PREVALENCE, RISK FACTORS ASSOCIATED WITH DEPRESSION AND EXPERIENCE OF VIOLENCE AMONG PREGNANT WOMEN ATTENDING PRIMARY HEALTH CENTERS IN IBADAN NORTH LOCAL GOVERNMENT

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DEDICATION

This project is dedicated to God Almighty, the most beneficent, the most merciful.

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ABSTRACT

Pregnancy and the transition to parenthood involve major psychological and social changes in the mother, which have been linked to symptoms of anxiety and depression.The World Health Organization identifies depressive disorders as the second leading cause of global disease burden by 2020. Antenatal Depression (AD) can strike at any time during the pregnancy but seems to become more pronounced during the third trimester and can result in poor prenatal care, premature delivery, low birth weight, and, just possibly, depression in the child. Prevalence rates range between 25% to 50% using variety of depression tools. Most studies of maternal depression have focused on post-natal depression. However, depression is the most prevalent psychiatric disorder during pregnancy**.** Hence, this study assessed the prevalence, risk factors for antenatal depression and experience of violence among pregnant women attending selected primary health centers within Ibadan north.

This study employed a cross-sectional design using a three stage sampling technique. Three wards out of a total of 12 wards in Ibadan north local government were stratified into three based on their level of development, simple random sampling was used to pick one primary health center each from the three stratified wards and proportionate random sampling was used to pick respondents from each of the health facility. All pregnant women who were present for antenatal care sessions as at the time the study was carried out were recruited. An interviewer administered questionnaire investigating the prevalence, risk factors, experience of gender-based violence and experience of stressful life events was used to obtain data from the respondents. Prevalence of depression was determined on a 30-point scale; scores less than or equal to 10 and greater11 were categorized as not depressed and depressed respectively. Questions on risk factors, experiences of gender based violence (GBV) and stressful life events (SLE) were asked objectively with either a 'yes or no' answer. Data obtained were analyzed using descriptive statistics and Chi-square test at p=0.05.

The ages of the respondents ranged from 17-44 years of age with a mean age of 28.2±5.86. The prevalence rate of AD was 56.0%. More than half of the respondents were exposed to the risk factors associated with antenatal depression. Few 26(8.0%) of the respondents had high exposure to gender-based violence while pregnant. Experience of violence and parity were associated with depression, meanwhile, the socio-demographic characteristics of respondents were not associated with depression in pregnancy.

Antenatal depression is regularly overlooked and under-diagnosed, hence, antenatal care should not only focus on physical health but also on emotional health, there is need to promote investments in effective prevention, diagnosis and treatment initiatives which are essential for detecting pregnant women in need of intervention in order to safeguard the well-being of mother and baby.

Keywords; antenatal depression, pregnant women, risk factors, violence
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CERTIFICATION

I certify that this project was carried out by Aransi, Ganiyat Oluwatoyin in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria.

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GLOSSARY OF ABBREVIATIONS

AD	Antenatal depression
ADS	Antepartum depressive symptoms
AS	Anxiety symptoms
ECT	Electroconvulsive therapy
EPDS	Edinburgh postnatal depression scale
GBV	Gender based violence
NDHS	National demographic health survey
SSRIs	Selective Serotonin Reuptake Inhibitors

CHAPTER ONE
INTRODUCTION

1.1 Background of the study

Depression commonly refers to feelings of ongoing low mood, unhappiness or distress. The term 'depression' 'describes a group of illnesses which all have the characteristic of excessive and long term mood disturbance, often accompanied by feelings of anxiety (Evans, Burrows, Norman, 2000). The causes of depression are now understood to be complex and relate to the interaction of many diverse factors, including environmental, social, biological and psychological risk. Depression is the most prevalent psychiatric disorder during pregnancy and is associated with psychosocial and clinical obstetric factors. The Global Burden of Disease Study estimated that by 2020, depression will become the second greatest cause of disease burden in the world (WHO, 2000).

Pregnancy is usually viewed by the public and the medical profession as a period of emotional well-being that is protected against mental disorder. Antenatal care traditionally focuses on physical health rather than on emotional health. Consequently, antenatal depression is regularly overlooked and under diagnosed, locally and globally. In contrast, there has long been a focus on depression in the postpartum period, with considerable literature and public awareness. Only during the past decade have studies of antenatal psychiatric morbidity become more common (Bennett, Einarson, Taddio, Koren, Einarson, 2004, O'Keane, Marsh, 2007). Once a woman is pregnant, there are hormonal changes, especially in the first trimester, psychology tends to be volatile, emotional, get depressed more easily. It is possible to show clinical mania, depression or even hallucinations.

Pregnancy is a time of many changes for a woman. Some women may find the changes and uncertainties that pregnancy can bring more difficult to manage than others. For some, pregnancy can be happy and exciting and for others they may have mixed or negative feelings about pregnancy, birth and becoming a mother. Pregnancy represents a time of role change and transition. While pregnancy is a positive event for most, some women find themselves tearful, sad, alone, or exhibiting other perplexing behaviors. The prevalence of depression during pregnancy which has been found in multiple studies is equal to or higher than the prevalence of depression after pregnancy (Gotlib, Whiffen, Mount, Milne, Cordy, 1989, Logsdon, McBride, & Birkner, 1994).

Infact, depression during pregnancy has been identified as a significant factor contributing to postpartum depression.

Antenatal depression is a mood disorder just like clinical depression. Hormonal changes can affect brain chemicals, which are directly related to depression. In this period, depression may be diagnosed if emotional disturbances last longer than two weeks; disturbances occur in memory and concentration, the woman experiences weight loss and loss of appetite or wakes up early in the morning. Depression is likely if the woman feels a general loss of interest and energy, generalized guilt and hopelessness, and has thoughts of self-harm (Karacam, Ancel, 2009, Yanikkerem, Ay, Piro, 2013, Caliskan, Kose, Ocaktan, Ozdemir, 2007).

For too many women, joyfully anticipated pregnancy and motherhood bring depression as an unexpected accompaniment. Depression during pregnancy may result in poor prenatal care, premature delivery, low birth weight, and, just possibly, depression in the child. Depression after childbirth (postpartum depression) can lead to child neglect, family breakdown, and suicide. A depressed mother may fail to bond emotionally with her newborn, raising the child's risk of later cognitive delays and emotional and behavior problem.(Dalton, 2001: Evans et al, 2001, Glover et al, 2002, Grush et al, 1998, Miller et al, 2002, Oren, 2002).

Pregnancy and depression affect each other (O'Keane, Marsh, 2007). Pregnancy is a major psychological, as well as physiological event: With an excess of chronic life stressors, women may find themselves unable to cope with the additional demands of pregnancy. Many women, particularly those living in poverty or already with many dependent children, may view pregnancy with ambivalence or negative feelings. Issues or memories surrounding poor parenting or abuse women have suffered may reassert themselves and cause distress. Relationships are often under pressure - domestic violence increases during pregnancy. Pregnancy and its associated complications have been an issue of public health concern throughout the world.

Depression in pregnancy may diminish the woman's capacity for self-care, including inadequate nutrition, drug or alcohol abuse and poor antenatal clinic attendance, all of which may compromise a woman's physical and mental health and may reduce optimal fetal monitoring or restrict the

growth and development of the foetus (Pajulo, Savonlahti, Sourander, Helenius, Piha, 2001, Hartley, Tomlinson, Greco, 2011., Kaaya, Mbwambo, Kilonzo, 2010, Rochat, Tomlinson, Bärnighausen, Newell, Stein, 2011).

Interpersonal violence is a significant risk factor for poor health outcomes in women (Stewart, 2006), and is recognized by the World Health Organization as an essential public health priority (WHO, 2002). Interpersonal violence refers to intentional violence between individuals either in the family or community that is in the form of neglect, psychological or emotional, sexual, or physical violence (WHO, 2006). Family violence often takes place in the home (e.g. child maltreatment or intimate partner violence), while community violence occurs between unrelated individuals (e.g. rape, sexual assault by an unknown person, random acts of violence) and includes violence in institutional settings such as workplaces or schools.

Some of the factors that may contribute to antenatal depression include: Family or personal history of depression- If depression runs in the family, or if there are past episodes of depression, there is a high chance of having antenatal depression. Relationship difficulties-If partners are experiencing difficulties, perhaps there is fear a lack of support when the baby is born or there are already problems in the relationship, then this can have a major impact on emotional well-being. Stressful life events-Any major life change, such as divorce, or job loss, can contribute to depression. Problems with the pregnancy- A troubled pregnancy - one that causes severe morning sickness, for example can take its emotional toll. Infertility or previous pregnancy loss- If there had been difficulties trying to get pregnant, or have had a miscarriage in the past, there might be worries about the safety of the pregnancy. Past history of abuse- Pregnancy can trigger painful memories in women who have survived emotional, sexual, physical, or verbal abuse. Lack of social support-All people need to feel supported by those around them, and especially when they are facing the changes that parenthood will bring. Social isolation can contribute to the possibility of depression. Financial difficulties-Financial problems can significantly increase the amount of stress during pregnancy. Fortunately, if the depression is detected soon enough, help is available for mother and child. Depression in pregnant women is often overlooked, partly because of a widespread misconception that pregnancy somehow provides protection against mood disorders. In reality, almost 25% of cases of postpartum depression start during pregnancy, and depression may peak at

that time (Dalton, 2001, Evans et al, 2001, Glover et al, 2002, Grush et al, 1998, Miller et al, 2002, Oren, 2002)..

1.2 Statement of the problem

Pregnancy and its associated complications have been an issue of public health concern throughout the world. Pregnancy and the transition to parenthood involve major psychological and social changes in the mother, which have been linked to symptoms of anxiety and depression (Teixeira, Figueiredo, Conde, Pacheco, Costa, 2009). Depression is a common, universal and debilitating public health problem that is projected to be responsible for the highest global burden of diseases by the year 2030 (Cindy, 2014). Depression is also the most prevalent psychiatric disorder during pregnancy, and several studies have documented prevalence range from 4% to 25%. (Rich-Edwards et al., 2006) with point prevalence of 15.5% in early and mid pregnancy, 11.1% in 3 rd trimester, and 8.7% in post-partum period (Teixeira et al., 2009., Pereira et al., 2009). Most studies of maternal depression have focused on post-natal depression. However depression is the most prevalent psychiatric disorder during pregnancy (Bennett, Einarson, Koren, Einarson, 2004) and it is of public health importance. Studies show that the prevalence of antenatal depression is higher than that of postnatal depression (Bennett et al, 2004, O'Keane, Marsh et al, 2007).

The burden of depression during pregnancy is high: according to a recent systematic review of cohort studies, the prevalence of antenatal depression was 14%, compared to a 10.5% pooled prevalence of postnatal depression (Maullik, Patel, Langham, 2005). Most studies were carried out in high income countries and the remaining in low and middle income countries. The pooled prevalence of antenatal and postnatal depression was 28.4% and 23.1 respectively, for lower income countries, compared to and 9.6% for high income countries. Thus, prevalence rates of depression during pregnancy were significantly higher in low-income countries.

The perinatal mental health of women living in low- and lower-middle-income countries has only recently become the subject of research (Hendrick, 1998) in part because greater priority has been assigned to preventing pregnancy-related deaths. In addition, some have argued that in resource-constrained countries women are protected from experiencing perinatal mental problems through the influence of social and traditional cultural practices during pregnancy and in the postpartum

period (Stern, Kruckman, 1983, Howard, 1993). Several risk factors predispose to depression during pregnancy including obstetric factors. Depression during pregnancy is not only the strongest risk factor for post-natal depression but also leads to adverse obstetric outcomes.

Untreated antenatal depression may be associated with a 50 - 60% risk of a postpartum disorder. Up to 50% of cases of antenatal depression are undetected, which coupled with an unwillingness to use medication in pregnant patients makes it likely that most depressed pregnant women will not be on treatment for depression (Alder, Fink, Urech , Hösli, Bitzer, 2011).

Globally, at least one in three women has experienced some form of gender-based abuse during her lifetime (Heise.,1999). Millions of girls and women suffer from violence and its consequences because of their sex and their unequal status in society. Violence against women (often called gender-based violence) is a serious violation of women's human rights.

Most studies of maternal depression have focused on post-natal depression, this therefore is a critical gap worthy of research, the study therefore focused on antenatal depression, its prevalence using the Edinburgh post-natal depression scale, the risk factors associated with depression in pregnancy, more still, the study also went further to assess the experience of violence among pregnant women to find out if violence is also a risk factor for antenatal depression.

1.3 Justification of the study

Most studies of maternal depression have focused on post-natal depression. However depression is the most prevalent psychiatric disorder during pregnancy and it is of public health importance.

It is not clear why 'pregnancy anxiety' has such powerful effects on mothers and their babies; in fact the nature of this concept has not yet received sufficient attention to be fully explicated. Possibly, what makes it potent is that the measures of depression in pregnancy capture both dispositional characteristics, and traits, and environmentally influenced states. For example, women who feel depressed during pregnancy seem to be more insecurely attached, of certain cultural backgrounds, more likely to have a history of infertility or to be carrying unplanned pregnancies, and have fewer psychosocial resources (Dunkel, 2011).

Vulnerabilities that predate pregnancy may interact with the social, familial, cultural, societal, and environmental conditions of pregnancy to increase levels of pregnancy anxiety, producing effects on the maternal–fetal–placental systems, especially during sensitive periods such as early

pregnancy. Although much isn't known, a worthwhile goal may be to identify women high in anxiety before conception, as well as women high in anxiety during pregnancy, and especially those women who are anxious about specific aspects of their pregnancies – about this child and this birth, and about competently parenting with this partner.

These women would appear to be targets for early intervention in future studies such as evidence-based interventions for stress reduction; mood regulation treatments such as cognitive behavioral therapies, pharmacological treatments, and follow-up care during postpartum to prevent a range of adverse outcomes for mother, child, and family.

The findings of this study will provide insight on the prevalence and risk factors associated with antenatal depression among pregnant women attending antenatal care sessions at selected primary health centers in Ibadan north local government, Ibadan. This information will also be beneficial to the Ministry of Health and Non-governmental organizations interested in health issues of women of reproductive age and the entire population of women, in coming up with intervention measures to curb the problems that arise due to prevalence of antenatal depression.

The information generated from the study will help policy makers, planners and implementers of programmes to be able to approach the fight against morbidity and mortality as a result of antenatal depression in a more holistic way. Lastly the study will contribute to the field of knowledge in antenatal depression among pregnant women and act as a basis for future research in this area.

1.4 Operational definition of terms

Depression; a mood disorder marked especially by sadness, inactivity, difficulty with thinking and concentration, a significant increase or decrease in appetite and time spent sleeping, feelings of dejection and hopelessness, and sometimes suicidal thoughts or an attempt to commit suicide.

Antenatal Depression (AND) is depression that occurs during pregnancy. It can strike at any time during the pregnancy but seems to become more pronounced during the third trimester.

1.5 Research questions

1. What is the prevalence of depression among pregnant attending antenatal care sessions in primary health centers within Ibadan north local government?

2. What are the risk factors associated with depression among pregnant women attending antenatal care sessions in primary health centers within Ibadan?
3. Do pregnant women attending primary health centers in Ibadan north local government have the experience of gender-based violence while pregnant?
4. What stressful life events predisposed pregnant women attending primary health centers in Ibadan north local government to depression in pregnancy?

1.7 Broad objective

The broad objective of the study was to investigate the prevalence, risk factors associated with antenatal depression and experience of violence among pregnant women attending antenatal care sessions in primary health centers within Ibadan North.

1.8 Specific objectives

The specific objectives of the study were:

1. To determine the prevalence of depression among pregnant attending antenatal care sessions in selected primary health centers in Ibadan north local government.
2. To determine the risk factors associated with depression among pregnant women attending antenatal care sessions in selected primary health centers in Ibadan.
3. To assess the experience of gender-based violence among pregnant women attending antenatal care sessions in selected primary health centers in Ibadan north local government
4. To document stressful life events that predisposed pregnant women attending primary health centers in Ibadan north local government to depression and violence

1.9 Hypotheses

1. There is no significant association between the demographic characteristics of respondents and depression in pregnancy
2. There is no significant association between experience of violence and depression in pregnancy
3. There is no significant association between parity and depression in pregnancy

CHAPTER TWO

LITERATURE REVIEW

2.1 Nature of depression

Depression is a common illness worldwide, with an estimated 350 million people affected. Depression is different from usual mood fluctuations and short-lived emotional responses to challenges in everyday life. Especially when long-lasting and with moderate or severe intensity, depression may become a serious health condition. It can cause the affected person to suffer greatly and function poorly at work, at school and in the family. At its worst, depression can lead to suicide. Suicide results in an estimated 1 million deaths every year (WHO, 2014).

Depression is the leading cause of disease burden for women in both high-income and low- and middle income countries. It is a common, universal and debilitating public health problem that is projected to be responsible for the highest global burden of diseases by the year 2030 (Cindy, 2014).

The burden of depression and other mental health conditions are on the rise globally. Depression results from a complex interaction of social, psychological and biological factors. It can in turn lead to more stress and dysfunction and worsen the affected person's life situation (WHO,2014).
There are interrelationships between depression and physical health. For example, cardiovascular disease can lead to depression and vice versa.

2.2 Types and symptoms of depression

Depending on the number and severity of symptoms, a depressive episode can be categorized as mild, moderate or severe (WHO, 2012). A key distinction is also made between depression in people who have or do not have a history of manic episodes. Both types of depression can be chronic (i.e. over an extended period of time) with relapses, especially if they go untreated.

Unipolar depression: in its typical depressive episodes, the person experiences depressed mood, loss of interest and enjoyment, and reduced energy leading to diminished activity for at least two weeks. Many people with depression also suffer from anxiety symptoms, disturbed sleep and

appetite and may have feelings of guilt or low self-worth, poor concentration and even medically unexplained symptoms.

