

**SOCIO-DEMOGRAPHIC DETERMINANTS OF HIGH RISK PREGNANCY IN  
NIGERIA**

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**DSS/12/0600**

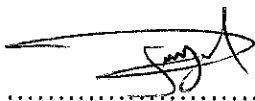
**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF DEMOGRAPHY  
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**CERTIFICATION**

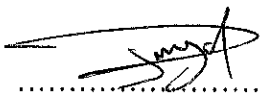
This is to certify that Adedolapo Janet AYILARA of the Department of Demography and Social Statistics, Faculty of Humanities and Social Sciences, carried out a Research on the Topic "SOCIO-DEMOGRAPHIC DETERMINANTS OF HIGH RISK PREGNANCY IN NIGERIA" in partial fulfillment of the award of Bachelor of Science (B.Sc) in Federal University Oye-Ekiti, Nigeria under my Supervision



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## **DEDICATION**

The project is dedicated firstly to almighty God for giving me the strength, help and wisdom to successfully complete this project. I give him alone all the Glory because without him am nothing.

Secondly, I want to dedicate this project to my lovely mum (Mrs Ayilara) for always been there for me. I love you, thanks a lot God bless.

## ACKNOWLEDGEMENTS

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## ABSTRACT

The study is on the socio-demographic determinant of high risk pregnancy in Nigeria. The main objective of this study is to examine high-risk pregnancies by explaining the relationship between the socio- demographic backgrounds of respondents' and high-risk pregnancies. This topic which is built on existing research will help educate women on the risk of spacing children with below two years, giving birth to women below the age of 18, giving birth to children above the age of 35, and giving birth to high number of children.

Both primary and secondary data were explored in the study and quantitative and qualitative techniques of data collection were triangulated for analysis. The quantitative research data sources were derived from 2013 Nigeria Demographic and Health Survey (NDHS). The category of people considered eligible respondents in this study are women (15-49) who are currently pregnant from all the six (6) geo-political regions of Nigeria. Also, in-depth interviews were conducted on 8 key informants drawn from women within the reproductive ages to examine their perception towards high risk.

The result showed that most women see pregnancy below 18 and above 35 as a high risk pregnancy. Also, most women desire to have many children but because of income and poverty and Nigeria current economic meltdown they prefer to have three to four children. And most women see birth spacing less than two years as a risky pregnancy.

The study concluded that marital status, place of residence, region, level of education, ethnicity, religion, occupation, wealth index, number of living children, husband level of education, age at first birth predispose respondents to having high-risk pregnancies.

## CHAPTER ONE

### INTRODUCTION

#### 1.0 BACKGROUND OF THE STUDY

High risk pregnancy is the pregnancy that puts the mother or the developing fetus into a condition that places one or both of them at higher than normal risk for complications, either during the pregnancy (antepartum), during delivery (intrapartum), or following the birth (postpartum) (San, 2004). A high risk pregnancy can be defined as any pregnancy where maternal and/or fetal situation may also cause a detrimental prenatal final result (Ramsey & Goldenberg, 2002). Reproductive health experts define high-risk pregnancies as pregnancies that do occur when mothers' are too young or too old or when children are born at less than a two-year birth interval, or when there are high-birth order children (NPC & ICF Macro, 2009). More than 60,000 maternal deaths in one hundred and fifteen countries indicates that pre-existing clinical situations resulting from being pregnant (which include diabetes, malaria, preeclampsia, HIV, weight problems) brought on 28% of the deaths. Other causes encompass severe bleeding (during pregnancy or/and after childbirth), being pregnant precipitated excessive blood strain, infections, obstructed labour and different direct reasons, abortion headaches, and blood clots (embolism) (WHO, 2015).

Maternal mortality is higher in women living in rural areas and among poorer communities. Nearly eight hundred and fifty women dies from preventable causes related to pregnancy and childbirth. Ninety-nine percent of these deaths occur in developing countries. It has also been noted that young adolescents face higher risk of pregnancy complications and death than older women (WHO, 2015)

In developing countries, less than half of all perinatal mortality and morbidity is associated with pregnancies. Also, High parity, short birth spacing and pregnancy at both extremes of reproductive period (35 above) and been pregnant at early reproductive period (15 below) are factors likely to be associated with high risk pregnancy. Pregnancy in early adolescent and women aged 35 or above increases the danger of preeclampsia and gestational high blood pressure. Mothers who give birth at tender age may experience difficulty in pregnancies and delivery because of their physical immaturity. Women who are old may also experience age-related problems during pregnancy and delivery. A mother is taken into consideration to be "too young" if she is less than 18 years of age and "too old" if she is older than 34 years of age at the time of delivery, "Short birth spacing" is a birth which occurs within 24 months of a previous birth (NPC & ICF Macro, 2009).

Family planning programs advocated two year intervals between births for infant and child health and survival and also because of the health of the mothers. There are several benefits that contribute to these outcomes including a longer time period between births allows a mother more time to recover from pregnancy and delivery, the next pregnancy and birth are more likely to be at full gestation and growth; there is less competition between existing children for breastfeeding, food, nutrition, the mother's time, and other resources (National Research Council, 1989) Therefore, the health of a woman's previous child affects the timing of her next birth. If a child dies, particularly within the first year of life, couples tends to have their next child sooner than if the child survives. Similarly, if a newborn is unhealthy in infancy, couples are more, likely to have another child without waiting as long as they otherwise would. Studies around the world, including Bhutan, Egypt, Kenya, Vietnam and Zimbabwe, show that parents are more likely to have their next child sooner if a

newborn dies than if a new-born survives (Bohler, 1994; Gyimah, 2002; Hoa et al., 1996; Udjo, 1997; Yount et al., 2000). And this leads to high risk pregnancy and serves as a threat to the mother.

Previous record of miscarriage or problems with previous pregnancy or pregnancies or a family history of genetic disorders is also risk factors for a high-risk pregnancy. Even though a woman is healthy when she becomes pregnant, it is possible to develop or be diagnosed with problems during pregnancy which can affect her and the baby (San, 2004). Preterm labor (PTL) and delivery, untimely rupture of membranes, multiple gestation, preeclampsia, diabetes, maternal substance abuse, and vaginal bleeding, are common high risk conditions. A pregnancy can be considered as high risk during the antepartum or intrapartum period. Certainly, lack of adequate antenatal care, in and of itself, is a common high risk condition seen in urban antenatal centers (Ramsey & Goldenberg, 2002).

Pregnancy-related issues are classified as high risk because of issues that arises during pregnancy it directly or indirectly related to the mother's health. These include: untimely labor, multiple births, placenta previa and fetal problems. Untimely labor are child labor that begins before the thirty seventh week of being pregnant. Although there is no specific way to know which women will experience preterm labor or birth, there are factors that place women at higher risk such include certain infections, a shortened cervix, or preceding preterm birth. Multiple pregnancies (Meaning to be conceived of more than one baby (twins, triplets, quadruplets, etc.), which are more common as women are using more infertility remedies increase the risk of untimely labor, gestational diabetes, and pregnancy-induced excessive blood pressure (San, 2004).

Moreover, the likelihood of a mother dying is higher in her first pregnancy than in the second and third. Thereafter, the risk may steadily reduce with successive pregnancies. A birth interval of less than twenty four months is related with higher maternal and fetal risk, while a prolonged interval of more than four years increases the risk, particularly after a period of infertility. Large number of children born by most Nigerian women is another risk enhancing factor as Nigerian women want to have an average of six children (NPC & ICF Macro, 2009).

The difficulty of maternal deaths emerged as an international health concern through the United Nations' call for "Safe Motherhood" in the 1980's. Despite the early advocacy, there appear to be little improvement in maternal health care services in Nigeria. The third goal of Sustainable Development Goal (SDG) aimed to ensure healthy lives and promote well-being for all at all ages with the target to reduce the global maternal mortality ratio to less than 70 per 100,000 live births and additionally to end preventable deaths of newborns and children under five years of age, with all nations aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-five mortality to at least as low as 25 per 1,000 live births (WHO, 2016). Unfortunately, figures released by the WHO and the World Bank show an annual decline in the mortality rate of much less than 1 percent (United Nations, 2006). Mortality associated with pregnancy and delivery complications was highest among poor women in Nigeria (Olusola, 2011).

High-risk pregnancies encompasses both medical and obstetric factors, but this research will focus on some basic factors such as: early pregnancies (before 18 years), late pregnancies (34 years and above), poor birth spacing, continuous child bearing after having large number of children, as well as how socio demographic factors influences them.

