southwest Nigeria. The anxiety levels reported were low anxiety (87.3%) (BAI Score $\geq$ 21) and moderate anxiety 12.7% [BAI Score of 22-35]; none of the pregnant women had the upper limit of anxiety. Findings of a study conducted in a similar environment at a tertiary health facility (Obafemi Awolowo University teaching Hospital Ile Ife) on pregnancy-related anxiety symptoms involving 230 pregnant women attending antenatal clinic reported 17.4% severe level of anxiety, compared to no severe level in our present study. However, our finding compares with an earlier study by Boakye on the perceived stress and anxiety among a group of pregnant women in Ghana where none of the respondents has severe anxiety disorder. These studies focused on the level of anxiety or stress, just like much earlier studies have shown. Our present study expanded on these studies by including psychological distress and a description of these variables compared with the women's socio-demographic characteristics to stimulate interest in studying possible moderating roles of socio-biodata.

On the psychological distress scale, over 40% of the pregnant women reported moderate and severe levels of distress (moderate disorder 21.6% (K-10=25-29) and severe disorder 20.6% (K-10 Score=30-50)), with only 21.6% reporting “likely to be well” (K-10 Score=10-19), and 36.3% mild Disorder (K-10 Score of 20-24). These findings contrast the findings reported in Kirkuk City by Lateef where among pregnant women mild levels of psychological distress. Our findings seem to correspond with the assertion that mental health issues are common in pregnancy. Soroye, had emphasised that about one-fifth of pregnant women are affected by mental health problems affect during prenatal and postpartum periods. Anxiety and psychological distress levels found in this study indicate surpassing this 20% assertion of the presence of mental health issues. Very recent studies attest to these ever-increasing mental health problems; anxiety disorders are the most prevalent mental health disorders globally, and expectant seem to have

a fair share of this problem. This calls for anxiety management during the antenatal period during and outside the antenatal clinic visits. Earlier study findings had pointed to the vulnerability of pregnant women to mental health issues including psychological distress and anxiety. In this study, two of the researchers (the first and last authors) had to interact with the service providers to provide some level of psycho-education for ANC attendees as preliminary data check suggested some level of psychological distress and anxiety among study participants, after the completion of data collection. This approach is necessary as previously done in other settings.

Furthermore, findings from the study also show the comparison of levels of anxiety and psychological distress. Findings reveal that “likely to be well” or “have a mild distress” level (95.5% and 94.6% respectively) appear associated with low anxiety levels among pregnant women, while moderate to severe psychological distress seem common those with moderate anxiety. This finding is not conclusive of the inability to undertake a statistically acceptable test of association due to the limited sample elements.

In addition, the expectant mothers' socio-demographic characteristics present some interesting hints about their psychological distress. For example, the teenage expectant mothers, although very few, reported more levels of distress just as the more elderly pregnant reported lower level of distress; the unmarried and divorced are more likely to have moderate (33.3%) to severe distress (60.0%); and adherents to ATR fared better than others on the distress. Religious, ethnic and educational grouping all point to level varying levels of distress. All these seem to suggest possible corrections between age, marital status, among others with psychological distress in this setting. They could be explored as possible predictors of anxiety and psychological distress in future expanded randomized studies! In some previous studies, significant associations between some socio-demographic variables such as level of education have been found and expectant mothers' levels of psychological distress. This is because perinatal mental health issues remain a huge public health challenge but they are roundly ignored and these women need to be supported. Otherwise significant effects on the women and the family including the unborn child will be obvious soon or later.

LIMITATIONS OF THE STUDY

Interpreting the questionnaire to the semi and non-literate respondents (primary schools certificate holders and many of the secondary school leavers) was a challenge; time-consuming and limited additional coverage. In addition, the small sample size, and limiting the study to a relatively homogenous setting (i.e. Yoruba dominated setting) has made generalization of findings inappropriate. Data collected was based on self-report which gave room for participant's bias response to the questions which may have tendencies of depicting social desirability. Therefore, further studies on this subject should make use of a larger sample as well as a more systematic and authentic means of gathering data which may include other techniques such as observation of the participants in different environmental situations. Despite the shortcomings, this study has highlighted and stressed a neglected area of reproductive health lamented by many authors in the past.

Implications for Nursing Practice

Psychological assessment must form a routine assessment for perinatal women particularly pregnant women. The Focus Antenatal Care (FANC) recommended by WHO if properly implemented should direct more attention to the psychological and mental health needs of expectant mothers. This should stress the need for attention for psychological distress and anxiety disorders for all pregnant women irrespective of socio-demographic variables. It is also imperative that more extensive studies on perinatal mental health literacy are needed, may be using diverse tools to measure these constructs. Future studies should incorporate parity of the pregnant women as this might point in some particular directions. In particular, qualitative methods may even be explored to reveal more psychological experiences.

CONCLUSION

Pregnant women irrespective of socio-demographic variations are experiencing significant levels of psychological distress with concerned anxiety levels. Socio-demographic profiles are not significant key determinants of the mental health and psychological needs of pregnant. This indicates the need for adequate psychological assessment for all categories of pregnant women during ANC visits. Otherwise, the high risks of developing mental health disorders in during and after pregnancy may become more likely. Mental health training programs with multiple training sessions and methods should be delivered in Hospitals during ante natal clinics and also periodic assessment of pregnant women attending ante natal clinics for psychological distress and anxiety.

RECOMMENDATIONS

Based on the results of this study, it is recommended that psychological assessment be commenced as early in ante natal booking in Pregnancy as possible to identify the presence of psychological danger signs in pregnancy promptly. Thus, antenatal services should incorporate routine and periodic assessment of psychological distress and anxiety as regular tests for pregnant women at each antenatal visit for continuous monitoring. In addition, awareness programmes should be put in place to provide information on effects of psychological distress and anxiety during and after pregnancy while providers of antenatal services need to assessed for know-how of assessing psychological issues in pregnant women with a view to instituting short and regular Mental Health training for these caregivers attending pregnant women should also form part of the overall programme.

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