Depending on the number and severity of symptoms, a depressive episode can be categorized as mild, moderate, or severe. An individual with a mild depressive episode will have some difficulty in continuing with ordinary work and social activities, but will probably not cease to function completely. During a severe depressive episode, it is very unlikely that the sufferer will be able to continue with social, work, or domestic activities, except to a very limited extent.

Bipolar mood disorder: this type of depression typically consists of both manic and depressive episodes separated by periods of normal mood. Manic episodes involve elevated or irritable mood, over-activity, pressure of speech, inflated self-esteem and a decreased need for sleep (WHO,2012).

2.3 Causes of depression

Depression can be seen from two main perspectives: Biological perspective and environmental and personal perspective (Cindy-lee, 2014).

Biological perspective; this includes the genetic, neurological, hormonal mechanism which play roles in the development of major depression and many of these factors center around reactions to stressors and processing of emotional information.

Environmental and personal perspective; includes Active life events, chronic stress, exposure to early adversity.

Active life events; there is evidence that many major depressive episodes are triggered by stressful life events and there is some evidence of a general linear association between severity and number of negative events and the probability of depression onset.

Chronic stress; another cause of depression is enduring long term stressful circumstances. The strains of poverty or unemployment or displacement may trigger depression but depression erodes the individual's ability to cope with or change his or her circumstances.

Exposure to early adversity; there is an ample evidence of significant association between childhood emotional, sexual or physical abuse and adult depression particularly among women.

Mothers with a history of trauma or abuse are at significantly higher risk to develop postnatal depression.

Personal factors include; cognitive (excessively pessimistic and self-critical, perception of selflessness or hopelessness about changing their situations) and interpersonal vulnerability (marital conflict, intimate partner violence, low social support) (Cindy, 2014).

2.4 Global, regional and national burden of depression

The World Health Organization identifies depressive disorders as the second leading cause of global disease burden by 2020 and unipolar depression makes a large contribution to the burden of disease, being at third place worldwide and eighth place in low-income countries, but at first place in middle- and high-income countries. They make up 3 of the 10 leading causes of disease burden in low- and middle-income countries, and 4 of the leading 10 in high-income. Depression is the leading cause of disease burden for women in both high-income and low- and middle-income countries. The three leading causes of global diseases by 2030 are projected to be unipolar depressive disorders, ischaemic heart disease and road traffic accidents (WHO, 2004)

2.5 Depression in pregnancy

Historically, pregnancy is a time of enjoyment and fulfilment for women. However, evidence indicates that there is an increase in psychiatric morbidity, particularly depression and anxiety, during this period (Fatoye, Adeyemi and Oladimeji, 2004).

Frequently, when a woman is pregnant, signs of depression are overlooked by friends, relatives and even care-givers as being "normal" during pregnancy. It can also be difficult for the woman to identify depression because her state of being is so completely different from her pre-pregnant state. Often she will comment that she's "just tired" or that she's not particularly enjoying the pregnancy. Each woman will experience antenatal depression differently and not all women will have the same symptoms. Usually antenatal depression is indicated when symptoms are excessive or when they last for two weeks or more, and most women will find that the severity of their symptoms remain fairly constant. Contrary to general belief, gestation is not always characterized by joy and accomplishments. Many women experience sadness or anxiety in these periods of their lives. Gestation and postpartum (puerperium) are periods of woman´s life which involve many physical,

hormonal, psychic and social insertion changes which can have a direct effect on her mental health (Camacho et al, 2006).

The belief that the pregnant woman's feelings may affect the baby's health is very old but only recently it has aroused scientific interest (Allister et al, 2001, Andersson et al, 2004; Chung et al, 2001; Dayan et al., 2006; Diego et al., 2004; Hoffman & Hatch, 2000; Patel & Prince, 2006; Patel et al., 2004; Rahman et al., 2002; Rahman et al, 2004). It is known that the mother's nutritional, hormonal, metabolic, psychological and social environment during gestation is related to the newborn's health. A woman suffering from gestational depression can be less concerned with her health in general. This can lead her to not follow through with prenatal care, to abuse alcohol, tobacco and other drugs, suffer from insomnia and diminished appetite, which results in a decrease in the quantity and quality of her nutrition.

Pregnancy hormones may contribute to feelings of depression. While hormonal ups and downs affect all pregnant women, some feel the swings more intensely. However, many other factors can contribute to the development of depression during pregnancy. A pregnant woman may experience some uncertainty about the pregnancy, feeling perhaps that the timing is wrong, that career or long-term goals may need to be delayed or that there might be financial problems. She may also feel uncertain about her new role as mother, fears about carrying the pregnancy, as well how she will cope with labour and delivery. She may also feel guilty about being unhappy because everyone expects her to be content and blooming. Also, depression during pregnancy has been relatively neglected. Indeed, pregnancy was thought to protect women against depression (Field, Diego, Dieter, Hernandez-Reif, Schanberg, Kuhn, 2004). Studies of antenatal psychopathology have mostly examined antenatal mood as a predictor of postnatal depression.

Depressive symptoms during pregnancy may have devastating consequences, not only for the women, but also for the child and family (Alder, Fink, Bitzer, Hosli, Holzgreve, 2007). Antepartum depressive and anxiety symptoms (ADS and AAS, respectively) can lead to postpartum depression (Heron, O'Connor, Evans, Glover, 2004) lower birth weight, and premature delivery, and have a negative impact on child development

Depression during pregnancy is a matter of public health importance due to 3 prime reasons: Firstly, rate of depression during pregnancy is high during antenatal period (Teixeira, Figueiredo, Conde, Pacheco, Costa, 2009). Secondly, it is the strongest risk factor for post-natal depression (Wissart , Parshad, Kulkarni, 2005., Heron et al., 2004., Johanson et al, 2000) Thirdly, it leads to adverse maternal and fetal outcomes (Bansil et al, 2010). Thus, makes depression during pregnancy a matter of great importance.

Depression related to child bearing can occur during pregnancy (antenatal depression), after birth (postnatal depression) or both. Antenatal and postnatal depression share similar prevalence ratings to those for depression in the general population with estimates ranging from 12–20%, with a commonly reported estimate of 13% (O'Hara, Swain, 1996). The immediate and longer-term consequences of perinatal depression are far-reaching, affecting not only the mother but her infant, and their relationships.

Depression in pregnancy may diminish one's capacity for self-care, including inadequate nutrition, drug or alcohol abuse and poor antenatal clinic attendance, all of which may compromise a woman's physical and mental health and may reduce optimal fetal monitoring or restrict the growth and development of the fetus (Austin, 2003, Wolkind, 1981).

The consequences of postnatal depression on child development in early infancy, later infancy and early childhood have been the focus of a number of studies, with cognitive, emotional and social development potentially affected (Milgrom, Westley, Gemmill., 2004, Murray, Cooper, 1996). The impact on child development is quite modest in high socioeconomic samples and greater when the postnatal depression is chronic and severe (Murray, Cooper, 1996).The interactional relationship between mother and baby may be compromised in the presence of postnatal depression, the effects of which may be of greater influence than the mere exposure of the infant to maternal depressive symptomatology.

Detection and adequate treatment of antenatal depression are critical public health issues for researchers, clinicians and policymakers to address. Unidentified and untreated depression can lead to detrimental effects on the mother and the child. Depressed women are more likely to have unhealthy practices during pregnancy and to have higher rates of poor nutrition, in part due to a lack of appetite, leading to poor weight gain during pregnancy and risking intrauterine growth.

Depressed women are less concerned with prenatal care and feel less invested in the care toward their pregnancy. Women with depression also have increased pain and discomfort during their pregnancies, reporting worse nausea, stomach pain, shortness of breath, gastrointestinal symptoms, heart pounding, and dizziness(Benute, Nomura, Reis, Fraguas, Lucia.,2010, Marcus SM, Heringhausen,2009,Koken,Yilmazer,Cosar,Sahin,Cevrioglu,Gecici,2008)

Untreated depression in pregnancy has been also associated with poor pregnancy and birth outcomes such as, maternal pre-eclampsia, low birth weight, smaller head circumference, increased risk of premature delivery, increased surgical delivery interventions, lower APGAR scores, and is considered to be the strongest risk factor for postpartum depression(Leigh., 2008, Felice, Saliba, Grech, Cox.,2004)

2.6 Symptoms of Antenatal Depression

The physical signs of antenatal depression include: Fatigue, significant changes in appetite, and sleep patterns, lack of interest in sex, having no pleasure or interest in usual activities, irritability, lack of concentration or focus. The behavioral and psychological features include: Lack of motivation, obsessive behavior such as cleaning, walking, or pacing all the time , substance abuse, inability to cope with day to day routines , no interest in appearance, or taking care of oneself ,cutting off from others, uncontrollable crying ,not wanting to be pregnant ,irrational thoughts ,fear of being rejected or unwanted by partner ,blaming oneself for the things that seem wrong in your life, wanting to run away, fear of harm coming to your partner or your baby, fear of being alone, or going out , negative, obsessive or morbid thoughts ,thoughts of suicide. Other notable features are guilt, shame or worthlessness, extended periods of feeling sad , feeling pessimistic and bleak about the future, high levels of anxiety or panic, feeling unusually irritable and impatient, mood swings, feeling 'low' or 'flat', feeling pressured by others to experience the so called joys of pregnancy, helpless, hopeless or out of control , feelings of anger and resentment toward yourself and/or your baby which won't go away, feeling inadequate, having no confidence or self-esteem, feeling numb, empty and despondent. Some symptoms may be caused by such things as anaemia, sleep deprivation, thyroid dysfunction or bereavement and need to be considered before diagnosing depression.

2.7 Prevalence rates of antenatal depression

Table 2.1; Summary of data on prevalence of antenatal depression

Author/year of publication	Study population	Setting	Major findings
Adewuya, Ola, Aloba, Dada, Fasoto, 2007	Pregnant women	Pregnant Nigerian women	Depression is common in late pregnancy among Nigerian women with a prevalence of 8.3%
O'Hara, 1986.	Pregnant women	All pregnant women	Antenatal depression affects approximately10% of women during pregnancy
Burke, Burke, Rae et al, 1991	Pregnant women	Women in their childbearing years	Prevalence of depression is highest among women between the ages of 25 and 44 years.
O'Keane, Marsh, 2007	Pregnant women	Developed countries	10-15% of women in developed countries are depressed in pregnancy. Estimates suggest 7% of women are depressed outside the perinatal period
O'Keane, Marsh, 2007		Economically poorer countries	19-25% of women are depressed. 10% of women are depressed postnatally
Rich-Edwards et al., 2006	All women		Depression affects 20% of women during their lifetime, with pregnancy being a period of high vulnerability
Hobfoll, Ritter, Lavin et al, 1995	Pregnant women	Low-income pregnant women	Depression in pregnancy may be as high as 27.6%
Hobfoll, Ritter, Lavin, Hulsizer, Cameron, 1995., Séguin, Potvin, St-Denis, Loiselle, 1999	Pregnant women	Middle-class population	Antenatal depression prevalence ranges between 9% to 28%
Hobfoll, Ritter, Lavin, Hulsizer, Cameron, 1995., Séguin, Potvin, St-Denis, Loiselle, 1999	Pregnant women	Low-income population	Prevalence rates range between 25% to 50% using variety of depression tools
(Teixeira et al., 2009., Pereira et al., 2009). (Rich-Edwards et al., 2006)	Pregnant women	All pregnant women	Depression is also the most prevalent psychiatric disorder during pregnancy, and several studies have documented prevalence range from 4% to 25%. with point prevalence of 15.5% in early and mid pregnancy, 11.1% in 3 rd trimester, and 8.7% in post-partum period

The main risk factors associated with these differences are past history of psychiatric disorders, poor antenatal care, poor nutrition, stressful life events, economic deprivation and gender based violence which is more prevalent in developing countries (Patel, Rodrigues, Desouza, 2002).

2.8 Factors that influence antenatal depression

Antenatal depression is usually caused by many factors. Usually, it is associated with the fear and stress of the pregnancy. Some of the most important risk factors, indicated by the literature, are life stress, history of depression, lack of social support, unintended pregnancy, domestic violence, lower income, lower education, smoking, single status, teenage pregnancy and first pregnancy among other factors (Lancaster, Gold, Flynn, Yoo, Marcus, 2010). Social support generally is recognized as any action or relationship that has some positive benefit for a person. There is some evidence to suggest that several factors influence social support provision, including an appraisal of need by the potential provider of support and the ability to provide that necessary support (Jung, 1998). Yet, one of the most important variables in social support is the perception of its existence by the recipient meanwhile lack of social support is related to anxiety and depression,

Numerous risk factors have been identified for prenatal depression. Those most commonly observed are previous depressive illness, negative life events in the preceding pregnancy(Collins, Dunkel-Schetter, Lobel, et al.,1993), negative attitudes toward pregnancy, unplanned or first pregnancy, physical discomfort (e.g., nausea), and previous stillbirth(Burger, Horwitz, Forsyth, et al.,1993, Hughes, Turnton,Evans.,1999) Additionally, poor prenatal care, poor marriage dynamics, remarriage, and substance abuse/dependency have also been identified as risk factors for depression in pregnancy(Kitamura, Sugawara, Sugawara et al.,1996).

Several risk factors predispose to depression during pregnancy. Some of them are poor antenatal care, poor nutrition, stressful life events like economic deprivation, gender-based violence and polygamy, previous history of psychiatric disorders, previous puerperal complications, events during pregnancy like previous abortions, and modes of previous delivery like past instrumental or operative delivery. Other factors include age, marital status, gravidity, whether pregnancy was planned or not, previous history of stillbirth, previous history of prolonged labor, and level of social support (Chung, McCollum, Elo , Lee , Culhan.,2004). Thus, assessment of depression during pregnancy is essential for detecting pregnant women in need of intervention in order to safeguard the well-being of mother and baby.

Certain experiences may make some women more susceptible to the blues than others, antenatal depression can affect anyone. There is certainly no one particular group of women that it cannot affect.

The following experiences can place women at a greater risk of developing depression during pregnancy: difficulty becoming pregnant, unwanted pregnancy, anxiety about their ability to cope with a child, inadequate support from their partner, family and/or friends, past history of depression, low self-esteem and history of abuse, Previous miscarriages or stillbirths that cause anxiety which can lead to depression.

Risk factors include young age (Marcus S, Flynn, Blow, Barry., 2003), low income, lower educational attainment, history of depression (Marcus S, Flynn, Blow, Barry., 2003., Le H., 2004), a history of miscarriage and pregnancy termination (Rubertson, Waldenstrom, Wickberg., 2003), and a history of childhood sexual abuse, concomitant high anxiety in pregnancy, low self esteem and low social support. There appears to be paucity of research examining major life events and negative cognitive attributional style and their role in antenatal depression.

Other risk factors include:Unplanned pregnancy, problems in the pregnancy – i.e Hyperemesis (severe sickness), Symphysis Pubis Dysfunction (SPD), previous traumatic labour or delivery, stressful major life event e.g a relationship breakdown, job change or unemployment, moving house, bereavement, previous pregnancy loss, miscarriage or stillbirth.

2.9 Consequences of depression in pregnancy

Though less well documented than postpartum depression, depression in pregnancy is also associated with adverse child outcomes. Antenatal depression places women at greater risk for inadequate prenatal care, alcohol use and poorer weight gain in pregnancy, all of which impact poorly on the unborn infant. Depression in pregnancy is associated with spontaneous pre-term births, slower foetal growth increased incidence of depression in infants when they are adolescents and with depressed infant behavior in general. Antenatal depression is also a strong predictor of postnatal depression, with women who are depressed in pregnancy having a heightened risk of developing depression during the postpartum (Mary., 2011).

Depression in pregnant women is often overlooked, partly because of a widespread misconception that pregnancy somehow provides protection against mood disorders. In reality, almost 25% of

cases of postpartum depression start during pregnancy, and depression may peak at that time. (Dalton, 2001, Evans et al, 2001, Glover et al, 2002, Grush et al, 1998, Miller et al, 2002, Oren, 2002).

Ignoring depression during pregnancy can be risky for both mother and child. Depressed women often take poor care of themselves. They may smoke, drink to excess, or neglect proper diet. And some research suggests that depression in pregnant women can have direct effects on the fetus. Their babies are often irritable and lethargic, with irregular sleep habits. These newborns may grow into infants who are underweight, slow learners, and emotionally unresponsive, with behavior problems such as aggression.

Unidentified and untreated depression can lead to detrimental effects on the mother and the child. Depressed women are more likely to have unhealthy practices during pregnancy and to have higher rates of poor nutrition, in part due to a lack of appetite, leading to poor weightgain during pregnancy and risking intrauterine growth. Depressed women are less concerned with prenatal care and feel less invested in the care toward their pregnancy. Women with depression also have increased pain and discomfort during their pregnancies, reporting worse nausea, stomach pain, shortness of breath, gastrointestinal symptoms, heart pounding, and dizziness

(Benute, Nomura, Reis, Fraguas, Lucia.,2010, Marcus SM, Heringhausen., 2009, Koken, Yilmazer, Cosar, Sahin, Cevrioglu, Gecici., 2008)

Untreated depression in pregnancy has been also associated with poor pregnancy and birth outcomes such as, maternal pre-eclampsia, low birth weight, smaller head circumference, increased risk of premature delivery, increased surgical delivery interventions, lower APGAR scores, and is considered to be the strongest risk factor for postpartum depression(Leigh .,2008, Felice, Saliba, Grech, Cox.,2004)

Maternal depression and outcomes- Chronic and severe maternal depression has potentially far-reaching harmful effects on families and children, its widespread occurrence can undermine the future prosperity and well-being of society as a whole.