## **1.1. STATEMENT OF THE PROBLEM**

Despite all the policies formulated, declarations, conferences and other efforts aimed at reducing maternal deaths across the globe, little have been achieved in terms of maternal mortality reduction in many countries in past twenty years as a result of high risk pregnancy (Shah and Say, 2007)

About one-third of morbidity among women of reproductive age in Africa is related to health problems arising out of pregnancy, childbirth, abortion and reproductive infections (Arkutu, 1995). For instance, it was observed that women in Africa die much more frequently from the complications of pregnancy and childbirth than women in Europe and North America. In a report by World Health Organization (WHO, 2008), Nigeria was identified as the country in the world with the second-highest number of maternal deaths with about 59,000 of such deaths taking place annually. Further, woman in Nigeria has 1 in 8 risk of dying in child birth or from pregnancy-related causes during her life time, which is higher than the overall 1 in 22 risks of women throughout sub-Saharan Africa. (Obadaki, 2009)

The early age at which many Nigerian girls begin child bearing is a serious cause of high risk pregnancy. It was reported that 44 % of women aged 20-24 had given birth before they reach the age 20, 27% before they were 18 years old and 8.5% before they were 15 years old. The figures were much higher in the rural areas most especially in the northern part of the country. The risks of maternal deaths are even greater for some Nigerian women such as those in the Northern region of the country, rural women and low income women without formal education (NPC & ICF Macro, 2000). Most research on maternal mortality and morbidity focused on other causes of maternal mortality and morbidity, ignoring factors related to high-risk pregnancies.

## **1.2 RESEARCH QUESTIONS**

This study seeks to answer the following questions

1. What is the prevalence of high-risk pregnancy in Nigeria?
2. What are the perceptions of women towards high risk pregnancy?
3. What are the socio-demographic factors of high-risk pregnancy in Nigeria?
4. What are the other factors responsible for high-risk pregnancy?

## **1.3 RESEARCH OBJECTIVES**

The main objective of this study is to examine high-risk pregnancies by explaining the relationship between the socio- demographic backgrounds of respondents' and high-risk pregnancies.

The specific objectives of the study are

1. to examine the prevalence of high risk pregnancy in Nigeria
2. to assess the perception of women towards high risk pregnancy
3. to examine the socio-demographic factors of high-risk pregnancy in Nigeria
4. to investigate other factors responsible of high-risk pregnancy in Nigeria

## **1.4 HYPOTHESIS OF STUDY**

The following is the hypothesis postulated for this analysis

1. H0: There is no significant relationship between socio-demographic factors and high risk pregnancy in Nigeria  
H1: There is a significant relationship between socio-demographic factors and high risk pregnancy in Nigeria



### **1.5 JUSTIFICATION OF THE STUDY**

This study will enable demographers to understand more about high risk pregnancies and its various determinants. From previous research, age as a determinant of high risk pregnancy is more emphasized on, whereas other factors such as women level of education, occupation, number of living children e.t.c. are been ignored which this study would consider.

Also this research will enhance policies made on high risk pregnancies such as education policies which will encourage women to be more aware about the risk of pregnancy, also as a means of prolonging the year of marriage and birth, along with the number of children thereby reducing various pregnancy risks to zero minimum. In addition, this research will provide basis for making recommendations that will improve advocacy programs targeted at reducing the prevalence of high risk pregnancies and its associated consequences which include maternal and child mortality and morbidity.

### **1.6 SCOPE AND LIMITATIONS OF STUDY**

The study has limitation as a result of Nigeria Demographic and Health Survey details, because it is defective in measuring the specific women at risk. Also, there is Lack of documentation and record system that monitor pregnancy and childbirth adequately in Nigeria. Moreover, earlier studies on high risk pregnancy have been conducted among small samples, just little is known about the socio-demographic determinants of high risk pregnancy which this research discovered.

## 1.7 OPERATIONAL DEFINITION OF TERMS

- **High-risk pregnancy:** High risk pregnancy is referred to as the pregnancy that is complicated by a serious medical condition which may jeopardize the outcome of the pregnancy.
- **Maternal death:** Maternal death is defined as the death of a woman when pregnant or within 42 days of termination of pregnancy, regardless of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. (Shah and Say, 2007).
- **Premature labor:** Premature labor is labor that begins before the 37th week of pregnancy
- **Low birth weight:** This is a weight at birth of less than 2500 grams irrespective of gestational age.
- **Pre-term:** This is the one who is delivered with a gestational age of less than completed 37 weeks.
- **Post-term:** This is the one who is delivered with a gestational age of more than completed 42 weeks.
- **Preeclampsia :** This is a condition of high blood pressure during pregnancy

## CHAPTER TWO

### LITERATURE REVIEW AND THEORETICAL FRAME WORK

This chapter includes various related literatures, theory and conceptual framework related to the socio-demographic determinants of high risk pregnancy.

#### 2.1.1. OVERVIEW OF HIGH RISK PREGNANCY

High-risk pregnancy can be defined as one which is complicated by a factor or factors that adversely affect the pregnancy maternal outcome or perinatal outcome or both. (Dutta, 2006).

High-risk pregnancy can be defined as pregnancy with a significant chance that the outcome may be less than ideal for either the mother or the infant or both (Omran, Jean & Bashir, 1987).

Based on the history of high risk pregnancy there was no formal or universally accepted definition of a "high-risk" pregnancy before the year 2004, high risk pregnancy is the pregnancy that puts the mother or the developing fetus into a condition that places one or both of them at a higher than normal risk for complications, either during the pregnancy (antepartum), during delivery (intrapartum), or following the birth (postpartum) (San, 2004). High-risk pregnancy is the pregnancy that threatens the health or the life of the mother or her fetus. For most women, early and regular prenatal care promotes a healthy pregnancy and delivery without complications. But some women are at an increased risk for complications even before they get pregnant for a variety of reasons. (San, 2004)

Maternal mortality, which is also known as maternal death, continues to be the major cause of death among women of reproductive age (15-49) in many countries

and remains a serious public health issue especially in developing countries (WHO, 2007).

Maternal Mortality and morbidity associated with pregnancy and delivery complications was highest among poor women of reproductive age of 15-49 in Nigeria (Olusola, 2011). Globally, the estimated number of maternal deaths worldwide increased from 529,000 in 2000 to 536,000 in 2005. Also, 1,500 women die from pregnancy or pregnancy-related complications every day (WHO, 2008). The ratio of maternal mortality in Nigeria is estimated to be 545 deaths per 100,000 live births (Olusola, 2011).

Nigerian women die as a result of pregnancy or birth complications, as about one woman dies every three minutes. This suggests that the maternal mortality rate in Nigeria is about 100 times worse than in the industrialized countries, highlighting what is one of the widest disparities in international public health (National Population Commission & ICF Macro, 2009).

### **2.1.2 CLASSIFICATIONS OF RISK FACTORS IN HIGH-RISK PREGNANCY**

In assessing pregnancies, to determine the risk several key concepts may offer tremendous insight. Human reproduction is a complex social, biochemical and physiological process. (Allan and Decherney, 2003)

Nigeria institute of health (2012) stated that pregnancy can be considered a high risk pregnancy based on many reasons which can be classified into maternal and fetal risk.

- The maternal factors listed by researchers causing high risk pregnancy are; Age (younger than age 15, older than age 35), height (under five feet), more than five previous pregnancies ,weight (pre-pregnancy weight under 100 lb or

obesity), history of complications during previous pregnancies (including stillbirth, fetal loss, preterm labor and/or delivery, small-for-gestational age baby, big baby, pre-eclampsia or eclampsia), bleeding during the third trimester, uterine fibroids, hypertension, gestational diabetes; infections of the vagina and/or cervix; kidney infection; fever; acute surgical emergency (appendicitis, gallbladder disease, bowel obstruction); post-term pregnancy; pre-existing chronic illness (such as asthma, autoimmune disease, sickle cell anemia, tuberculosis, AIDS, heart disease etc.)

- **Other factor include;** Exposure to infection (especially herpes simplex, viral hepatitis, mumps, rubella, varicella etc. exposure to addictive drugs (cigarette smoking, alcohol intake, and illicit or abused drugs). As stated by Nigeria institute of health, 2012 Pregnancies can be regarded high-risk when prenatal tests indicate that the baby has a serious health problem. In such cases, the mother will need special tests, and possibly medication, to carry the baby safely through to delivery (Nigeria institute of health, 2012)

Omran, Jean and Bashir (1987) classified high risk pregnancy into risk during pregnancy and risk during labor and delivery. Risk during pregnancy includes anemia in pregnancy, poor maternal weight gain, abortion, multiple pregnancy, rh-incompatibility, drug abuse, alcohol, smoking, infection especially viral, gestational diabetes, radiation exposure. Risk of labor and delivery includes premature labor, pre-mature rupture of membrane, prolonged labor, postpartum hemorrhage, mal presentation, operative intervention, anesthesia, sepsis.