When children grow up in an environment of mental illness, the development of their brains may be seriously weakened, with implications for their ability to learn as well as for their own later

physical and mental health. When interventions are not available to ensure mothers' well-being and children's healthy development, the missed opportunities can be substantial. Infants of mothers with postpartum depression may exhibit depression-like behaviors, e.g. fewer expressions of interest, excessive crying and inferior excitability prior to substantial mother-baby interactions (Horowitz, Briggs-Gowan ,Storfer-Isser, & Carter 2007., Ashman, Dawson, Panatogiotides, 2008). They have been reported to have inferior performance on the orientation, reflex, excitability and withdrawal clusters of the Brazelton Scale, which assesses neonatal behaviour.

"A mother's depression itself can make some of her worries about her child realistic. Infants are highly sensitive to a mother's sadness, silence, and inattentiveness. In one study, mothers of 3-month-old infants were asked to simulate depression for three minutes. They spoke in a monotone, remained expressionless, and avoided touching the child. Even at that age infants could respond to fleeting changes in their mothers' apparent mood. They looked away from their mothers and showed signs of distress, which continued for a time even after the women began to behave normally".

In the long run, child development may be affected. Children of depressed parents in general are highly vulnerable to depression, and long-term adjustment is sometimes a problem for the children of mothers with postpartum depression (Harvard, 2014).

2.10 Gender based violence-a risk factor for depression in pregnancy

Globally, at least one in three women has experienced some form of gender-based abuse during her lifetime (Heise.,1999). Millions of girls and women suffer from violence and its consequences because of their sex and their unequal status in society. Violence against women (often called gender-based violence) is a serious violation of women's human rights. Women who have experienced physical, sexual, or psychological violence suffer a range of health problems, often in silence. They have poorer physical and mental health, suffer more injuries, and use more medical resources than non-abused women.

The most common forms of violence against women are physical, sexual, and emotional abuse by a woman's husband or intimate partner. Surveys indicate that 10 to 58 percent of women have experienced physical abuse by an intimate partner in their lifetimes (Heise.,1999). Preliminary

results from a World Health Organization (WHO) Multi- Country Study on Women's Health and Domestic Violence indicate that in some parts of the world as many as one half of women have experienced domestic violence (García-Moreno., 2002).

Between 12 and 25 percent of women have been forced by an intimate partner or ex-partner to have sex at some time in their lives (WHO.,2002).Violence against women occurs in every country among all social, cultural, economic, and religious groups. At the societal level, violence against women is most common within cultures where gender roles are strictly defined and enforced; where masculinity is closely associated with toughness, male honor, or dominance; where punishment of women and children is accepted; and where violence is a standard way to resolve conflicts while abuse occurs in all socioeconomic settings, poverty and stress associated with poverty contribute to intimate partner violence (Jewkes., 2002).

Abused women often live in fear and suffer from depression, anxiety, and even post-traumatic stress disorder (Campbell J.,2002). Intimate partner abuse during pregnancy may be a more significant risk factor for pregnancy complications than other conditions for which pregnant women are routinely screened, such as hypertension and diabetes (Gazmararian., 1996). Abuse during pregnancy has been linked with delays in obtaining prenatal care, increased smoking and drug or alcohol abuse during pregnancy, poor maternal weight gain, and depression. Abuse of pregnant women is associated with unsafe abortion, miscarriage, stillbirth, low birth weight, and neonatal mortality.

Some examples of violence (United nations.,2002); Physical, sexual and psychological violence occurring in the family, include battering, sexual exploitation, sexual abuse of children in the household, dowry-related violence, marital rape, female genital mutilation and other traditional practices harmful to women, non-spousal violence and violence related to exploitation.

Confinement; this involves isolating a person from friends or family, restricting movements, deprivation of liberty or obstruction/restriction of the right to free movement.

Domestic violence is the most common form of GBV. It is often characterized by long-term patterns of abusive behavior and control (Watts, Zimmerman, 2002). Domestic violence usually refers to violence perpetrated by an intimate partner, though can also refer to violence perpetrated

by other family members. The term domestic violence can be used interchangeably with intimate partner violence.

Violence also occurs during the reproductive period and this include physical, psychological and sexual abuse by intimate male partners and relatives; forced pregnancies by partner; sexual abuse in the workplace; sexual harassment; rape; abuse of widows, including property grabbing and sexual cleansing practices (Vann, 2002).

2.11 Nature of gender-based violence

The root causes of sexual and gender-based violence lie in a society's attitudes towards and practices of gender discrimination, which place women in a subordinate position in relation to men. The lack of social and economic value for women and women's work and accepted gender roles perpetuate and reinforce the assumption that men have decision-making power and control over women, through acts of sexual and gender-based violence, whether individual or collective, perpetrators seek to maintain privileges, power and control over others.

Gender roles and identities are determined by sex, age, socio-economic conditions, ethnicity, nationality and religion. Relationships between male and female, female and female, and male and male individuals are also marked by different levels of authority and power that maintain privileges and subordination among the members of a society. The disregard for or lack of awareness about human rights, gender equity, democracy and non-violent means of resolving problems help perpetuate these inequalities (UN, 2002).

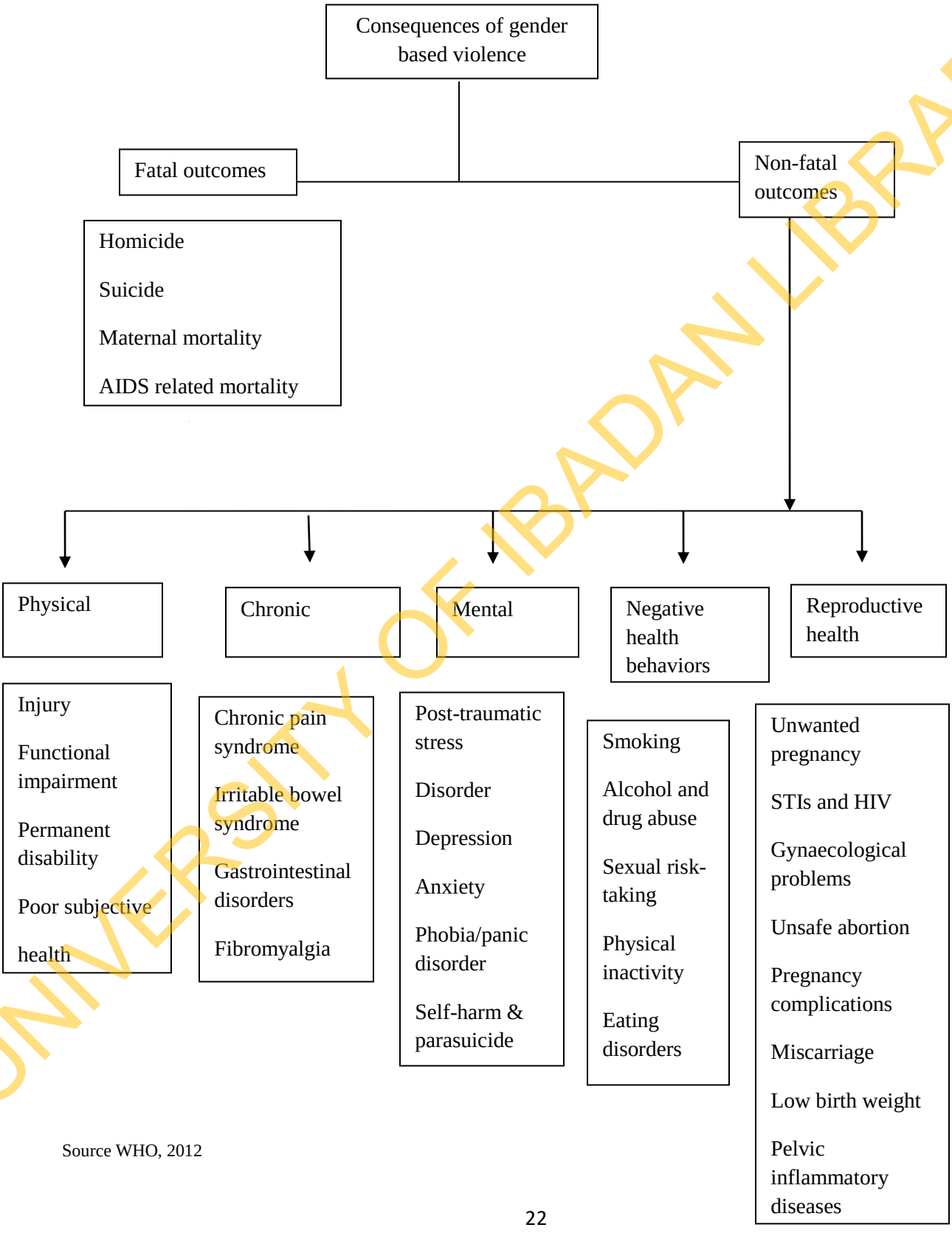
2.12 Consequences of Sexual and Gender-Based Violence

Victims/survivors of sexual and gender-based violence are at high risk of severe health and psycho-social problems, sometimes death, even in the absence of physical assault. Recent studies reveal that gender based violence is a significant cause of death and illness in women resulting from beatings during pregnancy, marital rape, sexual abuse of girls forced sterilization, abortion performed in unsanitary conditions, malnutrition, restricted access to health services and a number of other abuses(pro-hope international, 2005).

The potential for debilitating long-term effects of emotional and physical trauma should never be underestimated. Understanding the potential consequences of sexual and gender-based violence will help actors to develop appropriate strategies to respond to these after effects and prevent further harm.

The Emotional and psychological consequence of gender based violence include: Post traumatic stress, depression, anxiety, fear, anger, shame insecurity self blame self hate

Figure 2.2 Consequences of gender based violence



Source WHO, 2012

2.13 Intervention to prevent, detect and treat depression in pregnancy

In pregnancy, depression may be diagnosed if emotional disturbances occur in memory and concentration, the woman experiences weight loss and loss of appetite or wakes up early in the morning. Depression is likely if the woman feels a general loss of interest and energy, generalized guilt and hopelessness, and has thoughts of self-harm (Karacam, Ancel.,2009, Yanikkerem , Ay, Piro.,2013). There are effective treatments for depression. Depression can be reliably diagnosed and treated by trained health workers delivering primary health care.

Unidentified and untreated depression can lead to detrimental effects in both the mother and her child. Maternal infanticide and/or suicide are the most catastrophic effects of undertreated depression (Meyer & Oberman, 2001). Depressed women are less concerned with prenatal care and feel less invested in antenatal care. Women with depression may have increased pain and discomfort during their pregnancies, often complaining of myriad somatic concerns, sometimes leading to medical procedures. Untreated maternal depression during pregnancy has been associated with poor obstetric, fetal, and neonatal outcomes (Alder et al., 2007).

Although there are known, effective treatments for depression, fewer than half of those affected in the world (in some countries, fewer than 10%) receive such treatments. Barriers to effective care include lack of resources, lack of trained health care providers, and social stigma associated with mental disorders. Another barrier to effective care is inaccurate assessment. Even in some high-income countries, people who are depressed are not always correctly diagnosed, and others who do not have the disorder are occasionally misdiagnosed and prescribed antidepressants (WHO.,2012).

The selection of a treatment modality for depression in pregnant patients is generally a function of the severity of the disorder and its associated symptoms. The clinical management of depression during pregnancy should occur on a case-by-case basis. The decision-making process should center on informed decision making by the patient, with the assistance of her health care provider (Olfson, Marcus, Druss, et al.,2002).

Prevention programmes have been shown to reduce depression. Effective community approaches to prevent depression include school-based programmes for the prevention of child abuse, or

programmes to enhance cognitive, problem-solving and social skills of children and adolescents. Exercise programmes for the elderly are also effective in depression prevention (WHO.,2012). Exercise helps ease depression by releasing neurotransmitters and endorphins in the brain, which elevates mood. It reduces immune system chemicals that can worsen depression and increases body temperature, which has a calming effect.

Researchers have recently shown that acupuncture can alleviate depression symptoms. A 2010 study at the Stanford School of Medicine concluded that depression-specific acupuncture reduced depression symptoms in pregnant women who were diagnosed as being at risk of a major depressive disorder. This type of acupuncture targets the acupuncture points known to be associated with depression relief. Exercise and other healthy behaviors (good nutrition, sleep hygiene, reducing use of tobacco, alcohol, and other harmful substances) are recommended for helping improve mood symptoms(Cheung, Zuckerbrot, Jensen, Ghalib, Laraque, Stein.,2007).

Maintenance drug treatment is recommended for patients who are at risk for recurrent depression. For example, maintenance treatment should be offered to patients who have had more than three prior depressive episodes or who have chronic illnesses (American Psychiatric Association, 2010).

Psychotherapy has been used to treat depression for many years. This approach may include interpersonal therapy, which focuses on reducing strain in relationships, and cognitive-behavioral therapy, which identifies pessimistic thoughts and beliefs and works to change them. Support groups have consistently been proven to reduce symptoms and improve self-esteem in people suffering from depression. There are depression support groups everywhere, including online, and it is important to find one that the patient is comfortable participating in (American Psychiatric Association, 2010). These therapies, accompanied by the support of family and friends, might be enough to manage a woman's depression during her pregnancy. They should be the first choice of action for women who have been diagnosed with mild or moderate depression.

In cases of severe depression or if alternative therapies do not alleviate depression symptoms, many medical professionals believe that antidepressant drugs are the best choice to protect the health of mothers and babies. Pregnant women are justifiably concerned about the long-term effects of taking medication during pregnancy. Although all medications cross the placenta, retrospective studies

have shown that many of the major antidepressants on the market have been used by pregnant women with no known ill effects. Doctors are particularly comfortable prescribing the class of antidepressants known as selective serotonin reuptake inhibitors (SSRIs) to pregnant women. Evidence shows that the rate of infants with birth defects born to women who took SSRIs during pregnancy is the same as the rate of those who did not (American Psychiatric Association.,2010).
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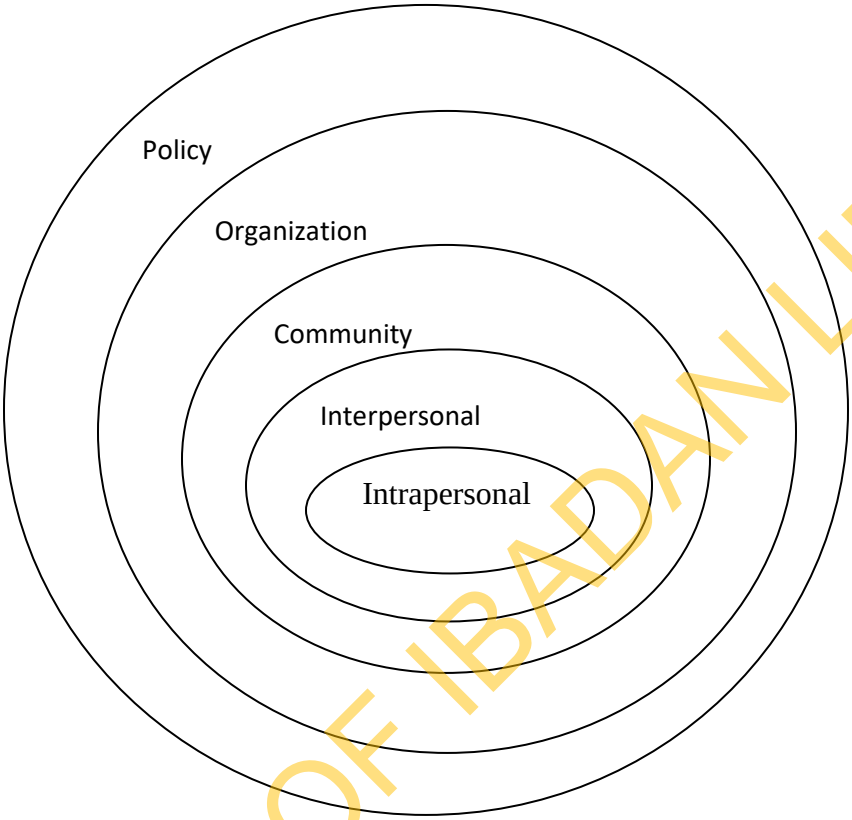
2.14 Diagnosis and Treatment

A number of options for the treatment of depression during pregnancy are available. Interpersonal psychotherapy (IPT) has been shown to be effective in the treatment of women diagnosed with prenatal depression (Bennett, Einarson, Taddio et al.,2004). Medicines and psychological treatments are effective in cases of moderate and severe depression.

Therapy and counseling are often beneficial too, as they will enable talk about stresses and work through any difficult emotional conflicts. The first trimester is often a difficult period with uncomfortable symptoms of morning sickness and tiredness. The early hormonal changes during this stage may also contribute to depression. However, antidepressants should be avoided at this stage, as this is the time that the baby's organs are developing, unless the mother's depression is severe. During this time, gathering assistance such as arranging for the family to help with the care of the older child, or household chores will be helpful. This will allow the woman to have much needed rest. In the second trimester, antidepressant use may be considered if the depression is at least of moderate severity, and is not improving with non-pharmacological methods. During the last few weeks of pregnancy, it is recommended that antidepressants be gradually tailed off. This is because some medications may cause withdrawal symptoms in the newborn (WHO.,2012). Studies have also noted the efficacy of electroconvulsive therapy (ECT) in the treatment of severely depressed and suicidal pregnant Patients (Ferril, Kehoc, Jacisin.,1992, Miller.,1994). Most notably, an increase in the use of pharmacotherapy for the treatment of depression during pregnancy has been noted in several studies.

Figure 2.3 The Ecological model

Conceptual frame-work



www.balancedweightmanagement.com/Socio-Ecological%20Model.jpg

Return to Ecosystem Management; Socio-Ecological Model- Looking Beyond the Individual

Jane Moore PhD., DHS-HS Office of Health Promotion& Chronic Disease prevention,

Department of Human Services- Health Services. Article written by Bob Wilson BS,DTR Copyright@2001-2014.

2.15 The Ecological model

Ecological model was used in this study to explain human behaviors as related to antenatal depression morbidity among pregnant women attending antenatal sessions in selected primary health care centers in Ibadan north local government area, Oyo state because it allows for the inclusion of risk and protective factors from multiple domains of influence.

Individual/ intrapersonal: includes biological and personal history factors that may increase the likelihood that an individual will be depressed or not. This may include past history of depression or sexual abuse.

Relationship/interpersonal: includes factors that increase risk of being depressed in pregnancy such as a result of relationships with peers, intimate partners and family members. These are a person's closest social circle and can shape their behavior and range of experiences. For example, lack of support from partners and other family members.

Community: refers to the community contexts in which social relationships are embedded – such as schools, workplaces and neighborhoods and seeks to identify the characteristics of these settings that are associated with people becoming victims of antenatal depression.
The society believes that pregnancy is always characterized by joy and accomplishments not acknowledging the fact that many women experience sadness or anxiety in these periods of their lives.

Society/organization and policy: includes the larger, macro-level factors that influence intimate partner violence such as gender inequality, religious or cultural belief systems, societal norms and economic or social policies that create or sustain gaps and tensions. A good counseling center with the right policies and standards would be effective in helping depressed pregnant women get over depression in a healthy way.

Building such a model offers a framework for understanding the complex interplay of all the factors that influence depression in pregnancy and can therefore provide key points for prevention and

intervention (Dahlberg & Krug, 2002).Also, to determine whether there is any policy in Nigeria that has implemented diverse primary care practices which has been previously tested and effective models of care for depression.

The ecological model also supports a comprehensive public health approach that not only addresses an individual's risk of becoming a victim antenatal depression but also the norms, beliefs and social and economic systems that create the conditions for antenatal depression to occur.

At the core of the approach is a strong emphasis on the multiple and dynamic interactions among risk factors within and between its different levels. For example, structural inequalities between women and men, family history, environmental factors, poverty are risk factors for antenatal depression. Clearly, however, they also manifest themselves within other levels – for example, in communities and relationships.

Using the ecological model also helps to promote the development of cross-sectoral prevention policies and programmes by highlighting the links and interactions between different levels and factors. As a result, when designing comprehensive approaches to control antenatal depression, the embedding of effective strategies into mainstream programmes addressing such issues will increase both their relevance and sustainability.

The ecological model can therefore be applied to this study by highlighting the interactions between different levels of the model and its relationship on antenatal depression.

The intrapersonal level; these are factors that are useful in deciding what influences people's beliefs, cultures, norms, knowledge towards depression. Questions 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 examined some of the factors that predisposed the pregnant women to depression in pregnancy. For example question 12 which asked if the pregnant women had been able to laugh and see the funny side of things.

The interpersonal level; this cognitive aspect includes factors that influence the relationship the respondents have with their significant orders and how the relationship determines whether a

pregnant woman experiences depression or not. This includes the influence of significant orders like the partners, the in-laws, the parents, family members, social circle, traditional or religious leaders. For example, is there any belief about male involvement whereby the partner helps the pregnant woman with house chores, encourage the pregnant woman to seek professional help when needed, understands her mood swings and sees a reason for appropriate intervention? Questions 22, 23, 24, 27, 28, 47, 48 examined the relationship of the respondents with their significant which could be risk factors for depression in pregnancy.

The community level; this model provided information about provision made by the community in addressing depression related problems, for example, if there are programmes on emotions for depressed women as a means of intervention. Questions 54, 57 examined the provisions made by the community.

The organization/policy; the ecological model seek to address this by getting information on what policy the government has on depression and the kind of intervention put in place for depression in pregnancy, if there government hospitals where depression can be diagnosed and with treatment provisions. There were no found documented policies on antenatal depression in Nigeria.

CHAPTER THREE

METHODOLOGY

3.1 Study design and scope of the study

Cross-sectional study design was used for this study with the appropriate instruments rightly suited to achieve the research objectives. A cross-sectional descriptive survey using quantitative research method was administered for this survey to seek information about the factors that predispose the target population to antenatal depression which included well structured questionnaire.

3.2 Description of study area

Ibadan North Local Government is one of the Local Government in Oyo state and was created by the Federal Military Government of Nigeria on 27th September, 1991. This Local Government was carved out of the defunct Ibadan Municipal Government along with others. The components of the Local Government cover area between Beere roundabout through Oke-Are to Mokola, Oke itunu and Ijokodo. The other components are areas from Beere roundabout to Gate, Idi-Ape to Bashorun and up to Lagos/Ibadan expressway, Secretariat, Bodija, University of Ibadan and Agbowo areas (Olusegun, 2001).

The Secretariat of the Local Government is presently and temporarily accommodated at Quarter 87 at Government reserved area at Agodi but the headquarters of the Local Government is Bodija. Ibadan North Local Government is bounded by other Local Governments. In the North, it is bounded by Akinyele Local Government Council. In the West by Ido Local Government Council and bounded in the East by Ibadan North East and Lagelu Local Governments respectively (Olusegun, 2001).

Ibadan North Local Government Area is located approximately on longitude 8°5' East of the Greenwich meridian and latitude 7°23' North of equators. According to the 2006 population census (provision result); it has a proportion of 306,763. The male population is given as 153,039 and female population as 153,756 (source ERN (National Bureau of Statistics).

Ibadan North Local Government Area comprises 12 wards and fourteen primary health centers.

This study was carried out in Ibadan North Local Government Council Area, which is made up of twelve wards. Each of these wards is made up of communities and areas. The list of the wards and communities were as follows:

Ward 1: Beere, Kannike, Agbadagbudu, Oke-Are, Odo-Oye

Ward 2: Ode-Oolo, Inalende, Oniyanrin and Oke Oloro

Ward3: Adeoyo, Yemetu,Oke-Aremo, and Isale-Alfa

Ward4: Itu taba, Idi-Omo, Oje-Igosun, Kube, Oke-Apon, Abenla, Aliwo/Total and NTA area

Ward 5: Bashorun, Oluwo, Ashi, Akingbola, Ikolaba, and Gate

Ward 6: This has only one large community-"Sao Area"

Ward 7: Oke-Itunu, Coca-cola, and Oremeji Areas

Ward 8: Sango and Ijokodo Areas

Ward 9: Mokola, Ago Tapa and Premier Hotel Areas

Ward 10: Bodija, Scretariat, Awolowo, Obasa and Sanusi

Ward 11: Samonda, Polytechnic, and University of Ibadan Areas

Ward 12: Agbowo, Bodija Market, Oju Irin, Barika and Iso Pako, Lagos/Ibadan Express road

These twelve wards are made up of 14 primary health centers namely:

Bodija health center

Barika health center

Agbowo health center

Yemetu health center

Abadina health center

Sango health center

Nitel health center

Cerehaid health center

Idi-ogungun health center

Sabo primary health center

Ashi health center

Oke-are health center

This local government consists of multi-ethnic nationalities predominantly dominantly by the Yoruba, Igbo, Edos, Urhobos, Itsekiris, Ijaws, Hausas, Fulani and foreigners who are from Europe, Asia and other parts of the world. The inhabitants are mostly traders, university and polytechnic lecturers, civil servants, students etc.

The Local Government also houses several educational institutions such as the premier university (University of Ibadan), University College Hospital (College of Medicine), The Polytechnic Ibadan and several private and public secondary and primary schools. This advantage puts Ibadan North Local Government Area ahead of other Local Government Areas in the aspect of educational facilities. The Local Government Area also houses several health care centers such as University College Hospital, Adeoyo Hospital and several Maternity Centers and dispensaries.

3.3 Study population

The target population consisted of pregnant women within the age-group 15 and 49 years as categorized by the National health demographic survey (NDHS, 2008) as the age fertility range. These women attended routine antenatal checkup at the selected primary health centers in Ibadan north local government area during the period of 9th and 27th September when the study was conducted.

3.4 Study Variables

The dependent variables of the study were prevalence, risk factors for antenatal depression and experience of violence, while the independent variables were the socio-demographic characteristics such as age, marital status, religion, level of education, level of income,

3.5 Recruitment of study participants

This study was conducted on all available pregnant women attending antenatal care sessions in selected primary health centers within Ibadan North local government. The sample size was determined with the use of records of total number of clients seen in each of the health facility; these records were obtained from the authorities in each of the health facility. The three primary health centers of interest were Farayola health center, L,adisa health center and Idi-ogungun health center.

3.6 Eligibility criteria

All pregnant women attended primary health centers within Ibadan North local government within the period of 9th and 27th September.

3.7 Inclusion criteria

The study involved pregnant women who attended antenatal care sessions and who are of reproductive age in the selected primary health centers in Ibadan north local government because the primary health centers are strategically located within the community, affordable and available.

3.8 Exclusion criteria

The study excluded:

1. Non pregnant women,
2. Women above 49 years and below 15 years of age
3. Women in labor or in their post-natal period.

3.9 Sample size determination

The sample size (n) was determined by using Lwanga and Lemeshow(1991) sample size formula:

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Where n=minimum sample size required

Z= confidence limit of survey at 95% (1.96)

P= Prevalence of antenatal depression in low and middle income country is 27.6% (Hobfoll, Ritter, Lavin et al.,1995)

d=absolute deviation from true value (degree of accuracy) = 5%

$$n = \frac{1.96^2 \times 0.724 \times 0.276}{0.05^2} = 307.06$$

Approximately 307

Therefore, the minimum sample size (n) is 307 which implies that a minimum of three hundred and seven respondents should be recruited, after which the non-response rate was calculated and the result shown below;

A non-response rate of 10% of 307 $(307 \times 10) \div 100 = 30.7$

30.7 non-response rate was then added to the calculated minimum sample in order to address any possible case of incomplete response. (30.7 + 307) = 337.7 approximately 338. Therefore, the sample size is 338.

3.10 Sampling techniques

A three staged sampling procedure was used in this study which was made up of three different stages.

- Stage 1: The 12 wards in Ibadan north local government were stratified into 3 based on the level of development (Transitory, peripheral and inner core).
- Stage 2: Simple random sampling was used to select one primary health center each from the 3 previously stratified wards.
- Stage 3: Proportionate sampling was then used to determine the total number of respondents to select in each of the health facility.

  All pregnant women in each of the primary health centers who came for antenatal care sessions during the period of 9th and 27th September 2014 were recruited into the study until allocated number of respondents were reached.

Records of estimated total numbers of patients who attend antenatal care sessions in each of the health facility were obtained before hand in each of the health facility.

Table 3.10;

Records of patients who attend antenatal care sessions in each of the heath facility

	Idi-ogungun primary health center	L.adisa primary health center	Farayola primary health center	Total
Estimated total of antenatal patients seen in a week	100	30	50	180

Table 3.11

Selection of total number of respondents from each of the health facility using proportionate random sampling

	Idi-ogungun primary health center	L.adisa primary health center	Farayola primary health center	Total
Total number of respondents selected from each health facility	(100 × 338) ÷ 180 =188	(30× 338)÷ 180 = 56	(50 × 338)÷ 180 = 94	338

All the antenatal care patients who came for antenatal care sessions between 9th and 27th September 2014 were selected for participation in this study after getting informed consent from them.
Collection of data was done for 3 consecutive weeks in each of the selected health facility in order to meet up with the sample size.

3.11 Instrument for data collection

The Edinburgh Postnatal Depression Scale (EPDS) is a 10-item questionnaire that was developed to identify women who have postnatal depression (Cox, Holden, Sagovsky., 1987). Items of the scale correspond to various clinical depression symptoms, such as guilt feeling, sleep disturbance, low energy, and suicidal ideation. The EPDS may be used within 8 weeks postpartum and it also can be applied for depression screening during pregnancy.

The Edinburgh Postnatal Depression Scale is a widely used depression screening tool, which has been adapted and validated in many languages including English, Spanish, Arabic, Hindi, Turkish, Swedish, German, French, Dutch amongst others (Garcia-Esteve, Ascaso, Ojuel, Navarro.,2003).The Edinburgh Postnatal Depression Scale was first developed by Scottish health centers in Edinburgh and Livingston (Vivilaki, Dafermos, Kogevinas, Bitsios, Lionis.,2009).

The pregnant women completed both the English and Yoruba version of the Edinburgh Postnatal Depression Scale, a 10-item self report questionnaire in which women were asked to rate how they

felt in the previous seven days. The EPDS had been validated among postpartum women in several countries and in Nigeria (Adewuya, 2005).

Data collection instrument was structured questionnaire which was used to collect socio economic and demographic characteristics and for the assessment of risk factors associated with antenatal depression.

The questionnaires contained five different sections.

Socio-demographic characteristics- these variables included age, sex, educational level, marital status, occupation, ethnicity, religion, income per month, type of marriage.

Assessment of prevalence of antenatal depression among pregnant women in Ibadan north local government; this section assessed the prevalence using The Edinburgh Postnatal Depression Scale (EPDS) which is a 10-item questionnaire that was developed to identify women who have postnatal depression. Items of the scale correspond to various clinical depression symptoms, such as guilt feeling, sleep disturbance, low energy, and suicidal ideation.

Assessment of risk factors associated with depression in depression; This section included relationship with partners and family members, intention to get pregnant, partners support to seek professional help, history of miscarriages, still birth and prolonged labor and so on.

Assessment of gender based violence in pregnancy- a risk factor for antenatal depression; This section included types of violence which could be physical violence, domestic violence or emotional violence. The respondents were asked if they had been hit or slapped by their partners while pregnant, whether they are allowed to make contributions to the relationship and so on.

Assessment of stressful life events that could predispose to depression in pregnancy; this section assessed experience of financial difficulties, experience of housing issues, loss of jobs, death of close relatives and so on.

Responses were obtained using administered questionnaires. The questionnaires were interviewers' administered as majority of the respondents could not fill the questionnaires themselves.

The data were collected with the support of research assistants who were given training on all the necessary aspects of the study including the collection of the quantitative data.

3.12 Validity and reliability of instruments

The following steps were taken to ensure the validity of the instruments in terms of expected measures, contents, strength and accuracy; internal validity was ensured through drafting of instrument using relevant literatures and review of instrument by peer-review, in-house pretesting by some lecturers in the department of Health Promotion and Education and finally by the project supervisor, after which the instrument was then pretested and modified**.**

Following review and approval by the project supervisor, the instruments were pre-tested among thirty-one pregnant women irrespective of their trimester in pregnancy; these women were recruited from the antenatal clinic of Moniya primary health center, Akinyele local government which is similar to the selected primary health centers in Ibadan north local government area as regards population, characteristic and socio-demography. The pretest excluded non pregnant women and also excluded women in labor or in post-natal period who are not part of the main study. They were asked about the simplicity of each question, whether they understood the questions or not and suggested removal of some questions.

The pregnant women were first administered a pro forma questionnaire about demographic details {age, marital status, level of education and so son} after which they completed the translated Yoruba version of the Edinburgh Postnatal Depression Scale, a 10-item self report questionnaire in which women were asked to rate how they felt in the previous seven days, also, the questionnaire assessed the risk factors associated with antenatal depression.

The instrument was revised after the pretest as some questions were removed and some added.

The question" Have you experienced or are you experiencing any form of violence was removed". Questions on violence were broadened and asked objectively, types of violence listed out with yes or no options.

The questionnaire also laid more emphasis on stressful life events as various examples were listed and the initial question which was "Have you experienced some kind of stressful life events like death of a close relative or friends, housing issues" was reframed and thereby replaced.

The section on the assessment of knowledge of pregnant women towards depression and questions on help-seeking behavior of respondents were also removed as most of the respondent couldn't even measure nor identify depression and they were replaced with risk factors associated with depression and experience of violence in pregnancy.

According to the pretest results, 18 out of 31(58%) of the pregnant women had scores above 10 therefore the prevalence was 58%. Also, the factors associated with depression included, age, marital status, level of income, and support from partner. Lack of a partner to provide may be a factor responsible for antenatal depression. More still, pregnant women between the ages 18 and 25(mostly not married) recorded high scores using the EPDH scale, reason being that in a traditional African setting, any woman who becomes pregnant at a relatively young age while not having a husband is viewed promiscuous and single parenting not socially acceptable. Also, pregnant women from polygamous homes also recorded high scores which may also be due to lack of partner support and majority of the pregnant women had financial difficulty another significant risk factor for antenatal depression. In conclusion, the pretest had shown that depression is quite prevalent among the target respondent who could be regarded as representatives of the pregnant women in the community. Factors responsible included marital status, age, level of income, lack of support from partner.

Reliability was achieved through close supervision of the field assistants. Reliability of the research instruments was ascertained by analysis of the data obtained from the pre-testing exercise with a reliability coefficient of 0.72

3.13 Data collection procedures

Data collection for the main study took place within the period of 9th and 27th of September, 2014. The questionnaires were interviewers administered; data was collected after research instruments had been pretested. The respondents were interviewed using a revised edition of the pre-tested and structured questionnaire. The questionnaire consisted of five different sections which was translated to Yoruba from English, for appropriateness of language and was translated back to English for verification. Discussions concerning the subject matter were prevented until the respondents had completed the questionnaires.

3.14 Data analysis

Serial numbers was assigned to the administered copies of the questionnaire for easy identification, correct data entry, analysis and recall of any instrument with one problem or the other. The completed cycles of the questionnaire were manually sorted out, cleaned, coded and a coding guide was developed which was used to code each question before data entry. Data was entered and managed using SPSS version 20.0 statistical software. Descriptive statistics such as percentage, mean, frequencies and standard deviation were used to summarize dependent and independent variables. For univariate/bivariate analysis, chi-square test was utilized for cross-tabulations between the dependent and independent variables such as age and the category of depression. The confidence level was set at 0.05 (95%) as recommended for most descriptive researches (Field, 2005). Descriptive statistics such as percentages and frequencies were used to describe the data while tables and charts were used to present the results. Some key variables were cross-tabulated and relationships between variables were deterned through the use of Chi-square statistics.