### **2.1.3 HIGH RISK PREGNANCIES IN NIGERIA**

The prevalence of high risk pregnancy was studied from Nigeria demographic health survey (2013) and it was observed that most Nigerians want larger families. NDHS recommends that younger Nigerian women are more likely to begin sexual activity before marriage compared with their mothers and grandmother this revealed the extent of sexual behavior and its outcome in Nigeria. The median age at first birth is increasing. Among women ages 25-29, the median age at first birth is 20.3 years. In evaluation, for women 35 and older the median age is less than 19 years (NPC & ICF Macro, 2003) Women would like to have a minimum of six children while men would like to have close to nine children. Most of the women gave birth at tender age below 18 (49.68%). This indicates that there is a high prevalence of teenage pregnancy putting both the mother and the fetus into risk. (NDHS, 2013)

In Nigeria, early Childbearing is prevalent as about half of women 25 years and above becoming mothers before reaching the age of 20 years. The median age at first birth is 20 years. The most noticeable differentials occur with respect to regions in Nigeria, most women in the Northern part of Nigeria starts children bearing earlier compared in the Central, Southeast, and Southwest regions. Educated women, especially those with a higher education, start child bearing later compared to those with a primary and secondary education (National Population Commission, 2000).

### **2.1.4 SOCIO-DEMOGRAPHIC FACTORS OF HIGH RISK PREGNANCY**

Several factors have been indicated influencing high risk pregnancy in African countries including Nigeria. For instance a rising trend in advanced maternal age has been observed over the last few decades, particularly in high income countries (WHO, 2008). Age has been seen as one of the factors of high risk pregnancy, the age at

which many Nigerian women begin child bearing is early which leads to high-risk pregnancy. It was reported that 44% of women aged 20-24 had given birth before they were 20 years old. Also, 27% had their first birth before they were 18 years old and 8.5 % had their first child before they were 15 years old. The figures were more prevalent in the rural areas and Northern part of the country (National Population Commission & ICF Macro, 2000). Nearly half of all women in most African countries have their first child before the age of 20. By the age of 15, about 13% of young women in Nigeria have children already while 16% of all births are by teenage girls who are under the age of 18 and 5-8 times more likely to die in pregnancy and child-birth than women in the low risk group 20-24. (National Population Commission & ICF Macro, 2009)

Advanced maternal age is a risk factor for miscarriage, pre-eclampsia, SGA, GDM and Cesarean section, but not for stillbirth, gestational hypertension, spontaneous preterm delivery (Khalil et al. 2013). Extremes of maternal age increase risk of maternal or fetal morbidity and mortality. Women age 35 years or more are at higher risk of PIH, obesity and multiple pregnancy as well as other medical conditions at the time of delivery. They are more prone to Surgery, pre-eclampsia, placenta praevia, and their outcome has high-risk of chromosomal anomalies. (Allan and Decherney, 2003)

The differentials of fertility (such as Age at marriage, ethnicity, use of family planning methods, duration of postpartum amenorrhea and age at menopause) is also related to high risk pregnancies. Ethnicity is very importance in defining age at marriage, acceptability of sexual behavior, use of contraception, initiation of sexuality and the resolution of pregnancies when these occur. A study of Nepal pulled out ethnicity as the most important factor in the determination of the timing of marriage

and of the first birth (which determines high pregnancy risk), much more important than education, religion, urban and rural childhood residence and ecological region. (Paudel, Singh, Jha, Vaishya & mishra 2008)

#### **2.1.5. OTHER FACTORS RESPONSIBLE FOR HIGH-RISK PREGNANCY**

Inadequate antenatal care utilization can help women to identify pregnancy complications and manages it to ensure acceptable maternal and perinatal outcomes. (Patrick Gold et al 2011) Women with singleton pregnancy were observed in Northern England and North Wales to explore the relationship between number of ANC visit and adverse perinatal outcomes. The result revealed an inverse association between number visits and delivery of low birth weight, infant admission to NICU and perinatal mortality, beside the high risk of delivery by C/S. (Vause et al.1995) Among the mothers seen in antenatal period, only 10 to 30% of mothers are been classified as high risk, Out of those mothers, 70 to 80% end up with perinatal mortality or morbidity (Mufti and Mufti, 2007)

In developing countries, 70% of births are preceded by at least one antenatal visit while 38 million women in developing countries die from not receiving the life-saving health care they need as a result of distance from health services, costs, poor quality of available services and insufficient treatment by health providers (WHO, 2005).

In the research aimed to assess the risk status of pregnant women presenting for antenatal care in rural health facility in Ebonyi, southeast Nigeria, It was revealed that a large proportion of rural women with high risk pregnancies go through their pregnancy period without significant modern antenatal care. Also that early antenatal care utilization will help in early detection and correction of pregnancy complications



(Patrick Gold et al 2011). The limitation of these findings is that it does not consider the traditional birth attendance; it focuses mainly on modern antenatal care utilization.

High parity, short pregnancy interval and pregnancy at both extremes of reproductive period, are likely to be associated with adverse outcome of pregnancy (Welbeck, Biritwum and Mensah 2003). Among women in France, it has been investigated that grand multi-parity were more likely to have insulin-dependent gestational diabetes mellitus, but incidence of pre-eclampsia hypertension, prolonged labor, operative deliveries and emergency cesarean sections was comparable. It was also noted that more previous still birth and perinatal death than controls, but no differences in rate of preterm birth. (Roman et al 2004). Perinatal death is higher among people with high parity (parity of 5 or more) which is more common in developing societies (Ezral et al 2001). Most of the indicated dangers of high parity have been gathered in industrialized societies in which, it can be argued that the reproductive pattern, the cultural setting and the maternity care system differ fundamentally from those of developing countries. About 40% of women in the developing countries, compared to 6% of women in the developed countries, have four or more children (Naeye, 1977). The limitation of these studies is that various authors only attributed their findings to adverse influence of high parity.

Globally, pre-eclampsia complicates approximately 2-10% of pregnancies worldwide (Osungbade and Ige 2011). Pre-eclampsia may be a doubtless precarious complication of the second half of pregnancy, labor or early period after delivery which can be achieved. Eclampsia is the end stage of the disorder regarded as by generalized seizures (Redman and Sargent, 2005). In a study relating to high risk pregnancy aimed to study the prevalence of pre-eclampsia for the period of 3 years. The study showed a rising trend in the occurrence of pre-eclampsia over the years,

though the overall prevalence was 1.2%. A little but half of the women were nulliparous and majority had obstetrical delivery. Preeclampsia was connected with iatrogenic preterm deliveries in one-third of the women. A family history of hypertension was the underlying risk factor in a number of women. The limitation of the study was the small sample size analyzed as a result of issues with retrieval of case notes. Also, the study was conducted in a tertiary health care facility which manages high risk pregnancies so its prevalence might be higher than that of the general population. Moreover, the study didn't explore on the marital history of the women to identify pregnancies by new partners as this information was not available within the case notes. (Mary, Mabel and Dorcas, 2014)

Ectopic pregnancy is the most life threatening emergency in pregnancy resulting to maternal death (Lewis, 2007). In Pakistan, It had been investigated that the chance of ectopic pregnancy progressively increases with maternal age and parity leading to high pregnancy risk. (Majhi et al 2007). A retrospective study was designed to evaluate frequency of ectopic pregnancy and to assess the relevance of the known risk factors in four years period in Saudi Arabia. The research acknowledged that previous abortions are major etiological factors for ectopic pregnancy. Moreover, the other factors were IUCD use, previous pelvic surgeries, sterility, previous ectopic and induced conception cycles which can be as a result of a previous pelvic infection that may cause anatomic structure sequelae which puts the woman into risk of child bearing (Aziz, Al Wafi, and Al Swadi 2011) . The limitation of the study was that no control group was assigned so results can't be compared.

Poor nutrition is another factor influencing high risk pregnancy and maternal mortality in African nations. It noted as a practice in several African families that men and boys eat first and have the best part of the meal, followed by the girls and then the

mother also based on the assumption the boys need food more because they need more strength, so they are served more food compared to the male. If the family is poor, this typically implies that women and girls don't get enough to eat, particularly the food that helps them grow as big as they may be. When women are small and especially if their hips are narrow, child labor can be difficult for them and they might not be able to deliver a baby safely (Olaku, 2011). Poor nutrition can cause high pregnancy risk. Being undernourished makes people weak and more vulnerable to disease. Since poor nutrition is prevalent among females, than males in several places, they are more likely to die than suffer from malnutrition. Additionally, women have different needs. Once they begin menstruating or when they are pregnant, they need much more iron in their diets than the way men do. Without sufficient iron, women become anemic, mostly if they are pregnant. (Olaku, 2011) According to research, 50-80% of pregnant women are anemic in several African countries. If a woman becomes pregnant once she is poorly nourished, she is much likely than a well fed woman to suffer from complications of pregnancy. She is also more likely to have a baby that is tiny and underweight (Arkutu, 1995).

As documented by several Demographic and Health Surveys, several African women enter pregnancy in a very state of nutritional deficit and therefore are unprepared to cope with the extra physiological needs of pregnancy. In Eritrea, as an example, 37.3% of women have a low body mass index, which indicates sign of chronic energy deficiency (Eritrea National Statistics and Evaluation Office and ORC Macro 2002). The nutritional deficit, macro- or micronutrient, inclines these women to anemia in pregnancy, among other issues. Anemia is very common in Africa, with up to 3/5 of pregnant women in Africa having some degree of anemia, and about 1/3 classified as having severe anemia (Van den Broek et al. 2000).

The limitation includes Lack of good documentation and record system which monitors pregnancy and childbirth, Expectation and early detection of complications associated with high risk pregnancy to be documented to avert unfavorable outcome. Additionally, several essential risk factors in developing countries are preventable.

## **2.2. REVIEW OF RELATED THEORIES**

### **2.2.1. THEORY OF REASONED ACTION**

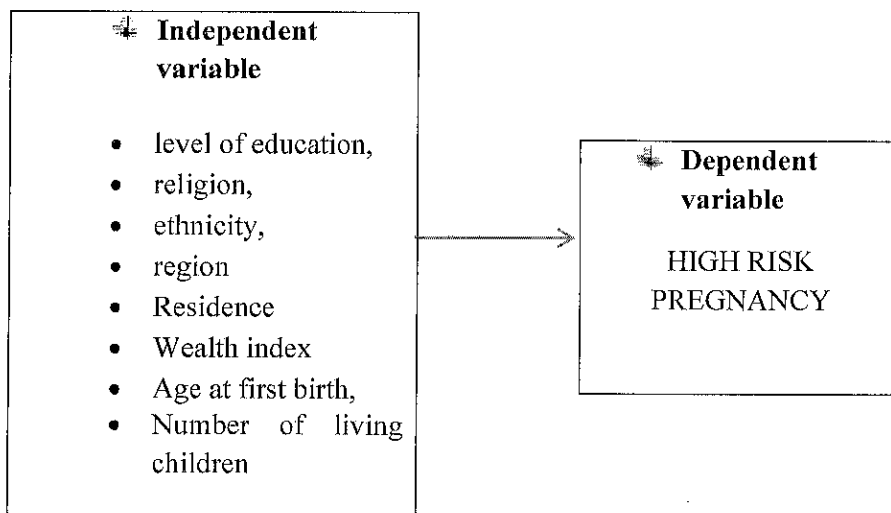
The theory of reasoned action is a cognitive model employed in the decision to engage in a behavior. This theory was propounded by Fishbein & Ajzen (1975). The Theory of Reasoned Action basically discusses how people decide to perform a particular behavior. The theory reasons that people consider their actions before they decide to perform or not perform a precise behavior. The Theory of Reasoned Action proposed that individuals do act upon their intentions. These specific intentions are comprised of 2 major features: an individual's attitude toward a behavior, basically whether it is right or wrong; and an individual's beliefs regarding social pressures to either perform or not perform the behavior. (Spring 2001)

Theory of Reasoned Action can facilitate professionals who worked with teenagers perceive the decision-making process that teens undergo as they contemplate different pregnancy outcomes (Singh & Darroch, 1999). Pregnant teenagers facing such a difficult and life-changing decision deserve compassion and support as they take the "reasoned action" that best fits their unique situation. Sociologists have long been interested in explaining the transition to first sexual intercourse among teenagers not only because it has been linked to unintended pregnancies, early family formation, and STDs (Berman & Hein, 1999; Moore,

Driscoll, & Lindberg, 1998). However, sexual intercourse is a vital marker of adolescent development (Meschke, Bartholomae, & Zentall, 2000). Most of which are targeted on distinguishing socio-demographic characteristics of high risk pregnancy. These factors are important to elucidate because they may ultimately support our understanding of how more distal factors such as residence, family structure, wealth index and social class influence behavior at the individual level (Baumer & South, 2001). One possible implication for this theory would be to use the framework to research the rationale for early marriage, high number of birth, close birth spacing which puts mothers and their child into risk.

### 2.3 CONCEPTUAL FRAMEWORK

Conceptual framework shows the relationship between the independent variables, dependent variables and intervening variables. The independent variables are the socio-demographic variable (such as level of education, religion, ethnicity, region, residence wealth index, age at first birth, and number of living children). The dependent variable is high risk pregnancy.



Author source 2016

## CHAPTER 3

### RESEARCH METHODOLOGY

This chapter explains the study area, sample design and sample size, data sources, target populations, the dependent and independent variable, method of data processing and analysis and also the limitation of the study

#### 3.1 BACKGROUND OF THE STUDY AREA

Nigeria is a land of diversity, rich cultural and natural potentials, beautiful climate, with over 270 distinct tribes and more than 374 languages. Nigeria came into being as a nation state in 1914 through the integration of the Northern and Southern protectorates. Before that time, there were varied separate cultural, ethnic, and linguistic groups, like the Oyo, Benin, Nupe, Hausa-Fulani empires and so on. Within the early nineteen fifties, Nigeria achieved partial independence and also with a legislature in which the majority of its members were elected into an executive council of which most were Nigerians.

Nigeria became totally independent on October 1st 1960 as a federation of 3 regions (northern, western, and eastern). Nigeria has several social groups with distinct cultural traits with about 374 recognizable ethnic groups, with the Hausa, Yoruba, and Igbo as the major groups. The Federal republic of Nigeria is about 923,768sqkm (landmass that is roughly 910,768sqkm and water that is approximately 13,000sqkm).

Nigeria is located on the west coast of Africa. Nigeria is referred to as "THE GIANT OF AFRICA" neighboring the gulf of guinea, in the middle of Benin and Cameroon. Presently, Nigeria is made up of thirty six (36) states and a federal capital

territory (FCT), which is classified into six geopolitical zones which includes north central, north east, North West, South east, South South, and South west. There are seven hundred and seventy four constitutionally recognized local government areas in the country (NDHS, 2013)

Based on the most recent world organization estimates, Nigeria's current population is 186,084,702 as of Tuesday, April 26, 2016. Nigeria population is approximately 2.48% of the total world population. Nigeria ranks seven in the list of countries by population; the population density in Nigeria is 205 per km<sup>2</sup> (532 people per mi<sup>2</sup>). (United Nations, 2016)

## **3.2 METHOD OF INVESTIGATION**

### **3.2.1 QUANTITATIVE METHOD**

The research data sources is gotten from the Nigeria demographic and health survey (NDHS) 2013

### **3.2.2 QUALITATIVE METHOD**

An in-depth interview was also be used to examine the perception of women towards high risk pregnancy using a sample of eight women who are currently pregnant in Oye, Ekiti state.

## **3.3 SAMPLE DESIGN AND SAMPLE SIZE FOR NDHS 2013**

Nigeria demographic and health survey (NDHS) 2013 sample was nationally representative. The survey used a sampling frame list of enumeration areas (EAs) prepared for the 2006 Population Census of the Federal Republic of Nigeria, provided by the National Population Commission. The sample was designed to provide

population and health indicator estimates at the national, zonal, and state levels. The sample design was certified for specific indicators to be calculated for each of the six zones, 36 states, and the Federal Capital Territory, Abuja.

Administratively, Nigeria is divided into different states. Each state is subdivided into local government areas (LGAs), and each LGA is divided into localities. The sample was selected using a stratified three-stage cluster design consisting of 904 clusters, 372 in urban areas and 532 in rural areas. A representative sample of 40,680 households was selected for the survey, with a minimum target of 943 completed interviews per state. All women age 15-49 who were either permanent residents of the households in the 2013 Nigeria Demographic and Health Survey sample or visitors present in the households on the night before the survey were eligible to be interviewed. The number of women interviewed between the ages of 15-49 is 38948

### **3.4. TARGET POPULATION**

The category of people considered eligible respondents in this study are women (15-49) who are currently pregnant from all the six (6) geo-political regions of Nigeria.

### **3.5 MEASUREMENTS OF VARIABLES**

The analysis examined the socio demographic factors and high risk pregnancy in Nigeria, the general binary logistic regression model used for the multivariate analysis is:

$$\text{Log} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots \beta_n x_n$$

Where p = probability of high risk pregnancy, when Y=1



$x_1-x_n$  = predictor variables

$\beta_0, \beta_1 - \beta_n$  = regression coefficients

### **3.5.1. DEPENDENT VARIABLE: (HIGH RISK PREGNANCY)**

High risk pregnancy is measured using NDHS variables such as birth interval (b11\_01), Children ever born (v201), and Age (v012). Age (v012) was re-categorized into three 15-17 years coded as 1, 18-34 years coded as 2, 35-49 years coded 3. Children ever born was re-categorized into two: less than five which is coded as 1 and children more than five which is coded 2. Birth interval was also re-categorized into short interval (below 24 months) which is coded 1 and normal interval (above 24 month) which is coded 2. This variables were further re-categorized for the main benefit of this research into women with **no risk** (within the age of 18 to 34 years, those who have less than five (5) children, and those with optimum birth spacing (minimum of 2 years) are coded 0 and those at **risk** (younger than 18 years of age, above the age of 34, those who have more than five (5) children and those that space their children less than 2 years) are coded 1

### **3.5.2 INDEPENDENT VARIABLES: (SOCIO-DEMOGRAPHIC CHARACTERISTICS)**

The socio-demographic variables are marital status, Place of residence, Region, Level of education, ethnicity, Religion, Occupation, Wealth index, Number of living children, Husband level of education, age at first birth, use and non-use of contraceptive.