Overall assessment was done by total score, which was determined by adding together the scores for each of the 10 items. Higher scores indicated more depressive symptoms (Bergink, Kooistra, Lambregtse, Berg , Wijnen, Bunevicius, van Baar, 2010).

Prevalence of depression was determined on a 30-point scale; scores of ≤10, >11 were categorized as not depressed and depressed respectively, this is in line with the Edinburgh postnatal depression scale which states that scores above 10 indicate various severity of depressive illnesses.

Questions on risk factors, experiences of gender based violence and stressful life events were asked objectively with either a 'yes or no' answer and the results were further categorized using a 12-point scale, 18-point scale and a 10-point scale for risk factors, experiences of gender based violence and stressful life events respectively. A total of scores ≤6, >7 were categorized to have low exposure to the risk factors associated with antenatal depression and high exposure to antenatal depression respectively. A total of scores ≤7 were categorized as low exposure to gender-based violence in pregnancy and >18 were categorized as high exposure to gender-based violence, also A total of scores ≤4 were categorized as having low exposure to stressful life events, >5 were categorized as having low exposure to stressful life events

3.15 Ethical consideration

Informed consent was obtained from each participant after explaining to them the aim and objectives of the study. Permission was also obtained from the University authority, to carry out the study and also from the stakeholders in the hospitals.

The trust of the participants was gained by assuring them that there was no means of identification on the forms. Ethical issues like confidentiality, opportunity to decline interview at any stage and non-exposure to risks were also discussed with each of the respondents. Only respondents who were able to give informed consent (that is those who were able demonstrate their understanding of the objectives and aim of the study and implication of their role in it) were recruited into the study. At any point in time, any participant who wished to withdraw was free to do so.

Anonymity of any information was assured and participation was voluntary and free of all forms of coercion. Respect for privacy and confidentiality of respondents was assured. All information given by the participant are kept secret and in a confidential place and would not be used for non-research purposes.

These pregnant women need to understand the characteristics, and conduct developmentally appropriate assessments, of depressive symptoms. These women would appear to be targets for early intervention such as evidence-based interventions for stress reduction; mood regulation treatments such as cognitive behavioral therapies, pharmacological treatments, and follow-up care during postpartum to prevent a range of adverse outcomes for mother, child, and family.

Beneficence to participants: Although there are no direct and immediate benefits to participants, the information gathered from this study can be forward to the right authorities that can implement counseling and treatment centers for women who are diagnosed of depression in pregnancy, thus improving their quality of life.

3.16 Limitations of the study

The researcher discovered that majority of the pregnant women were reluctant in telling their actual age and thereby had to probe further before they could tell their real ages. Another limitation encountered in the study was that most of the women found it difficult to answering questions related to violence by their partners, an extra mile had to be undergone before they could answer the question.

3.17 Non-malificience to participants

The research did not require collection of invasive materials. Therefore, safety of the participants was guaranteed.

CHAPTER FOUR

RESULTS

4.1.0 Socio-economic characteristics

A total of 323 respondents participated in the study (Table 4.1). Respondents interviewed were all pregnant women. The ages of the respondents ranged from 17-44 years of age with a mean age of 28.23±5.86. Majority 178 (55.1%) of the respondents were between 25-34 years of age, few 87 (26.9%) of respondents were within the age group 15-24 years of age and the remaining respondents were 35years of age and above 58(18.0%).

Majority of the respondents belonged to the Yoruba ethnicity 259 (80.2%), followed by Hausa ethnic group 37 (11.5%), few 22 (6.8%) belonged to the Igbo ethnicity and others include 1(0.3%) which belonged to the Efik ethnicity, 1(0.3%) Edo, 1(0.3%) Fulani, 1(0.3%) ethnic group, 1(0.3%) Urhobo and 1(0.3%) are from Delta.

Many of the respondents (50.5%) were Muslims, closely followed by some of the respondents being Christians (49.2%) and the least being from the African tradition religion (0.3%). Majority of the respondents (52.0%) had secondary education as their highest level of education; few (23.2 %) had primary education as their highest level of education, followed by 22.3% of respondents with tertiary level of education and the least (2.5%) with no formal education.

Some of the respondents were traders 161(46.7%), 68 (21.1%) were artisans, few 35(10.8%) were government/private workers, 32 (9.9%) were housewives, 21(6.5%) were either students or unemployed, 16 (5.0%) were self-employed.

Majority 250 (77.4%) of the respondents were married, 70 (21.4%) were single, 2 (0.6%) were either separated or divorced, 1 (0.3%) was widowed. The result is presented in table 4.1;

Table 4.1.0 Table showing relationship between the number of study respondents and the socio-demographic characteristics.

N=323

Socio-demographic characteristics

Variables	No(%)
Age (years)	
15-24	87(26.9)
25-34	178(55.1)
35+	58(18.0)
Ethnic group	
Yoruba	259(80.2)
Hausa	37(11.5)
Igbo	22(6.8)
Others	5(1.5)
Religion	
Christianity	159(49.2)
Islam	163(50.5)
African tradition	1(0.3)
Highest level of education	
No formal education	8(2.5)
Primary education	75(23.2)
Secondary education	168(52.0)
Tertiary education	72(22.3)
Occupation	
Trading	161(46.7)
Artisan	68(21.1)
Housewife	32(9.9)
Government/Private worker	35(10.8)
Self-Employed	16(5.0)
Student/Unemployed	21(6.5)
Marital status	
Married	250(77.4)
Widowed	1(0.3)
Separated/divorced	2(0.6)
Single	70(21.7)

Of the total number of respondents three hundred and twenty three (323), majority 317 (98.1%) do not smoke while few 6(1.9%) of the respondents smoke, meanwhile, (3.4%) of the respondents take alcohol while majority (99.6%) of the pregnant women do not take alcohol.

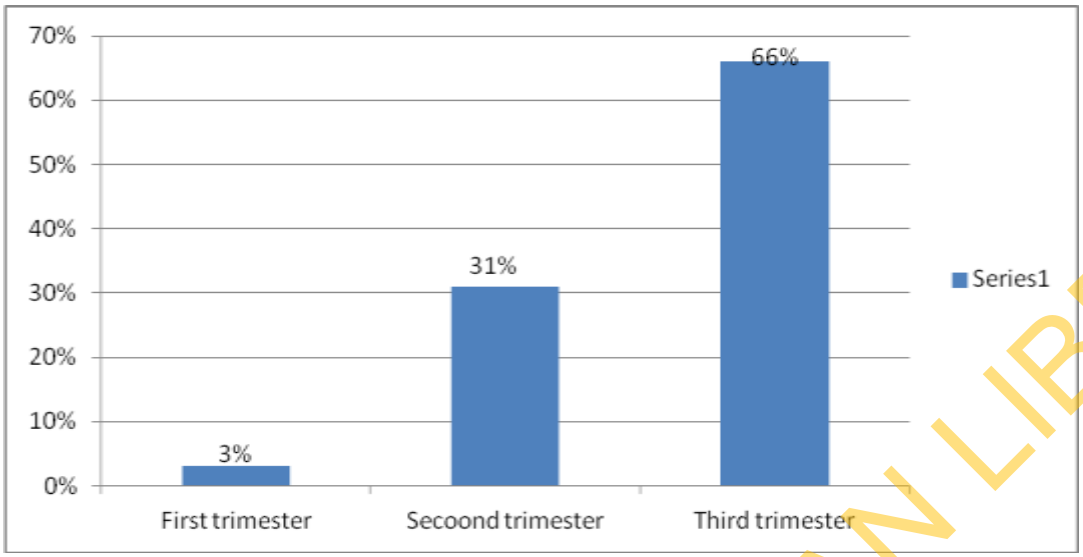
Majority of the pregnant women 214 (66.3%) were in their third trimester, few 99 (30.7%) were in their second trimester and 10 (3.1%) of the respondents were in their first trimester. The result is shown in table 4.1.1

Table 4.1.1 A table showing relationship between the number of respondents and their social habits.

Smoking and use of alcohol

Smoking and use of alcohol	No. (%)
Smoking	
Yes	6(1.9)
No	317(98.1)
Total	**323(100.0)**
Use of Alcohol	
Yes	11(3.4)
No	312(96.6)
Total	**323(100.0)**

Figure 4.1 Trimester in pregnancy



Timing of pregnancy

4.2.0 Prevalence of antenatal depression

Responses of the pregnant women to the statement **"I have been able to laugh and see the funny sides of things"** Majority 180 (55.7%) of the respondents had been able to laugh and see the funny sides of things "As much as they always could", Few 69(21.4%) of the respondents said "Not quite so much now" 40(12.4%) answered "Definitely not so much now" and 34(10.5%) said "not at all"

When the respondents were asked to respond to the second statement on the scale which is **"I have looked forward to enjoyment with things"** Some 155(48.0%) of the respondents said" As much as I ever did ", Few 73(22.6%) of the pregnant women's responses were "Definitely less than I used to do" while 50(15.5%) said "Rather less than I used to do" and 45(13.9%) answered "Hardly at all"

These are the responses of the respondents to the statement **"I have blamed myself unnecessarily when things went wrong"** Some 132(40.9%) of the respondents said "Yes, some of the time", few 84(26.0%) said "Yes most of the time", few 67(20.7%) answered "No, never", 40(12.4%) ticked the option "Not very often"

The respondents' responses to the statement **"I have been anxious or worried for no good reason"** are as follows. 111(34.4%) said "No, not at all", 100(31.0%) answered "Yes, sometimes" 59(18.3%) took the option "Yes, very often" and 53(16.4%) of the pregnant women said "Hardly ever"

Responses of the pregnant women to the statement **"I have felt scared or panicky for no very good reason"** Few 111(34.4%) of the respondents said "No, not at all", also, few 96(29.7%) went for the option "Yes, sometimes", 59(18.3%) answered "Yes, quite a lot" and 57(17.6%) said "No, not much"

When the pregnant women were asked to respond to the statement **"Things have been getting on top of me"**, the responses given are as follows; 118(36.5%) pregnant women said " No, I have been coping as well as ever ", 79(24.5%) went for the option " No, most of the time I have coped quite well ", 67(20.7%) respondents answered " Yes, sometimes I haven't been coping as well " while 59(18.3%) "Yes, most of the time I haven't been able to cope at all"

These are the responses of the respondents to the statement**" I have been so unhappy that I have difficulty sleeping"**; A large number116 (36.5%) of the respondents said "No, not at all ", followed

by 72(22.3%) that answered "Yes, sometimes ", 68(21.1%) said " Yes, most of the time "and 67(20.7%) of the pregnant women said "Not very often".

When the respondents were asked to respond to the statement **"I have felt sad or miserable"**, majority of the respondents 124(38.4%) said " Not very often", 78(24.1%) pregnant women said "No, not at all", 77(23.8%) took the option" Yes, quite often " and the least of the respondents' population answered 44(13.6%)" Yes, most of the time"

Responses to the statement **"I have been so unhappy that I have been crying"**, most of the respondents Some 128(39.6%) of the respondents answered" No, never", 71(22.0%) respondents said "Only occasionally", 66(20.4%) of the respondents answered " Yes, most of the time " while 58(18.0%) said "Yes, quite often"

"The thought of harming myself has occurred to me", majority of the respondents 286(88.5%) answered "never", 11(3.4%) respondents said the thought of harming themselves have either "sometimes" or "hardly ever" occurred to them while 15(4.6%) said the thought of harming themselves occur to them quiet often("yes, quite often"). It was also observed that 37 out of 323 (11.4%) respondents have had the thought of harming themselves in the last seven days. The results are presented in table 4.2.0

Table 4.2.0 Responses of the pregnant women to depression statements

I have been able to laugh and see the funny sides of things	No.(%)
As much as I always could	180(55.7)
Not quite so much now	69(21.4)
Definitely not do much now	40(12.4)
Not at all	34(10.5)

I have looked forward to enjoyment with things Variables	No. (%)
As much as I ever did	155(48.0)
Rather less than I used to do	50(15.5)
Definitely less than I used to do	73(22.6)
Hardly at all	45(13.9)

I have blamed myself unnecessarily when things went wrong	No.(%)
Yes most of the time	84(26.0)
Yes, some of the time	132(40.9)
Not very often	40(12.4)
No, never	67(20.7)

I have been anxious or worried for no good reason	No.(%)
No, not at all	111(34.4)
Hardly ever	53(16.4)
Yes, sometimes	100(31.0)
Yes, very often	59(18.3)

I have felt scared or panicky for no very good reason	No.(%)
Yes, quite a lot	59(18.3)
Yes, sometimes	96(29.7)
No, not much	57(17.6)
No, not at all	111(34.4)

Things have been getting on top of me	No.(%)
Yes, most of the time I haven't been able to cope at all	59(18.3)
Yes, sometimes I haven't been coping as well	67(20.7)
No, most of the time I have coped quite well	79(24.5)
No, I have been coping as well as ever	118(36.5)

I have been so unhappy that i have difficulty sleeping	No.(%)
Yes, most of the time	68(21.1)
Yes, sometimes	72(22.3)
Not very often	67(20.7)
No, not at all	116(36.5)

I have felt sad or miserable	No.(%)
Yes, most of the time	44(13.6)
Yes, quite often	77(23.8)
Not very often	124(38.4)
No, not at all	78(24.1)

I have been so unhappy that I have been crying	No.(%)
Yes, most of the time	66(20.4)
Yes, quite often	58(18.0)
Only occasionally	71(22.0)
No, never	128(39.6)

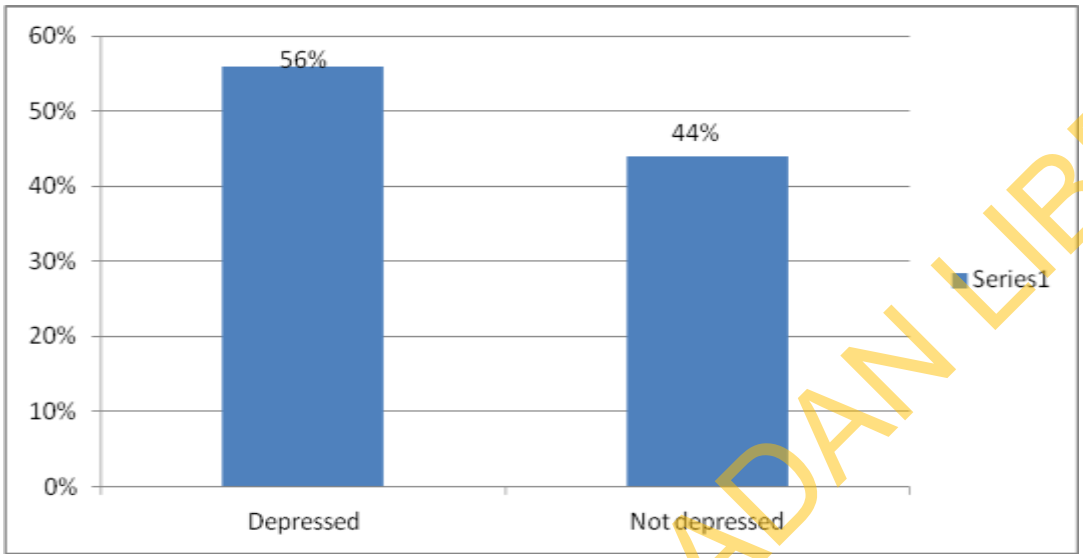
The thought of harming myself has occurred to me	No.(%)
Yes, quite often	15(4.6)
Sometimes	11(3.4)
Hardly ever	11(3.4)
Never	286(88.5)

Table 4.2.1 Result of categorization of depression among pregnant women

A total of 323 respondents were classified as either depressed or not depressed using the Edinburgh postnatal depression scale, pregnant women with scores above 10 out of a total score of 30 were classified as being depressed while individuals with scores below 10(0-10) were classified not depressed.

Each question on the scale attracts a score of 3 and the total number of questions on the scale is 10, therefore the total score is 30 and it was clearly stated on the scale that any respondents that scored above 10 should be classified as depressed and below 10 should be classified as not depressed, although a clinical test should be repeated to know the severity of depression of those whose scores are above 10. The result is shown in table 4.2.1;

Figure 4.2.1 Categorization of depression among pregnant women



4.3.0 Responses of the pregnant women to the assessment of risk factors associated with depression in pregnancy

Majority 296(91.6%) of the respondents have good relationship with their parents and other family members while few 27(8.4%) do not have a good relationship with their parents and other family members. Most 288(89.2%) of the respondents have a good relationship with their spouses while 35(10.8%) respondents reported that they do not a good relationship with their spouses. Many 177(54.5%) of the respondents do not get help from their partners when it comes to house chores and in taking care of the children.

Majority 200(61.9%) of the respondents said their pregnancy was intended. Few 106(32.8%) of the pregnant women indicated that they had difficulty becoming pregnant. When the respondents were asked if they have joint and concrete decisions with their partners towards delivery, most 208(64.4%) respondents said yes while less than half of the pregnant women 115(35.6%) said they do not have joint decisions with their husbands towards delivery, majority 209(64.7%) of the respondents get the encouragement to seek professional help when needed while the remaining 114(35.3%) respondents do not get the encouragement to seek professional help needed.

Few 60(18.6%) of the respondents had experienced miscarriages or stillbirths, Majority of the pregnant women 270(83.6%) had never experienced prolonged labor in the past, but few 53(16.4%) had experienced prolonged labor in the past.

Most of the respondents 202(52.5%) said they were anxious about being able to cope with the expected baby. Few of the respondents 65(20.1%) had health problems in the pregnancy, few 14(4.3%) of the pregnant women rely on drugs, alcohol or other substances to help deal with things, meanwhile majority 309 (95.7%) of the respondents do not rely on drugs, alcohol or other substances in their daily activities. The result is presented in table 4.3.0;

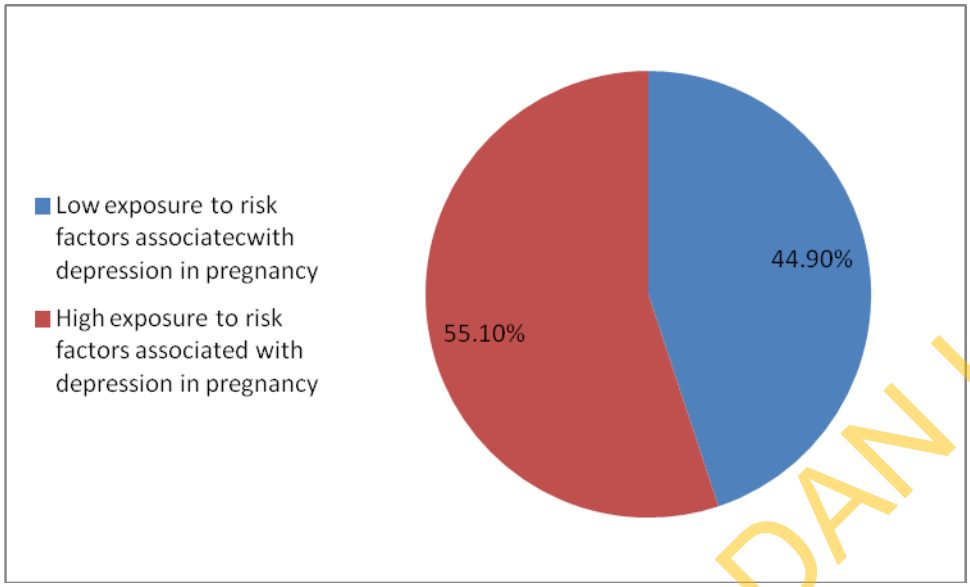
Table 4.3.0 A table showing the responses of the pregnant women to the assessment of risk factors associated with depression in pregnancy

Statement	Response	
	Yes Number (%)	No Number (%)
Good relationship with parents and other family members	296(91.6)	27(8.4)
Good relationship with spouse	288(89.2)	35(10.8)
Getting help from husband with house chores and in taking care of the children	146(45.2)	177(54.5)
Intention to get pregnant	200(61.9)	123(38.1)
Difficulty becoming pregnant	106(32.8)	217(67.2)
Joint and concrete arrangements with partner towards delivery?	208(64.4)	115(35.6)
Encouragement to seek professional help when needed	209(64.7)	114(35.3)
Previous episodes of miscarriage or still birth	60(18.6)	262(81.1)
Experienced prolonged labor in the past	53(16.4)	270(83.6)
Anxious about being able to cope with the expected baby	202(62.5)	121(37.5)
Health problems in pregnancy	65(20.1)	258(79.9)
Rely on drugs, alcohol or other substances to help with daily activities	14(4.3)	309(95.7)

4.3.1 Categorization of the risk factors for antenatal depression

The risk factors for antenatal depression were categorized using a 12-point scale. About half 145(44.9%) of the respondents had low exposure to risk factors associated with antenatal depression while many 178(55.1%) had high exposure to the risk factors associated with antenatal depression.

Figure 4.3.1 Categorization of the risk factors for antenatal depression



4.3.2 Categorization of respondents' level of exposure to risk factors associated with antenatal depression and experience of depression

A total of 145 respondents were categorized as having low exposure to the risk factors associated with antenatal depression out of which 51(35.9%) were found not depressed and 94(51.9%) were found to be depressed. Also, a total of 178 pregnant women were categorized as having high exposure to the risk factors for antenatal depression out of which 91(64.1%) were not depressed and 87(48.1%) were depressed.

The relationship between category of risk factors associated with depression and experience of depression is statistically significant(X^2=8.253, df=1, Pvalue=0.004).

Table 4.3.2 Categorization of respondents' level of exposure to risk factors associated with antenatal depression and experience of depression

	Experience of depression					
	Not depressed (%)	Depressed (%)	Total	X^2	p-value	df
Level of exposure to risk factors						
Low exposure	51 (35.9)	94(51.9)	145	8.253	0.004	1
High exposure	91(64.1)	87(48.1)	178			
Total	**142**	**181**	**323**			

4.4.0 Gender-based violence experience

4.4.1 Physical violence

Few 26(8.0%) of the respondents had been hit with fists by their partners while pregnant, also, few 9(2.8%) pregnant women have had their partners hit them by a hard object or anything that could hurt them, meanwhile, 8(2.5%) of the women said that their partners had kicked them while pregnant. Few 20(6.2%) had been punched by their partners while pregnant. 25(7.7%) pregnant women had been slapped by their partners while pregnant, 13(4.0%) out of 323 respondents had been beaten by partners in pregnancy meanwhile most 310(96.0%) of the respondents indicated that their partners had never beaten them in pregnancy.

About one-quarter 76(23.5%) of the pregnant women had been dragged by their partners while pregnant. Few 15(4.6%) reported that their partners had thrown things and them when angry while majority 308(95.4%) indicated that there partners had never thrown things at them when pregnant. Only 4(1.2%) of the respondents said they had been hit by their partners relative while pregnant.

TABLE 4.4.1 Experience of physical violence

Statement	**Responses**
Physical violence	Yes Number (%)
Ever been hit by partner with his fists while pregnant	26(8.0)
Ever been hit by partner with a hard object or anything that could hurt while pregnant	8(2.8)
Ever kicked by partner while pregnant	9(2.5)
Ever punched by partner while pregnant	20(6.2)
Ever slapped by partner while pregnant	25(7.7)
Ever been beaten by partner while pregnant	13(4.0)
Ever been dragged by partner while pregnant	76(23.5)
Ever threatened by partner with a knife while pregnant	15(4.6)
Partner ever throw things at you when angry while pregnant	15(4.6)
Partners relative ever hit you while pregnant	4(1.2)

4.4.2 Experience of psychological violence

Most 210(65.0) of the respondents had been yelled at by their husbands while pregnant, about half 160(49.5%) of the pregnant women admitted to the fact that their partners had called them names in pregnancy, also, more than half 178(55.1%) of the pregnant feel interrupted by their partners. When asked if the respondents feel criticized by their partners, few 110(34.1%) said they feel criticized by their partners. Few 33(10.2%) of the respondents said their partners keep them away from family and friends while majority 290(89.8%) of the pregnant women indicated that their partners do not keep them away from family and friends. Few 121(37.5) of the respondents had felt unsecure while pregnant. Many 182(56.3%) of the respondents reported that their husband minimized their contributions to the relationship.

Table 4.4.2 Experience of psychological violence

Experience of psychological violence	Yes Number (%)
Ever been yelled at by partner while pregnant	210(65.0)
Ever been called names or worthless by partner while pregnant	160(49.5)
Ever been interrupted by partner while pregnant	178(55.1)
Ever been criticized by partner while pregnant	110 (34.1)
Partner ever minimized contribution to relationship while pregnant	182(56.3)
Ever been kept away by partner from family or friends while pregnant	33(10.2)
Have you ever felt unsecure in this pregnancy	121(37.5)

4.4.3 Experience of sexual violence

Few 84(26.0%) of the respondents had been forced to have sex by their partners while 239(74.0%) of the pregnant women indicated that their partners had never forced them to have sex while pregnant.

Table 4.4.3 Experience of sexual violence

	Yes Number (%)
Ever been forced by partner to have sex with them	84(26.0)

4.5.0 Assessment of stressful life events that could lead to depression in pregnancy

Few 85(23.6%) of the respondents had recently experienced death of a close relative or friend in recent times. Many 182(56.3%) of the respondents were experiencing financial difficulties while few 40(12.4%) of the respondents said they were experiencing housing problems, few 34(10.5%) had lost their jobs in recent times and 16(5.0%) had experienced one or another form of natural disaster be it flood or fire. The result is presented in table 4.5.0;

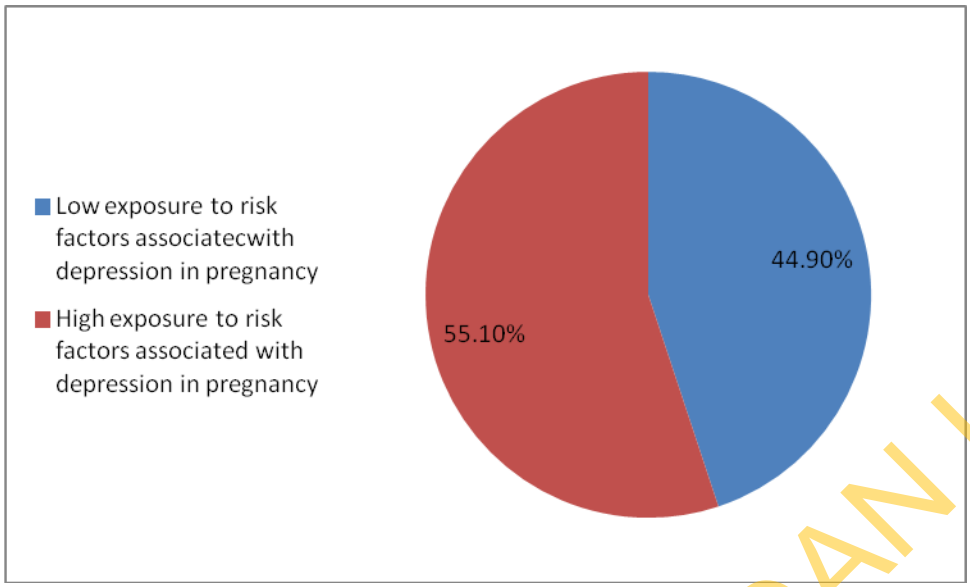
Table 4.5.0 Experience of stressful life events

Statement	Response Yes Number(%)
Experienced death of a close relative or friend recently?	85(23.6)
Experienced housing problems?	40(12.4)
Experienced financial difficulties?	182(56.3)
Recently loss of job?	34(10.5)
Experienced any form of natural disaster recently like flood, fire outbreak?	16(5.0)

4.5.1 Categorization of exposure to stressful life events

The exposure of respondents to stressful life events was categorized using a 10-point scale. Majority 296(91.6%) of the respondents had low exposure to stressful life events while few 27(8.4%) of the respondents had high exposure to stressful life events

Figure 5.5.1 Categorization of exposure to stressful life events



4.5.2 Categorization of respondents' level of exposure to stressful life events and experience of depression

A total of 296 respondents were categorized to have low exposure to stressful life events out of which 138(97.2%) were not depressed and 158(87.3%) were depressed, meanwhile a total of 27 have high exposure to stressful life events of which 4(2.8%) were not depressed and 23(12.7%) were depressed.

The relationship between exposure to stressful life events associated with depression and experience of depression is statistically significant(X^2=10.161, df=1, Pvalue=0.01).

Table 4.5.2 Categorization of respondents' level of exposure to stressful life events and experience of depression

	Experience of depression					
	Not depressed (%)	**Depressed (%)**	**Total**	**X^2**	**p-value**	**df**
Exposure to stressful life events						
Low exposure to stressful life events	138(97.2)	158(87.3)	296	10.161	0.01	1
High exposure to stressful life events	4 (2.8)	23 (12.7)	27			
Total	**142**	**181**	**323**			

4.6.0 TEST OF HYPOTHESIS

4.6.1 Relationship between demographic characteristics (age, level of education) of respondents and experience of depression in pregnancy

The first hypothesis stated that there would be no significant relationship between the demographic characteristics of respondents (age, level of education, religion and ethnicity) and experience of depression pregnancy.

Respondents within age group 24-35years of age had the highest frequency of depression 95(53.4%) compared to pregnant women within the age-group 15-24years with a frequency of 54 (62.1%) and respondents who are 35+ years had the least frequency 32(55.2%). Age of respondents was not statistically significant with experience of depression in pregnancy

(X^2=1.816, df = 2, p value =0.40).

Respondents with secondary education were found with the highest frequency and percentage of experience of depression. A total of 168 respondents had secondary education as their highest level of education, of which 94(51.9%) were classified depressed. Also, out of 75 respondents whose highest level of education were primary education, 45(24.9%) were depressed, a total of 72 respondents had tertiary education has their highest level of education and 34(23.9) were not depressed and the 38(21.0) were depressed, the population of respondents in this category with the lowest frequency is the category with no formal education, 8 respondents had no formal education out of which 4(2.8%) were not depressed while 4(2.2) were found to be depressed. Therefore, the relationship between level of education and experience of depression was found not be the statistically significant. (X^2=0.903, df=3, p value=0.82).

A total of 159 respondents were Christians, few 70(49.3%) were not depressed, 89(49.2%) were depressed, 163 respondents were Muslims, out of which more than half 72(50.7%) respondents were depressed. The relationship between religion and experience of depression was not statistically significant (X^2=7.008, df=3, pvalue= 0.07).

Majority of the respondents were Yorubas 118(83.1%) were not depressed while 141(77.9%) were classified depressed. A total of 37 respondents were Hausas and 19(10.5%) were depressed. 16(8.8%) respondents who were Ibos depressed. The relationship between experience of violence and ethnicity of respondents was not statistically significant.(X^2=7.008, df=2, pvalue=0.65)

Table 4.6.1 Relationship between demographic characteristics (age, level of education) of respondents and experience of depression in pregnancy

N=323

	Not depressed(%)	Depressed (%)	X2	P-value	Df
Age-group					
15-24 years	33(37.9)	54(62.1)	1.816	0.40	2
24-35 years	83(46.6)	95(53.4)			
35+years	26(44.8)	32(52.2)			
Level of education					
No formal education	4(2.8)	4(2.2)	0.907	0.82	3
Primary education	30(21.1)	45(24.9)			
Secondary education	74(52.1)	94(51.9)			
Ethnic group			7.008	0.07	3
Yoruba	118(83.1)	141(77.9)			
Hausa	18(12.7)	19(10.55)			
Ibo	6(4.2)	16(8.8)			
Others	0(0.0)	5(1.5)			
Religion			0.788	0.65	2
Christianity	70(49.3)	89(49.2)			
Islam	72(50.7)	91(50.3)			
African tradition	0(0.0)	1 (0.6)			

4,6.2 Relationship between the experience of violence and depression in pregnancy

The second hypothesis stated that there would be no significant relationship between the experience of violence and depression pregnancy.

A total of 26 respondents had been hit by their partners while pregnant, of this, 5(3.5%) were classified not depressed and 21(11.6%) were depressed, also, a total of 297 respondents had never been hit by their partners in pregnancy, 137(96.5%) of this category were found not depressed while 160(88.4%) were depressed. Therefore, the relationship between the experience of violence among this respondents' population and experience of depression is pregnancy was found to be statistically significant. (X^2=7.021, df=1, pvalue=0.01)

Twenty (25) respondents had been slapped by their partners while pregnant, 6(4.2%) of this population were not depressed while 19(10.5%) were found depressed. 298 respondents said their partners had never slapped them while pregnant and 136(95.8%) of this entire population wee not depressed meanwhile, 162(89.5%) were depressed. There is a significant relationship between the experience of violence and depression in pregnancy among respondents in this target population.(X^2=4.383, df =1, pvalue= 0.04)

A total of 13 respondents had been beaten in pregnancy and 2(1.4%) were not depressed, meanwhile, 11(6.1%) respondents were depressed. 310 respondents were never beaten by partners in pregnancy and 140(98.6%) were not depressed while 170(93.9%) were depressed. There is a significant relationship between experience of violence and depression in pregnancy among respondents in this category. (X^2=4.49, df=1, pvalue= 0.03)

Table 4.6.2 Relationship between physical violence and experience of depression in pregnancy
N=323

		Experience of depression				
		Not depressed	Depressed	X^2	P-Value	df
Ever been hit by partner with fist	Yes	5(3.5)	21(11.6)	7.021	0.01	1
	No	137(96.5)	160(88.4)			
	Total	**142**	**181**			
Ever been slapped by partner while pregnant	Yes	6(4.2)	19(10.5)	4.383	0.04	1
	No	136(95.8)	162(89.5)			
	Total	**142**	**181**			
Ever been beaten by partner while pregnant	Yes	2(1.4)	11(6.1)	4.49	0.03	1
	No	140(98.6)	170(93.9)			
	Total	**142**	**181**			

4.6.3 Categorization of respondents' level of exposure to physical violence and experience of depression

A total of 315 respondents had low experience of physical violence out of which 142(100.0%) were not depressed and 173(95.6%) were depressed. Also, a total of 8 respondents had high experience of physical violence out of which 0(0.0%) was not depressed and 8(4.4%) were depressed.

The relationship between experience of physical violence and experience of depression is statistically significant(X^2=6.436, df=1, Pvalue=0.01).

Table 4.6.3 Categorization of respondents' level of exposure to physical violence and experience of depression

	Experience of depression					
	Not depressed (%)	**Depressed (%)**	**Total**	**X^2**	**p-value**	**df**
Level of experience of physical violence						
Low experience of physical violence	142(100.0)	173(95.6)	315	6.436	0.01	1
High experience of physical violence	0 (0.0)	8(4.4)	8			
Total	**142**	**181**	**323**			

4.6.4 Relationship between experience of sexual violence and depression in pregnancy

A total of 84 respondents have had their partners forced to have sex, out of which 26(18.3%) were not depressed and 58(32.0%) were depressed. A total of 239 respondents had never been forced by their partners to have sex while pregnant, of these, 116(81.7%) were not depressed while 123(68.0%) were found depressed. Therefore, the relationship between experience of depression and experience of violence in this respondents' population was significant. (X^2=7.800, df=1, pvalue=0.01)

Table 4.6.4 Experience of sexual violence and depression in pregnancy

		Experience of depression				
		Not depressed	Depressed	X^2	P-value	Df
Ever been forced by partner to have sex with them while pregnant?	Yes	26(18.3)	58(32.0)	7.800	0.01	1
	No	116(81.7)	123(68.0)			
Total		**142**	**181**			

4.6.5 Relationship between experience of psychological violence and depression in pregnancy

A total of 182 respondents had their contributions to the relationship minimized by their partners, 79(55.6%) respondents of this total population were not depressed while 103(56.9%) were found depressed. 63(44.4%) respondents whose partners did not minimize their contribution to the relationship were not depressed while 78(43.1%) respondents whose partners did not minimize their contribution to the relationship were found depressed. The relationship between experience of depression and experience of violence in this category was not statistically significant (X^2=0.052, df=1, pvalue=0.82).