#### **✚ Marital Status**

Nigeria demographic and health survey (NDHS) grouped women current marital status into 6 categories i.e. never in union, married, living with partner, widowed, divorced, No longer living together/separated it is coded as v501

#### ✦ **Place of Residence**

The type of place of residence is grouped into two categories i.e. the rural and urban area according to the Nigeria demographic and health survey (NDHS).it is coded as v025

#### ✦ **Region**

Region in Nigeria is divided into six (6) categories by the NDHS 2013. They are the North central, North-east, North-west, South-east, South-south, and South-west. It is coded as v024

#### ✦ **Level of Education**

Level of education is a categorical variable that is divided into four categories. These are no education, primary, secondary and higher education. Which is coded by the NDHS as v106 (highest level of education)

#### ✦ **Religion**

Religions of the respondent were measured in 5 categories; the groups were Catholics, Christians, Islam, traditional, and others. Religion is coded as v130

#### ✦ **Ethnicity**

This is coded by NDHS as v131 which was recoded into 4 categories namely; Hausa/Fulani Igbo Yoruba and Others

#### ✦ **Occupation**

Respondent's occupation was re-grouped into not working, and working. This is coded by NDHS 2013 as v717

#### ✚ **Wealth Index**

Respondent wealth is classified into poorest, poorer, middle, richer and richest which is coded as v190 by NDHS 2013

#### ✚ **Number of Living Children**

The number of living children is coded as v218. It was re-categorized into 0, 1-2, and 3+

#### ✚ **Husband Level of Education**

This is a categorical variable that is divided into four categories. These are no education, primary, secondary and higher education. Which is coded by the Nigeria demographic and health survey (NDHS) as v701.

#### ✚ **Age at First Birth**

Age at first birth is coded by NDHS 2013 as v212 But regrouped into three categories which includes younger than 18 coded as 1, 18-30 coded as 2 and 30 above coded as 3.

#### ✚ **Ever Used Contraceptive**

This is coded by NDHS 2013 as v302a (Ever used anything or tried to delay or avoid getting pregnant). This variable is re-coded into yes and no.

### **3.6 ETHICAL CONSIDERATION**

For the in-depth interview, the researcher explained her intentions and gained acceptability through composing herself in a polite way in carrying out the research

by taking into consideration the ethics of research such as Voluntary participation, No emotional or physical harm to subjects, Privacy, anonymity and confidentiality.

### **3.7 DATA ANALYSIS TECHNIQUES**

#### **3.7.1. QUANTITATIVE DATA ANALYSIS**

The Nigeria demographic and health survey (NDHS) data sets from 2013 individual recode will be processed and analyzed using STATA application package (STATA 12.0). The univariate analysis will be carried out using tables of frequency distribution to describe the socio-demographic characteristics of respondent. The bivariate analysis will also be used using chi-square. Furthermore, logistic Regressions using odds ratio will be used in the multivariate analysis in determining high risk pregnancy in the study area. In addition to this, a parametric test will also be used using Kappa statistics to test the level of agreement.

#### **3.7.2. QUALITATIVE DATA ANALYSIS**

For the in-depth interview manual content analysis will be used in examining the perceptions of women towards high risk pregnancy.

## CHAPTER FOUR

### DATA ANALYSIS AND INTERPRETATION

This chapter consists of both the qualitative and quantitative data analysis and also the interpretation using univariate, bivariate and multivariate level of analysis

#### 4.1 QUANTITATIVE ANALYSIS

Table 4.1.1: women socio demographic characteristics

CHARACTERISTICS	FREQUENCY	PERCENTAGE (%)
<b>Marital status</b>		
Never in union	23	0.64
Married	3,408	95.25
Living with partner	108	3.02
Widowed	14	0.39
Divorced	12	0.34
No longer living together/separated	13	0.36
<b>Residence</b>		
Urban	1,115	31.16
Rural	2,463	68.84
<b>Region</b>		
North Central	487	13.61
North East	763	21.32
North West	1,245	34.80
South East	280	7.83
South South	402	11.24
South West	401	11.21
<b>Ethnicity</b>		
Hausa/Fulani	1,526	42.65
Igbo	341	9.53
Yoruba	342	9.56
Others	1,369	38.26
<b>Level of education</b>		
No education	1,777	49.66
Primary	703	19.65
Secondary	905	25.29
Higher	193	5.39
<b>Religion</b>		
Christian	1,311	36.64
Islam	2,212	61.82
Traditionalist	51	1.43
Others	4	0.11

<b>Occupation</b>		
not working	1,121	31.33
Working	2,457	68.67
<b>Wealth index</b>		
Poorest	876	24.48
Poorer	848	23.70
Middle	706	19.73
Richer	653	18.25
Richest	495	13.83
<b>Husband level of education</b>		
No education	1,395	39.24
Primary	682	19.18
Secondary	1,047	29.45
Higher	419	11.79
Don't know	12	0.34
<b>Age at firth birth</b>		
younger than 18years	1,897	53.02
18-29 years	1,600	44.72
30 years above	81	2.26
<b>Ever use contraceptive</b>		
No	2,974	83.12
Yes	604	16.88
<b>Number of living children</b>		
0	111	3.10
1-2	1,621	45.30
3+	1,846	51.59
<b>High risk pregnancy</b>		
no risk	1,801	50.34
high risk	1,777	49.66
<b>Total</b>	<b>3,578</b>	<b>100.00</b>

Source: NDHS, 2013

The research is based on respondent's who are currently pregnant. All respondents for the survey were women, who are currently pregnant. Therefore sex was not included as a variable in the socio-demographic characteristics of the respondent's. Also age of respondent was not also included because it has been included as a measure of dependent variable.

Most of the respondent are currently married (95.25%) while less than 1% are never in union (0.64%), those living with partner represent only (3.02%), widowed

(0.39%), divorced (0.34%), no longer living together/separated (0.36%). This signifies that most of the pregnant women are married

Larger percentage of the women live in rural areas (68.84%) compared to 31.16% who reside in urban areas

North West has the highest percentage of respondents (34.80%) while the lowest percentage of respondents are found in the south eastern part of Nigeria (7.83%)

Most of the respondents are Hausa/Fulani (42.65%) compared to Igbo (9.53%) and Yoruba (9.56%)

Most of the respondents are educated with minimum of primary school education, only 19.65% of the respondents are not educated. This is also similar to World Bank research that a higher percentage of Nigerians have at least, a primary education, putting Nigeria's literacy rate at 49.66% (World Bank, 2015)

Almost 62% of the respondent are Muslim, 36.64% are Christian while 1.43% practice traditional religion

Most of the respondents are in the poorest and poorer category, 24.48% and 23.70% respectively compared to those who are richer and richest category 18.25% and 13.83% respectively. Similar to this findings, Nigerian Bureau of Statistics (2010) also find out that 60.9 % of Nigerians live below the poverty line of \$1 per day.

Most of the respondents are working (68.67%) in one way or the other in order to earn a living

Thirty-nine percent of the respondents' husband are not educated, 19.06% had primary education while about 12% attained higher level of education

Most women had their first birth younger than 18 years of age (53.02%), 44.72% of respondents within age 18-29 years. Only 2.26% had their first birth above 30 years.

Most of the women never used contraceptive to delay or space their current pregnancy (83.12%) while 16.88% have used contraceptive to delay or space their current pregnancy.

There is larger percentage of women who have more than three children (51.59%)

**Table 4.1.2: Chi-square analysis on Socio-Demographic Factors of High-Risk Pregnancy in Nigeria**

CHARACTERISTICS	PREGNANCY RISK		TOTAL (%)	$\chi^2$ and P-VALUE
	NO RISK (%)	HIGH RISK (%)		
<b>Marital Status</b>				
Never in union,	20 (86.96)	3 (13.04)	23 (100)	25.7463 0.000
Married	1,695(49.74)	1,713 (50.26)	3,408 (100)	
Living with partner	71 (65.74)	37 (34.26)	108 (100)	
Widowed	6 (42.86)	8 (57.14)	14 (100)	
Divorced	5 (41.67)	7 (58.33)	12 (100)	
No longer living together/separated	4 (35.71)	9 (64.29)	13 (100)	
<b>Place of Residence</b>				
Urban	610 (54.71)	505 (45.29)	1,115 (100)	12.3913 0.000
Rural	1,191 (48.36)	1,272 (51.64)	2,463 (100)	
<b>Region</b>				
north central	290 (59.55)	197 (40.45)	487 (100)	49.8462 0.000
north east	358 (47.05)	404 (52.95)	763 (100)	
Northwest	555 (44.58)	690 (55.42)	1,245 (100)	
south east	147 (52.50)	133 (47.50)	280(100)	
south south	214 (53.23)	188 (46.77)	280 (100)	
south west	236 (58.85)	165 (41.15)	401 (100)	
<b>Ethnicity</b>				
Hausa/Fulani	689 (45.15)	837 (54.85)	1,526 (100)	40.9828 0.000