Table 4.6.5 Experience of psychological violence and depression in pregnancy

		Experience of depression					
		Not depressed	Depressed	Total	X^2	p-value	df
Partner ever minimized contribution to relationship while pregnant	Yes	79(55.6)	103(56.9)	182	0.052	0.82	1
	No	63(44.4)	78(43.1)	141			
Total		**142**	**181**	**323**			

X^2=0.052, df=1, pvalue=0.82

4.6.6 Categorization of respondents' level of exposure to psychological violence and experience of depression

A total of 185 respondents had low experience of psychological violence of which 98(69.0%) were not depressed and 87(48.1%) were depressed. Also, a total of 138 respondents had high experience of psychological violence out of which 44(31.0%) were not depressed and 94(59.1%) were depressed.

The relationship between experience of psychological violence and experience of depression is statistically significant(X^2=14.269, df=1, Pvalue=0.00).

Table 4.6.6 Categorization of respondents' level of exposure to psychological violence and experience of depression

	Experience of depression					
Level of exposure to psychological violence	Not depressed (%)	Depressed (%)	Total	X^2	P-value	df
Low experience of psychological violence	98(69.0)	87(48.1)	185	14.269	0.00	1
High experience of psychological violence	44 (31.0)	94(59.1)	138			
Total	**142**	**181**	**323**			

4.6.7 Relationship between parity and experience of depression

The third hypothesis stated that there would be no significant relationship between parity and experience of depression in pregnancy.

Of the 200 respondents that said their pregnancy was intended, 100(50%) were found not to be depressed using the Edinburgh postnatal depression scale, and 100(50%) were classified as depressed. Meanwhile, of the 123 pregnant women who said their pregnancy was intended 81(44.4%) were classified as depressed and the remaining, 42(29.6%) were classified as not depressed using the same scale.

It was observed that the difference was statistically significant (X^2 =7.770, df= 1, P= 0.01).

It was also observed that depression seemed to be more prevalent among respondents' population whose pregnancy were not intended. The result is presented in Table 4.8.9

Table 4.6.7 Experience of depression and the intention to get pregnant

		Not depressed	Depressed	X^2	p-value	Df
Intended pregnancy	Yes	100(70.4)	100(55.2)	7.770	0.01	1
	No	42(29.6)	81(44.8)			
Total		**142**	**181**			

4.6.8 Relationship between experience of depression and financial difficulties

A total of 141 pregnant women were asked if they were experiencing financial difficulties to which they responded by saying No, out of this total population of respondents, 57(40.4%) were depressed while the remaining 84(59.6%) were not depressed meanwhile 182 respondents said they were experiencing financial difficulties 134(68.1) were depressed using the Edinburgh postnatal depression scale while the remaining 58(31.9%) respondents from this population were not depressed.

The relationship between category of depression and experience of difficulties is statistically significant(X^2=24.756, df=1, Pvalue=0.00).

It was therefore observed that respondents that were experiencing financial difficulties were more depressed compared to pregnant women who were not experiencing financial difficulties as at the time the study was carried out. The result is shown in Table 4.8.0

Table 4.6.8 Experience of depression and financial difficulties

		Experience of depression				
		Not depressed	Depressed	X^2	P-value	df
Experience of financial difficulties	Yes	58(31.9)	124(68.1)	24.756	0.00	1
	No	84(59.6)	57(40.4)			
Total		**182**	**141**			

CHAPTER FIVE

DISCUSSION

5.1 Socio-demographic characteristics of respondents'

The ages of the respondents ranged from 17-44 years of age which is in line with the National health demographic survey's (NDHS, 2008) categorization of the fertility age range of women (15-49years). The mean age was 28.23±5.86. Majority 178(55.1%) of the respondents were between 25-34 years of age, this finding is also in line with the NDHS 2003 study that states that the age-specific fertility rate pattern of women in the urban settings depicts a narrow pick at age 25-29 years.

Majority of the respondents belonged to the Yoruba ethnic group this could be traced to the fact that the study location is situated in the south-western part of the country where the Yoruba's are the predominant ethnic group. The two most popular religious groups were almost equally represented in this study with 163(50.5%) being Muslims and 159(49.2%) being Christians which can also be traced to the fact that the study location is comprised of these two major religious groups. The findings that most of the respondents were married could be attributed to the fact that the Nigerian culture expects that pregnancy should occur in marital relationships.

5.2 Prevalence of depression

The study attempted to document the prevalence of depression among pregnant women attending selected primary health centers within Ibadan north local government. It revealed a prevalence of 56.0% which is quite on the high side and of public health importance. The high prevalence corroborates the report of findings by Hobfall and colleagues who reported that Prevalence rates range between 25% to 50% among low-income population using variety of depression tools (Hobfoll, Ritter, Lavin, Hulsizer, Cameron, 1995., Séguin, Potvin, St-Denis, Loiselle, 1999). The frequencies of the assessed risk factors were high, these being the reason for the high prevalence rate of depression. More than half of the entire respondents population do not get help from their partners when it comes to house chores and in taking care of the children, lack of support is an important risk factor for depression in pregnancy, also less than half of the respondents indicated that the pregnancy was not intended, few of the respondents do not get the encouragement to seek professional help needed, few of the respondents said they had experienced miscarriages or

stillbirth. These are major risk factors for antenatal in pregnancy that contributed to the high prevalence of depression.

Few of the respondents said they have not been able to laugh and see the funny sides of things as much as they used to also, less than half of the pregnant women said that they had not been able to laugh and see the funny sides of things at all in the last seven days. Also, very few of the respondents said they look forward to enjoyment to things definitely less than they used to while 50(15.5%) said they look forward to enjoyment to things rather less than they used to and 45(13.9%) said they hardly enjoy things at all. According to the World Health Organization, many women experience depressed mood, loss of interest and enjoyment, and reduced energy leading to diminished activity for at least two weeks. Many people with depression also suffer from anxiety symptoms, disturbed sleep and appetite and may have feelings of guilt or low self-worth, poor concentration and even medically unexplained symptoms (WHO,2012).

About half of the respondents had blamed themselves unnecessarily when things went wrong 132(40.9%) of the respondents said they blame themselves some of the time while 84(26.0%) said they blame themselves most of the time. Less than half of the respondents said they sometimes get anxious or worried for no good reason and few said they get anxious or worried very often. This tallies with the findings of Fatoye and colleagues who reported that., "Historically, pregnancy is a time of enjoyment and fulfilment for women. However, evidence indicates that there is an increase in psychiatric morbidity, particularly depression and anxiety, during this period" (Fatoye, Adeyemi, Oladimeji, 2004).

In this study, below half of the respondents indicated that they have felt scared or panicky for no very good reason in the last seven days, meanwhile, said they felt scared or panicky quite a lot. Few of the respondents stated that they sometimes haven't been coping well because things have been getting on top of them while 59(18.3%) pregnant women said that they haven't been able to cope at all most of the time. This is similar to findings carried out by the post and antenatal depression association "Pregnancy hormones may contribute to feelings of depression, while hormonal ups and downs affect all pregnant women, some feel the swings more intensely. However many other factors can contribute to the development of depression in pregnancy. A pregnant woman may experience some uncertainty about the pregnancy, feeling perhaps that the timing is wrong, that

career or long-term goals may need to be delayed or that there might be financial problems. She may also feel uncertain about her new role as mother, fears about carrying the pregnancy, as well how she will cope with labour and delivery. She may also feel guilty about being unhappy because everyone expects her to be content and blooming (Post & Antenatal Depression Association.,2010).

Contrary to general belief, gestation is not always characterized by joy and accomplishments. Many women experience sadness or anxiety in these periods of their lives. Gestation and postpartum (puerperium) are periods of woman´s life which involve many physical, hormonal, psychic and social insertion changes which can have a direct effect on her mental health (Camacho et al., 2006) this also apply to the findings from this study which revealed that 77(23.8%) pregnant women said they feel sad or miserable quite often in the last one week 44(13.6%) said they feel sad or miserable most of the time in the last one week. Less than half of the respondents' population 71(22.0%) said they occasionally got unhappy that they cried while 66(20.4%) said that have felt unhappy that they cried quite often in the last one week.

Depression is different from usual mood fluctuations and short-lived emotional responses to challenges in everyday life. Especially when long-lasting and with moderate or severe intensity, depression may become a serious health condition. It can cause the affected person to suffer greatly and function poorly at work, at school and in the family. At its worst, depression can lead to suicide. Suicide results in an estimated 1 million deaths every year (WHO.,2014). Eleven 11(3.4%) respondents said the thought of harming themselves have either "sometimes" or "hardly ever" occurred to them while 15(4.6%) said the thought of harming themselves occur to them quiet often.

5.3 Assessment of risk factors associated with depression in pregnancy

The study revealed that more than half of the respondents had high exposure to risk factors associated with antenatal depression while many had high exposure to the risk factors associated with antenatal depression, more than half of the entire respondents do not get help from their partners when it comes to house chores and in taking care of the children and about half of the respondents' pregnancies were not intended. More still, few of the pregnant women had difficulty becoming pregnant. The factors that bring about depression in pregnancy in this findings is similar to that of Lancaster et al. Antenatal depression is usually caused by many factors. Usually, it is associated with the fear and stress of the pregnancy, some of the most important risk factors,

indicated by the literature, lack of social support, unintended pregnancy, domestic violence, lower income, lower education, smoking, and single status (Lancaster, Gold, Flynn, Yoo, Marcus.,2010).

Similar to studies by Chungs et al on risk factors for antenatal depression, less than half of the respondents had experienced miscarriages or stillbirth, few of them had experienced prolonged labor in the past. Several risk factors predispose to depression during pregnancy, some of them are poor antenatal care, poor nutrition, and events during pregnancy like previous abortions, and modes of previous delivery like past instrumental or operative delivery, other factors include age, marital status, gravidity, whether pregnancy was planned or not, previous history of stillbirth, previous history of prolonged labor, and level of social support (Chung, McCollum, Elo, Le , Culhan.,2004).

Many of the respondents were anxious about being able to cope with the expected baby, few of the respondents have had health problems in the pregnancy meanwhile, few rely on drugs, alcohol or other substances to help deal with things. This corroborates with findings by Pajulo et al "Depression in pregnancy may diminish one's capacity for self-care, including inadequate nutrition, drug or alcohol abuse and poor antenatal clinic attendance, all of which may compromise a woman's physical and mental health and may reduce optimal fetal monitoring or restrict the growth and development of the fetus (Pajulo, Savonlahti, Sourander, Helenius, Piha .,2001, Hartley, Tomlinson, Greco.,2011., Kaaya, Mbwambo, Kilonzo.,2010, Rochat, Tomlinson, Bärnighausen, Newell, Stein., 2011)".

5.4 Assessment of gender-based violence experiences- a risk factor for depression in pregnancy

Violence against women cuts across socio-economic class, ethnic groups, religion and also in pregnancy. Violence is another important risk factor for depression in pregnancy, few of the respondents had experienced one form of violence or the other while pregnant (physical, psychological, and emotional abuse). Less than half had been forced to have sex by their partners,few had their partners keep them away from family and friends while pregnant. Experience of violence in pregnancy could also be traced to the high prevalence of depression in pregnancy among respondents. Few 26(8.0%) of the respondents had high exposure to gender-based violence while pregnant. Abused women often live in fear. The findings from this study corroborates with a survey by Helsie, 10 to 58 percent of women have experienced physical abuse by an intimate partner in their lifetimes (Heise, L, 1999).

5.5 Implications for Health Education

Findings from this study have health promotion and education implications and thereby the need for multiple interventions for tackling the phenomenon.

Awareness and Health Education: There is need for more awareness program on antenatal depression, health education on the risk factors associated with depression in pregnancy is very important as majority of the women are ignorant of depression in pregnancy as signs and symptoms are generally mixed up with the symptoms exhibited in the first three months of pregnancy. Creating awareness can be achieved through health talks at the antenatal care sessions because health education is a part of health care that is concerned with promoting healthy behaviors. The significant orders should not be left out in the health education program because the society believes pregnancy is a period of accomplishments and joy and fail to understand quite a number of women do not feel the joy and accomplishments as expected but rather feel depressed for one reason or the other. Hence, the need to create awareness also to the significant orders to provide social support to pregnant women so as to bring a reduction to the prevalence of antenatal depression.

Public enlightenment programmes including awareness and campaigns have the potential of reaching a large number of people and can also influence knowledge, perception and attitude. The use of information, education and communication materials like the use of posters, leaflets, documentary, jingles and billboards to give out information on the risk factors associated with antenatal depression should be employed so as to reach out to a large number of the target population and thereby influence their knowledge.

Training; this should be provided to health workers on the correct assessment and diagnosis of depression in pregnancy: Recruiting and training of health care providers is quite necessary.

Advocacy: the world health organization has recognized advocacy as one of the most potent strategies for addressing sexual violence. It is a process that can bring about change in policies, laws and practices of significant individuals, groups and communities. Advocacy can be used to promote gender equality and change socio- cultural factors such as norms, cultural beliefs, and attitudes that promote or sustain violence in pregnancy.

Advocacy should be made to the right bodies and institutions to provide diagnosis and treatment initiatives which are essential for detecting depression in pregnancy . More still, these women should be encouraged to use the services via continuous and sustainable awareness campaigns

Social mobilization should target community leaders, traditional rulers, religious organizations, faith based institution and not just families towards the provision of social support to pregnant women. Non-governmental Organizations can partner with health facilities in promoting service availability, affordability and utilization.

5.6 Conclusion

Little research about depression in pregnancy, and scarcity of data on antenatal depression is a big problem. Antenatal care traditionally focuses on physical health rather than on emotional health. Consequently, antenatal depression is regularly overlooked and under diagnosed, locally and globally, also viewed by the public and the medical profession as a period of emotional well-being that is protected against mental disorder. Therefore, the first and continuing task is to get deeply involved in data collection and statistics to make it impossible to overlook depression in pregnancy as normal or mere symptoms of pregnancy.

Prevalence of antenatal depression in Ibadan is quite on the high side (56.0%). This shows that the symptoms are merely overlooked. However, this study revealed that respondents within the age-group 25-34 years of age were mostly affected, majority of whom are married, also, women who said their pregnancies were not intended were more depressed than respondents who said their pregnancies were intended, therefore, intention to get pregnant is a significant risk factor for depression in pregnancy, other major risk factors include level of income, experience of financial difficulties, experience of stressful life events, low income, marital status (married women were more depressed compared to single, other factors could be responsible for this such as lack of social support, abuse by partners).

The experience of violence in pregnancy is also one major contributing factor to antenatal depression. One-quarter of the respondents had experienced on form of violence or another in pregnancy. It is therefore very important to intensify efforts on prevention of violence in pregnancy.

5.7 Recommendations

1. Creating awareness on the risk factors associated with depression in pregnancy in health facilities during antenatal care sessions
2. Health talks including health education on the risk factors associated with depression in pregnancy should be incorporated into programs during antenatal care session.
3. Recruiting and training of health care providers on accurate assessments and correct diagnosis of antenatal depression.
4. Provision of support groups in strategically located places to help improve self-esteem of women and also encouraging family support and social support for pregnant women.
5. Advocacy should be made to government to incorporate into Nigeria policy to provide diagnosis and treatment initiatives which are essential for detecting depression in pregnancy.
6. Funding research on depression in pregnancy, disseminating evaluation results to relevant bodies who can make good use of the results and promoting investments in effective prevention, diagnosis and treatment initiatives which are essential for detecting pregnant women in need of intervention in order to safeguard the well-being of mother and baby.

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Appendix

QUESTIONNAIRE

Prevalence, risk factors associated with antenatal depression and experience of violence among pregnant women in primary health centers within Ibadan north local government

My name is Oluwatoyin Ganiyat, Aransi, a post graduate student of Department of Health Promotion and Education, Faculty of Public health, College of Medicine, University of Ibadan. The purpose of this study is to investigate the prevalence and risk factors associated with antenatal depression among pregnant women attending selected primary health centers within Ibadan north local government.

The findings from this study will help serve as input in designing educational programmes to reach out to pregnant women attending antenatal care sessions and would also contribute to improving the willingness of pregnant women to go on regular appointments with health-care providers, encourage uptake of the best treatment method which may include taking medication and probably go for therapy as prescribed by a professional health practitioner if depression in pregnancy is suspected using the Edinburgh postnatal depression scale.

The data from the study could also be used to formulate informed policies on screening for depression in pregnancy in health facilities in the country. Your identity, responses and opinion will be kept strictly confidential and will be used for the purpose of this research only. Please note that you do not have to write your name on this questionnaire, your kind assistance is sought for you to answer the questions below as accurately as possible to make the research a success. However, your participation is voluntary and you may request to withdraw at any time.

Would you want to participate in the study?

Yes ☐

No ☐

SECTION A- SOCIO DEMOGRAPHIC DATA

Instruction; kindly provide all necessary information requested by ticking ( ) the alternative answer you think are appropriate in line with your views.