Igbo	180 (52.79)	161 (47.21)	341 (100)	
Yoruba	215(62.87)	127 (37.13)	342 (100)	
Others	717 (52.37)	652 (47.63)	1,369 (100)	
<b>Level of Education</b>				
No education	789 (44.40)	988 (55.60)	1,777 (100)	119.4715 0.000
Primary	316 (44.95)	387 (55.05)	703 (100)	
Secondary	595 (65.75)	310 (34.25)	905 (100)	
Higher				
higher education	101(52.33 )	92 (47.67)	193 (100)	
<b>Husband level of education</b>				
no education	607(43.51)	788 (56.49)	1,395(100)	55.3642 0.000
Primary	333 (48.83)	349 (51.17)	682 (100)	
Secondary	610 (58.04)	437 (41.96)	1,047(100)	
higher education	226(53.94)	193 (46.06)	419 (100)	
don't know	5 (41.67)	7 (58.33)	12 (100)	
<b>Occupation</b>				
Not working	646 (57.63)	475 (42.37)	1,121 (100)	34.7202 0.000
Working	1,155 (47.01)	1,302(52.99)	2,466(100)	
<b>Wealth index</b>				
Poorest	381 (43.49)	495 (56.51)	876 (100)	45.5194 0.000
Poorer	402 (47.41)	446 (52.59)	848(100)	
Middle	355(50.28)	351(49.72)	706 (100)	
Richer	369 (56.51)	284 (43.49)	653(100)	
Richest	294 (59.39)	201(40.61)	495 (100)	
<b>Religion</b>				
Christian	725 (55.30)	586(44.70)	1,311(100)	31.3338 0.000
Islam,	1,062(48.01)	1,150 (51.99)	2,212 (100)	
Traditional	13(25.49)	38(74.51)	51(100)	
Others	1(25.00)	3 (75.00)	4 (100)	
<b>Total</b>	<b>1,801 (50.34)</b>	<b>1,777 (49.66)</b>	<b>3,578 (100)</b>	

Source: NDHS 2013. P-value <0.05

In table 2, (bi-variate analysis)

As shown in the table 4.2, women who are no longer living together or separated are more at risk of high risk pregnancy (86.96%) with chi-square at

25.7463. The table shows that there is a significant relationship between marital status and pregnancy risk. A high proportion of pregnant women in the rural area (51.64%) are at risk compared to those in the urban area (45.29%). This is significant at  $p < 0.05$ . The highest percentage of pregnant women who are predominantly at risk can be found in Northwest, Nigeria (55.42%) while north central has the lowest percentage of risk (40.45%). There is a significant relationship between region and pregnancy risk. Compared with all other ethnic group, Hausa/Fulani women have the highest percentage of high risk pregnancy (54.85%). There is also a significant relationship between the level of education of women and high risk pregnancy. It has been observed that women who are not educated are mostly exposed to high risk pregnancy (55.60%) compared to those who attended primary, secondary and higher education.

In the same vein, there is a significant relationship between respondents' occupation and high risk pregnancy. Women that are working are more at risk (52.99%) compare to those who are not working (42.37%). Those women that are working are more involved in a lot of activities which are more stressful and can affect their health. Wealth index has also been seen to be significantly related to high risk pregnancy. It has been observed that poor people are more at pregnancy risk compared to rich people because poor people do not have access to health care facilities and most of them are not educated. Religion is also significantly related to high risk pregnancy. Husband level of education is also significantly related to high risk pregnancy.

**Table 4.1.3: Chi-square Analysis on other factors of high risk pregnancy**

CHARACTERISTICS	PREGNANCY RISK		TOTAL (%)	$\chi^2$ & P-VALUE
	NO RISK (%)	HIGH RISK (%)		
<b>AGE AT FIRST BIRTH</b>				
younger than 18years,	909 (47.92)	988 (52.08)	1,897 (100)	44.4651 0.000
18-29 years	875 (53.24)	725 (46.76)	1,600 (100)	
30 years above	17 (20.99)	64 (79.01)	81 (100)	
<b>Contraceptive use</b>				
No	1,479 (49.73)	1,495 (50.27)	2,974 (100)	2.5742 0.109
Yes	322 (53.31)	282(46.69)	604 (100)	
<b>Number of living children</b>				
0	90 (81.08)	21 (18.92)	111 (100)	868.755 0.000
1-2	1,222 (75.39)	399 (24.61)	1,621 (100)	
3+	489 (26.49)	1,357 (73.51)	1,846(100)	
<b>Total</b>	<b>1,801 (50.34)</b>	<b>1,777 (49.66)</b>	<b>3,578(100)</b>	

Source NDHS, 2013

As presented in table 4.3, there is a significant relationship between age at first birth and pregnancy risk. Most people who had their first child above age 30 are more at risk (79.01%) followed by women younger than the age of 18 years (52.08%). There is a significant relationship between number of living children and high risk pregnancy. Most of the women at risk are those women who have more than three (3) children (73.51%) compared to women without children (18.92%)

There is no significant relationship between contraceptive use and high risk pregnancy.

**Table 4.1.4: Logistic Regression Analysis on High Risk Pregnancy by Socio-Demographic Characteristics**

VARIABLE	Odds Ratio	Std. Err.	Z	P-value	Confidence Interval (95%)	
					Lower limit	Upper limit
<b>marital status</b>						
Never in union,	<b>1.0(RC)</b>					
Married	2.37	1.59	1.29	0.197	.63	8.83
Living with partner	2.01	1.42	0.99	0.324	.50	8.072
Widowed	1.88	1.75	0.68	0.496	.30	11.73
Divorced	6.32	5.93	1.97	0.049**	1.00	39.77
No longer living together/separated	7.87	7.40	2.20	0.028**	1.24	49.68
<b>Region</b>						
north central	<b>1.0(RC)</b>					
north east	1.60	.24	3.15	0.002**	1.19	2.15
Northwest	1.81	.29	3.66	0.000**	1.32	2.50
south east	1.51	.47	1.34	0.181	.82	2.80
south south	1.91	.34	3.60	0.000**	1.34	2.73
south west	1.71	.35	2.57	0.010**	1.13	2.58
<b>Place of residence</b>						
Urban	<b>1.0(RC)</b>					
Rural	1.05	.12	0.50	0.617	.84	1.32
<b>Ethnicity</b>						
Hausa/Fulani	<b>1.0(RC)</b>					
Igbo	1.13	.33	0.42	0.675	.63	2.02
Yoruba	.65	.15	-1.82	0.068	.41	1.03
Others	.94	.12	-0.42	0.674	.72	1.23
<b>Level of education</b>						
no education	<b>1.0(RC)</b>					
Primary	.95	.11	-0.35	0.724	.75	1.21
Secondary	.60	.08	-3.54	0.000**	.45	.79
higher education	.93	.21	-0.27	0.791	.59	1.48
<b>Religion</b>						
Christians	<b>1.0(RC)</b>					
Islam,	1.01	.14	0.11	0.913	.76	1.34
Traditional	2.29	.87	2.17	0.030**	1.08	4.84
Others	7.15	8.64	1.63	0.103	.67	76.30
<b>Respondent occupation</b>						
not working	<b>1.0(RC)</b>					
Working	1.39	.12	3.64	0.000**	1.16	1.65
<b>Wealth index</b>						
Poorest	<b>1.0(RC)</b>					

Poorer	.92	.10	-0.67	0.502	.73	1.16
Middle	.94	.12	-0.44	0.662	.72	1.22
Richer	.83	.13	-1.18	0.239	.61	1.13
Richest	.87	.17	-0.69	0.490	.58	1.29
<b>Age at first birth</b>						
younger than 18years	<b>1.0(RC)</b>					
18-30 years	1.19	.10	2.06	0.040**	1.00	1.42
30 years above	13.75	4.22	8.55	0.000**	7.54	25.10
<b>Number living children</b>						
0	<b>1.0(RC)</b>					
1-2	1.60	.41	1.82	0.069	.96	2.67
3+	13.95	3.62	10.14	0.000**	8.38	23.22
<b>Constant</b>	<b>.044</b>	<b>.03</b>	<b>-4.10</b>	<b>0.000</b>	<b>.01</b>	<b>.19</b>

Source: NDHS, 2013 \*\* P<0.05, No symbol refers to no significant association

Women who are divorced are 32% more likely to be involved in high risk pregnancy than women never in union, women who are no longer living with their spouse and those separated are 87% more likely to be at risk than women never in union. Women in the north east are 60% more likely to be at risk compared to women in the north central. Women who attended secondary school education are 60% less likely to have high risk pregnancy compared to those without education. Women who practice Traditional religion are 29% more likely to be at risk of high risk pregnancy compared to the Christian. Those who are working are 39% more likely to be in high risk pregnancy compared to those who are not working. Women who are 30 years above are 75% more likely to be in high risk pregnancy compared to those who are younger than 18 years. Moreover, women ages 18-30 years are 19% more likely to have high risk pregnancy compared to those who are younger than 18 years. Women who have more than three children are 95% more likely to be at risk compared to those who do not have children

#### 4.1.5 Parametric Tests

In examining the relationship between socio-demographic factors and high risk pregnancy, the study adopts the use of Kappa statistics in order to examine the level of agreement between the dependent and independent variables.

Table 4.5.1: Kappa statistics showing the level of agreement between socio-demographic and high pregnancy

Variables	Agreement	Kappa	Standard error	Z	P-value
Marital status	48.43%	0.0154	0.0040	3.82	0.0001
Residence	14.11%	-0.0161	0.0046	-3.52	0.9998
Region	5.51%	-0.0134	0.0031	-4.37	1.0000
Ethnicity	23.39%	0.0281	0.0052	5.35	0.0000
Level of education	32.87%	-0.0290	0.0099	-2.91	0.9982
Religion	16.38%	-0.0222	0.0049	-4.52	1.0000
Occupation	15.77%	0.0271	0.0046	5.89	0.0000
Wealth index	13.83%	0.0191	0.0041	4.66	0.0000
Husband level of education	26.89%	-0.0331	0.0087	-3.78	0.9999
Age at first birth	27.61%	0.0174	0.0057	3.07	0.0011
Contraceptive use	49.22%	-0.0202	0.0126	-1.60	0.9457
Number of living children	13.67%	-0.1369	0.0061	-22.48	1.0000

Source NDHS, 2013

As presented in Table 4.5, marital status is 48.43% level of agreement with high risk pregnancy, Residence of respondent is 14.11% level of agreement with high risk pregnancy. The region of respondent is 5.51% level of agreement with high

risk pregnancy. Also, Ethnicity is 23.39% in agreement with high risk pregnancy. Level of education has 32.87% level of agreement with high risk pregnancy. Moreover, Religion also been seen to be 16.38% level of agreement with high risk pregnancy. Occupation is also seen to be 15.77% level of agreement with high risk pregnancy. Wealth index is 13.83% level of agreement with high risk pregnancy. Husband level of education is 26.89% level of agreement with high risk pregnancy. Age at first birth is 27.61% level of agreement with high risk pregnancy. Contraceptive use is 49.22% level of agreement with high risk pregnancy. Number of living children is 13.67% in agreement with high risk pregnancy.

## 4.2 QUALITATIVE ANALYSIS

An in-depth interview was employed on perception of women towards high risk pregnancy

In response to the question on whether becoming pregnant at an age below 18 is a high-risk pregnancy or not, one of the respondent (33 years, teacher) said that:

*"If someone is below 18 years of age, the person may not be mature enough to carry the baby and if the woman ended up becoming pregnant it may lead to tears and anemia during birth, so the person should be more than 22 years before having their first birth"*

Another respondent (33year, trader) said that;

*"Someone must be mature before becoming pregnant, because someone below 18 years is too small without maturity and also the person do not have stature, before a woman can be pregnant the woman must have what women have such as kitchen utensil. Also, the person must have work to avoid poverty"*

In response to the question on whether becoming pregnant at an age above 35 years is a high-risk pregnancy or not, one of the respondent (29 years, civil servant) said that;

*"By 35 years the body will be too old and may not have the strength to push the baby out with this the mother can die and also born an already dead child"*

In response to the question on whether having many children is a high-risk pregnancy or not, one of the respondent (28 years, hair dresser) said that

*"Any number of children a person wishes to born the person can born like 3 or 4 but in the current situation of Nigeria now 3 is ok. Because the money someone ought to be using to feed 3 people are now used to feed 7 people so the mother and children will not eat very well and they will fall sick this can cause kwashiorkor and any other diseases"*

Another respondent (29 years, civil servant) said that;

*"In the issue of previous operation experience it is advisable to give birth to 3 children and some can risk 4 and for those who do not undergo operation 5 is ok"*

Another respondent (31 years, fashion designer)

*"If the person can take care of the children any number is ok based on income of the mother to avoid poverty"*

In response to the question on can poor spacing cause a high-risk pregnancy or not, one of the respondents (33 years, teacher) said that



*"Because of the blood that use to come out during delivery, it out to be more than two years to retain blood in other to avoid shortage of blood and also during delivery birth will be easy she will put herself in too much stress during delivery"*

In response to the question if lack of family planning can cause high risk pregnancy a respondent (30 years, teacher) said that:

*"Lack of family planning can make someone be of high risk pregnancy because people the person will not be able to space their birth very well. breast feeding properly can help you space your child but have seen someone that it does not work with, the person became pregnancy after three month after giving birth so it is advisable to do family planning, like me now, I have 3 children between my first child and second child is 3 years and second child and this current pregnancy is 5 years due to family planning because after 6weeks you must be able to succumb to your husband"*

In response to the question if lack of antenatal care utilization can cause high risk pregnancy a respondent (33 years, trader) said that:

*"Regular medical checkups will prevent putting the baby and the mother into danger, so early detection will help save the mother and baby. There are some things that the nurses use to tell us that will help us during and after delivery also they use to advise us to use family planning to space our children, also pregnant women are examined by nurses and those who might have problem during pregnancy will have been known and be given adequate attention before day of delivery"*

#### 4.6 Discussion of Findings

The study had shown that there is a significant relationship between marital status and high risk pregnancy therefore we reject the null hypothesis that there is a significant relationship between marital status and high risk pregnancy.

The chi square also shows that there is a significant relationship between place of residence and high risk pregnancy at Pearson chi square (1) =12.3913 and  $p < 0.05$ .

Therefore retain the alternate hypothesis

The region of respondents is also statistically significant related to high risk pregnancy using chi square at Pearson  $\chi^2$  (5) = 49.8462 and  $p < 0.05$ . We therefore conclude that there is a significant relationship between region and high risk pregnancy. Therefore retain the alternate hypothesis

Ethnicity also has a significant relationship with high risk pregnancy with Pearson (3)  $\chi^2 = 40.9828$  and  $p < 0.05$ . We therefore conclude that there is a significant relationship between Ethnicity and high risk pregnancy. Therefore retain the alternate hypothesis

The Level of education is also statistically significant with high risk pregnancy at Pearson  $\chi^2$  (3) = 119.4715 and  $p < 0.05$ , we therefore conclude that there is a significant relationship between Level of education and high risk pregnancy. Therefore retain the alternate hypothesis

The chi square also shows that there is a significant relationship between religion and high risk pregnancy at Pearson  $\chi^2$  (3) = 31.3338 and  $p < 0.05$  Therefore retain the alternate hypothesis

Occupation also has a significant relationship with high risk pregnancy with Pearson (3)  $\chi^2 = 34.7202$  and  $p < 0.05$ . We therefore conclude that there is a significant relationship between Occupation and high risk pregnancy. Therefore retain the alternate hypothesis

Wealth index also has a significant relationship with high risk pregnancy with Pearson (4)  $\chi^2 = 45.5194$  and  $p < 0.05$ . We therefore conclude that there is a significant relationship between wealth index and high risk pregnancy. Therefore retain the alternate hypothesis

The husband level of education is also statistically significant related to high risk pregnancy using chi square at Pearson  $\chi^2 (5) = 55.3642$  and  $p < 0.05$ . We therefore conclude that there is a significant relationship between husband level of education and high risk pregnancy. Therefore retain the alternate hypothesis

The age at first birth is also statistically significant related to high risk pregnancy using chi square at Pearson  $\chi^2 (2) = 44.4651$  and  $p < 0.05$ . We therefore conclude that there is a significant relationship between age at first birth and high risk pregnancy. Therefore retain the alternate hypothesis

The Pearson chi-square test shows that there is also a significant relationship between the number of living children and high risk pregnancy at Pearson  $\chi^2 (2) = 868.7551$  and  $p < 0.05$ . This indicates that the number of living children of women is significant with high risk pregnancy. Therefore, we fail to accept the null hypothesis.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

#### 5.1 Summary

The objectives of this study were to examine the prevalence of high risk pregnancy in Nigeria, to examine the socio-demographic factors of high-risk pregnancy in Nigeria, to investigate other factors responsible for high-risk pregnancy, and to assess the perception of women towards high risk pregnancy.

In order to achieve these objectives, a survey was carried out among women in Nigeria. The research used Nigeria demographic health survey 2013. Also an in-depth interview of 8 samples was conducted to examine the perception of women towards high risk pregnancy.

Chapter two covered the research topic at large, exploring the theories and literatures of other people who have worked in relating to the socio-demographic determinant of high risk pregnancy.