1. What is your age as at your last birthday ……(Actual age or year of birth)
2. Ethnic group 1. Yoruba { } 2. Hausa { } 3. Ibo { }
   4. Others (specify……..)
3. Religion 1. Christianity { } 2. Islam { } 3.African Traditional { } 4. Others (specify……)

4. Highest level of Education 1. No formal education { } 2. Primary { }
3. Secondary { } 4. Tertiary { }

5. Occupation 1. Trading { } 2. Artisan { } 3. Housewife { } 4.Government worker { }
5. Self-employed { }

6. Marital status 1. Married { } 2. Widowed { } 3. Separated/divorced { }
4. Single { } (Ask Q7 if married)

7. (For married only) what type of marriage 1. Monogamy { } 2. Polygamy { }
8. Level of income 1. less than #5000 { } 2. #5000{} 3. Greater than #5000{}
9. Do you smoke? 1.Yes { } 2. No { }
10. Do you take alcohol? 1.Yes { } 2. No { }
11. Trimester in pregnancy 1. First trimester { } 2. Second trimester { } 3. Third trimester { }

SECTION B: Edinburgh Postnatal Depression Scale 1 (EPDS) (Prevalence of depression) As you are pregnant or have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**, not just how you feel today.

Here is an example, already completed.

I have felt happy:

- ○ Yes, all the time
- ✓ Yes, most of the time
- ○ No, not very often
- ○ No, not at all

This would mean: "I have felt happy most of the time" during the past week.

Please complete the other questions in the same way.

In the past 7 days:

(12)	I have been able to laugh and see the funny side of things ○ As much as I always could ○ Not quite so much now ○ Definitely not so much now ○ Not at all	 0 1 2 3	(13)	I have looked forward with enjoyment to things ○ As much as I ever did ○ Rather less than I used to ○ Definitely less than I used to ○ Hardly at all	 0 1 2 3
(14)	I have blamed myself unnecessarily when things went wrong ○ Yes, most of the time	 3	(15)	I have been anxious or worried for no good reason ○ No, not at all ○ Hardly ever ○ Yes, sometimes	 0

	○ Yes, some of the time ○ Not very often ○ No, never	2 1 0		○ Yes, very often	1 2 3
(16)	I have felt scared or panicky for no very good reason ○ Yes, quite a lot ○ Yes, sometimes ○ No, not much ○ No, not at all	 3 2 1 0	(17)	Things have been getting on top of me ○ Yes, most of the time I haven't been able to cope at all ○ Yes, sometimes I haven't been coping as well ○ No, most of the time I have coped quite well ○ No, I have been coping as well as ever	 3 2 1 0
(18)	I have been so unhappy that I have had difficulty sleeping ○ Yes, most of the time ○ Yes, sometimes ○ Not very often ○ No, not at all	 3 2 1 0	(18)	I have felt sad or miserable ○ Yes, most of the time ○ Yes, quite often ○ Not very often ○ No, not at all	 3 2 1 0
(20)	I have been so unhappy that I have been crying ○ Yes, most of the time ○ Yes, quite often ○ Only occasionally ○ No, never	 3 2 1 0	(21)	10. The thought of harming myself has occurred to me ○ Yes, quite often ○ Sometimes ○ Hardly ever ○ Never	 3 2 1 0

SECTION C: ASSESSMENT OF RISK FACTORS FOR DEPRESSION

SN	VARIABLE	RESPONSE	
		Yes	No
22.	Do you have a good relationship with your parents and other family members?		
23.	Do you have a good relationship with your spouse?		
24.	Does your husband help with house chores and in taking care of the children?		
25.	Is this pregnancy intended?		
26.	Did you have difficulty becoming pregnant?		
27.	Do you and your partner have joint and concrete arrangements towards delivery?		

28.	Does he encourage you to seek professional help when needed?		
29.	Have you had previous episodes of miscarriage or still birth?		
30.	Have you experienced prolonged labor in the past		
31.	Are you anxious about being able to cope with the expected baby		
32.	Do you have any health problems in this pregnancy		
33.	Do you rely on drugs, alcohol or other substances to help you deal with things?		

SECTION D: ASSESSMENT OF GENDER BASED VIOLENCE EXPERIENCE

Has your partner or husband ever done any of these to you while pregnant? ***Kindly tick yes or no***

S/N	**Variables**	Yes	No
34.	Hit you with his fists?		
35.	Hit you with a hard object or anything that could hurt you		
36.	Kicked you?		
37.	Punched you?		
38.	Slapped you?		
39.	Beaten you?		
40.	Dragged you?		
41.	Yelled at you?		
42.	Call you names, or tell you you're worthless?		
43.	Interrupt you?		
44.	Throw things at you when angry?		
45	Has your husband ever threatened you with a knife?		
46.	Has your partner ever forced you to have sex with him?		
47.	Do you feel criticized by your partner?		
48.	Does he minimize your contribution to the relationship?		
49.	Does your partner or spouse try to keep you away from your family or friends?		
50.	Have you ever felt unsecure in this pregnancy?		
51.	Has any of your partner's relative ever hit you?		

SECTION E: ASSESSMENT OF STRESSFUL LIFE EVENTS THAT COULD LEAD TO DEPRESSION AMONG PREGNANT WOMEN

Did any of these things happen to you recently?

	VARIABLES	Yes	No
52.	Death of a close relative or friend?		
53.	Do you have housing issues?		
54.	Are you experiencing financial difficulties?		
55.	Did you or have you recently lost your job?		
56	Did you experience any form of natural disaster recently like flood, fire outbreak, etc?		

THANK YOU FOR PARTICIPATING IN THIS STUDY

IBEERE

IWÁDÌÍ ÒKODORO NÍPA ÌWỌ́PỌ̀ ÌFẸ́MÍWÉWU WÀHÁLÀ TÓ RỌ̀ MỌ́ ÀWỌN ALÁBOYÚN ATI IGBELEWON NIPA IRIRI IKOLURA TAKO/TABO NÍPA ÀWỌN ORÍKÒ ÀWỌN ÈTÒ ÌLERA ALÁÁBỌ́DÉ LÁÀRIN ÌJỌBA ÌBÍLẸ̀ ÀRÍWÁ ÌBÀDÀN.

Orúkọ mi ni Olúwátóyìn Gàníyát Àránsí, akẹ́èkọ́ ìtẹ̀síwájú abala kejì Lẹ́ka èkọ́ ìmọ̀ ìgbéláruge ilera àti èkọ́, agbo ilé ìmọ̀ nípa ìlera gbogbogbòò, ẹ̀ka ìmọ̀ ìṣègùn, Yunifásítì ti ìlú Ìbàdàn.Ìdí pàtàkì fún àgbékalẹ̀ ìwádìí yìí ni láti wádìí òkodoro nípa ìwọ́pọ̀ ìfẹ́míwéwu wàhálà tó rọ̀ mọ́ àwọn aláboyún nípa àwọn oríkò àwọn ètò ìlera aláábọ́dé láàrin Ìjọba Ìbílẹ̀ Àríwá Ìbàdàn.

Àbájáde ìwàdìí yìí yóò ṣe ìrànlọ́wọ́ láti ṣe àgbékalẹ̀ ètò ìlanilóyè fún àwọn aláboyún tó n lọ ṣe àyèwò oyún, yóò sì sẹ ìrànlọ́wọ́ láti lè jẹ́ kí òye yé wọn láti máa lòó fún àyẹ̀wò won déédé gẹ́gẹ́ bí àwọn elétò ìlera sẹ fún wọn lọ́jọ́, yóò tún jẹ́ kí wọn lè mọ ìlànà tó kún ojú òsùnwọ̀n nípa ìlera èyí tó lè jẹ́ lílò òògùn déédé àti lílò fún ìtọ́jú ara gẹ́gẹ́ bí àwọn ìṣègùn sẹ làá sílẹ̀ fún wọn tí a bá fúnra pé àìsẹdéé wà lásìkò oyún níní nípa lílo òṣùnwọ̀n ajẹmọ́-èyìn-ibímọ ti Ẹ́dínbọ́ọ̀gì (Edinburgh).

Àkójopọ̀ ìwádìí tí a bá ṣe nínú ìmọ̀ ìjìnlẹ̀ yìí ni a lè ṣàmúlò láti fi ṣe àgbékalẹ̀ òte láti ṣàyèwò àwọn tí ó wà ní ipò àìṣedéédé nínú oyún níbi ètò ìlera orílẹ̀-èdè yìí.

Orúkọ yín, ohun tí a gbọ́ lẹnu yín àti èrò tí a gbà kalẹ̀ ni a o ṣe lọ́jọ̀ ni yóò sì jẹ́ mọ̀-ọ́n-nú fún wa, tí yóò sì wúlò fún ìwádìí ìjìnlẹ̀ yìí nìkan. Kìí ṣe dandan kí ẹ kọ orúkọ yín sí ibi ìbéèrè tó wà nísàlẹ̀ wọ̀nyí, gégé bí ìbèérè wọ̀nyìí bá ti rí sí yín gan-an ni kí ẹ sọ láti lè jẹ́ ki ìwádìí ìjìnlẹ̀ yìí kẹ́ṣẹ járí

Lẹ́yìn náà, ìkópa yìí kìí ṣe dandan gbọ̀n-ọ̀n, ẹ lè fà sẹ́yìn lásìkò tó bá wù yín.

(1) N jẹ́ ẹ nífẹ́ẹ́ láti kópa nínú ìwádìí yìí?

Bẹ́ẹ̀ni ( )

Bẹ́ẹ̀kọ́ ( )

ABALA KÌÍNÍ (SECTION A) ÀKÓJOPO IWADII LATI INU AWUJO.

Alaye; e jowo e ba wa dahun awon ibeere to nipa fifowo si inu amin akamo () eyi ti o ba ba ero yin mu.

1`Ki ni ojo ori yin ni ojo ibi yin to koja----------(ojo ori yin gan-an)

2.Eya wo ni yin ? (1) Yoruba { } (2) Hausa { } (3) Igbo { } (4) omiran, ko o sibi----

3.Esin; (1) omo leyin Jeesu (2) Elesin Isilaamu (3) Elesin ibile (4) omiran, koo sibi-----

4.Iwe ti e ka (1) N ko kawe { } (2) Ileewe A lakoobere{ } (3)Ekose owo{ } (4)Iwe mewaa{ mo pari} { } (5) Iwe mewaa{ n ko pari} { } (6) Ileewe giga { }

(1) Olukoni agba (NCE) { }

(2) Ileewe Gbogbonse ipele Akoko (OND) { }

(3) Gbogbonse ipele keji { HND] { }

(4)Ileewe Yunifasiti { }

5. Ise ise re : (1) Onisowo{ } (2) Onise owo{ } (3)Iyawo ile { } (4) Osise ijoba { } (5) Onise Aladaani{ }

6. Ipo Lawujo: (1) Mo ti loko{ } ,Mo ti feyawo{ } (2) Opo { } , (3) A ti kora sile { } (4) N ko tii se igbeyawo rara { } (5) igbeyawo wa ti tuka{ }
(Dahun ibeere keje to o ba ti se igbeyawo) {Fun awon to ba ti se igbeyawo nikan),

7. iru igbeyawo wo ni? (a) oniyawo kan{ } (b) olopo iyawo { }

8. Bi owo se n wole (1) ko to egberun marun-un (N5,000) ni osu { } 2. Egberun marun-un (N5,000) ni osu { } 3. Oju egberun marun-un (N5,000) lo ni osu { }

9. N je o n mu siga tabi

10. Nje o ma n mu oti lile? Beeni { } Beeko {

11. Osu meta meta ninu oyun: (1) Osu meta akoko{] (2) Osu meta keji{ } ,Osu meta keta{

ABALA KEJI: Osunwon Edinboogi (Edinburgh) fun Ayewo Ajemo-Irewesi Aboyun Leyin Ibimọ.

(Ijeyo Irewesi), gege bi o se je pe aboyun ni yin, tabi e sese bimo, a fe mo bi ara yin ti n ri. E jowo, e wo idahun to ba sun mo bo se n se yin gan-an.

Ni BI OJO MEJE SEYIN, kii se bo se n se yin ni oni nikan.

Apeere re e , to ti pari:

Inú mi ti dùn:

- Beeni ------ nigba gbogbo
- Beeni ------Leekookan
- Beeko----- Ki i se igba gbogbo
- Beeko----- ki i dun mi rara

Eyi tumo si inu mi ma n dun mi lopo igba lose to koja.

E jowo , e dahun awon ibeere wonyii lona kan naa.

NI OJO MEJE SEYIN:

(12)	Mo n ni anfaani lati rerin-in ti mo si n ri adun oro ○ O maa n po daadaa ○ k i i po ni asiko yii ○ Rara ko po lasiko yii ○ ko sele rara { }	0 1 2 3	(13)	Mo maa n wa idunnu si nnkan ○ Bi mo se maa n se tele { } ○ O dinku si ti tele { } ○ O dinku patapata si ti tele ○ Kò selè rárá	0 1 2 3
(14)	Mo n bara mi wi lasan ti nnkan ba polukurumusu Beeni lopo igba ○Beeni leekookan ○Ki i se gbogbo igba ○Rara ko ri bee	3 2 1 0	(15)	Mo maa n ni idaamu okan lainidii kan pato ○ Ko sele rara { } ○ Rara Ko sele { } ○ Beeni leekookan { } ○ Beeni nigba gbogbo {}	0 1 2 3
(16)	Ijaya ati iberu maan mu mi lainidii kan pato ○ Beeni lopo igba { } ○ Beeni leekookan { } ○ Beeko, ko po { } ○ Beeko , ko ri bee { }	3 2 1 0	(17)	Nnkan maa n kami laya pupo ju ○ Beeni, ipa mi ki I ka lopo igba { } ○ Beeni, n ki i le kapa re daadaa { } ○ Beeko, ipa mi maa n ka a daadaa { } ○ Beeko, o rorun fun mi daadaa { }	3 2 1 0

(18)	Inu mi ko dun wipe n ko roorun sun ○ Bee ni lopo igba ○ Bee ko kii se gbogbo igba ○ Bee ko, kii se gbogbo igba ○ Bee ko, ko ri bee rara	3 2 1 0	(19)	Inu mi kii dun, tabi fokanbale ○ Bee ni lopo igba ○ Bee ni, loore koore ○ Bee ko, kii se opo igba ○ Bee ko, ko ri bee rara	3 2 1 0
(20)	Inu mi ko dun notori pe mo maa n sunkun ○ Bee ni, lopo lopo igba ○ Bee ni nigba gbogbo ○ Leekoo kan ○ Rara, kori bee	3 2 1 0	(21)	Erongba lati se ara mi nijamba ti wa sokan mi ○ Beeni, lopo lopo igba ○ Leekookan ○ Ko fi bee sele ri ○ Ko sele ri rara	3 2 1 0

ABALA KETA: IJIELEWON AWON EWU TO RO MO KOKO IREWESI

SN	VARIABLE		
		Bee ni	Bee ko
22.	Nje ibasepo iwo pelu awon obi re dara ati awon molebi yooku?		
23.	Nje ibasepo iwo pelu ololufe re dan moran?		
24.	Nje oko re maa n ran e lowo nipa ise ile lati toju awon omo?		
25.	Nje e fe oyun yi?		
26.	Nje o ni isoro lati ni oyun?		
27.	Nje iwo ati ololufe re ni ajoso ati eto pataki nipa ibimo/ojo ikunle?		
28.	Nje o maa fun e ni iwuri lati wa iranlowo lodo awon akosemose lasiko to ba ye?		
29.	Nje oyun ti wale lara re ri bi omo aipe-ojo?		
30.	Nje o ti ni isoro ibimo ri seyin ni ojo ikunle?		

31.	Nje o gbara le oogun, oti lile tabi awon nnkan miran lati gbe igbese?		
32.	Nje o ni isoro ailera ninu oyun yii?		
33.	Nje o ti gbe igbe – aye ainifayabale ri laipe ojo (iku eni to sunmo, tabi ore, isoro ile gbigbe, tabi airowona ati bee bee lo)		

IGBELEWON NIPA IRIRI IKOLURA TAKO/TABO

Se oko tabi ore re ti se awon nnkan wonyi si o ri nigba ti o wa ninu oyun? Mu okan nipa siso pe Beeni tabi Beeko

S/N	**Orisiirisii**	Beeni	Beeko
34.	Fi igunpa gba o ri		
35.	Fi nnkan to lewu gba o tabi nnkan ti o le dun o		
36.	Gba o nigbaakugbaa?		
37.	Fun o Lesee		
38.	Gba o leti		
39.	Lu o ni ilukulu?		
40.	Le o jade		
41.	Fi e se eleye		
42.	Pe o loruko tabi so fun o pe o ko wulo?		
43.	Di o lowo?		
44.	Ju nnkan lu o nigba ti inu ba n bii?		
45.	Se oko re ti fi obe hale mo o ri?		
46.	N je oko re ti fi ipa ba e lopo ri?		
47.	N je oko re maa n ba o jiyan ajakudorogbo		
48.	N je o maa n da aba re nu ninu igbayawo yin		
49.	N je oko re maa n gbe e pamo fun awon ebi tabi awon ore re bi?		
50.	Se o lero pe inu ewu lo wa ninu oyun re yii?		
51.	Se enikeni ninu awon ebi oko re gba o ri		

IGBELEWON IGBE-AYE AIBALE -OKAN TO LE FA AISEDEEDE ILERA FUN AWON ALABOYUN.

Se awon nnkan wonyi sele si e lowolowo?

	Orisiirisii	Beeni	Beeko
52.	Iku ara ile to sun mo pekipeki tabi ore		
53.	N je o ni isoro to nii se pelu ile?		
54.	Se o ni isoro to nii se pelu owo?		
55.	Se o padanu ise to n se lowolowo?		
56.	N je o tile ti ni irufe iriri isoro kan lakooko yii? Gege bii omiyale tabi ijamba ina		

IPARI IBERE YII REE E SE E FUN IKOPA YIN.