Chapter three shows the research study area, sample design and sample size, data sources, target populations, the dependent and independent variable, method of data processing and analysis done at univariate, bi-variate, and multivariate levels. The univariate analysis which was the frequency table, expressed mainly in terms of percentages, Bi-variate analysis which was to examine the relationship between and among variable, while analysis was done using logistic regression

In chapter four, results were presented and the stated hypotheses were tested using regression method. The study analyzed data from the individual recode data of the NDHS 2013. The study populations include women between ages 15-49 which are

38948. Out of which 4493 people are currently pregnant. The uni-variate analysis was carried out using tables of frequency distribution to describe the socio-demographic characteristics of respondent. The bivariate analysis also used using chi-square to examine the relationship between socio-demographic variables and high risk pregnancy. Furthermore, logistic regressions using odds ratio was used in the multivariate analysis to determine the extent of the relationship between socio-demographic factors and high risk pregnancy in the study area.

Chi-square test and logistic regression showed the relationship between socio-demographic factors and high risk pregnancy. The study showed that marital status, place of residence, region, level of education, ethnicity, religion, occupation, wealth index, number of living children, husband level of education, age at first birth are significantly related to high risk pregnancy.

Based on the perception of women towards high risk pregnancy, most women see pregnancy below 18 and above 35 as high risk pregnancy. Also, most women desire to have many children but because of income and poverty and Nigeria current economic meltdown they prefer to have three to four children. And most women see birth spacing less than two years as dangerous and could lead to risky pregnancy.

### **5.3 Conclusion**

From the study, women who are educated are at lesser risk than the uneducated ones, it can therefore be inferred from this that education is a good determinant of pregnancy status. Other variables such as wealth status, husband level of education, age at first birth, number of living children are also good determinants of pregnancy status.

It was observed that people who have their first child less than 18 years are common in Nigeria. Also people who have more than three children are very

common. To reduce the rate of maternal mortality in Nigeria, there should be more enlightenment about the risk of birth below age 18, above age 35, having more children than five and birth interval of below two years

#### **5.4 Recommendations**

This study also recommended that women within their reproductive ages should be educated during their antenatal visits on how to use family planning to space and limit their pregnancies; education of women will help postpone the age at first marriage.

Also to avoid maternal deaths, an early pregnancy needs to be avoided. The use of contraceptive is recommended to delay and prevent pregnancy.

In addition, women should be educated more on the risk involved in large number of children and close birth interval of less than two years; also early pregnancy below 18 years, and late age of pregnancy above 34 years of age.

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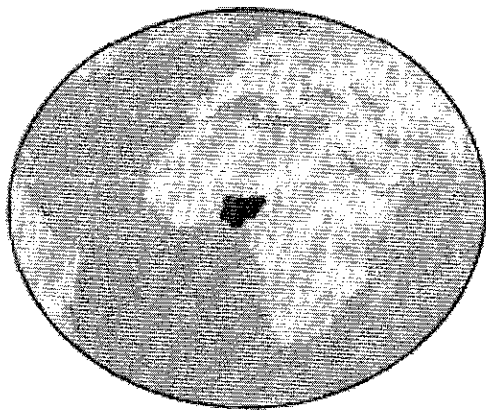
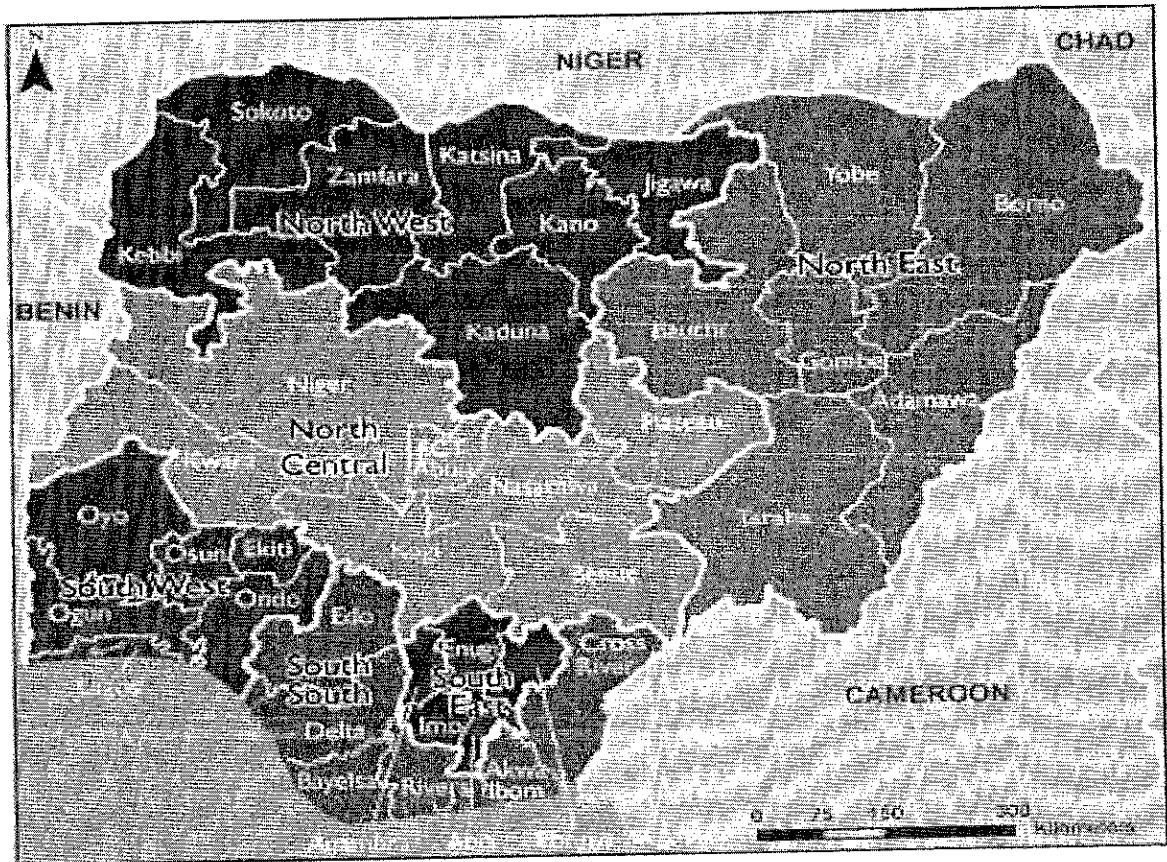
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APPENDIX I



MAP OF NIGERIA SHOWING THE 36 STATES AND THE FCT (BY NDHS 2013)

## **APPENDIX II**

### **INTERVIEW GUIDE**

#### **OVERVIEW QUESTION: WHAT IS YOUR PERCEPTION TOWARDS HIGH RISK PREGNANCY?**

##### **SECTION A: SOCIO-DEMOGRAPHIC VARIABLES**

- a. What is your age?
- b. What is your occupation?
- c. What is your age at your first child birth
- d. How many children do you have?

##### **SECTION B: SOCIO- DEMOGRAPHIC DETERMINANTS OF HIGH RISK PREGNANCY**

###### **PROBES ON**

1. Do you think Child bearing at an early age (below 18) can lead to high-risk pregnancy
2. Do you think Child bearing at a late age (above 34) can lead to high-risk pregnancy
3. Can Continuous child bearing after having a large number of children lead to high-risk pregnancy.
4. Do you think Poor child spacing can lead to high-risk pregnancy.
5. Do you think lack family planning can lead to high-risk pregnancy
6. Do you think lack of antenatal care utilization can lead to high risk pregnancy

## APPENDIX III

### DO FILE

```
gen wt=v005/1000000
```

```
*****generating dependent variable*****
```

```
ta v213
```

```
tab v213,nolabel
```

```
drop if v213==0
```

```
tab v213
```

```
drop if v201==0
```

```
ta v012
```

```
recode v012 (15/17=1 "15-17 years") (18/34=2 "18-34 years") (35/49=3 "35-49  
years"), gen (agegrp)
```

```
ta agegrp
```

```
ta agegrp,nol
```

```
recode agegrp (1 3=1 "At risk") (2/2=0 "No risk"), gen (riskyagegrp)
```

```
ta riskyagegrp
```

```
ta riskyagegrp,nol
```

```
recode v201 (0/4=1 "<5") (5/18=2 ">5"), gen (ceb)
```

```
tab ceb,nol
```

```
recode ceb (1=0 "no risk") (2=1 "at risk"), gen (riskyceb)
```

```
ta riskyceb
```

```
ta b11_01
```

```

recode b11_01 (9/23=1 "short interval") (24/364=2 "normal interval"), gen (presbirth)

ta presbirth

tab presbirth,nol

recode presbirth (1=1 "at risk") (2=0 "no risk"), gen (riskypresbirth)

rename presbirth riskpresbirt

ta riskypresbirt

ta riskyagegrp

ta riskyceb

//////////generating independent variable

*****ethnicity*****

ta v131

drop if v131==998 | v131==999

ta v131

gen Ethnic=.

replace Ethnic=1 if v131==109 | v131==130

replace Ethnic=2 if v131==138

replace Ethnic=3 if v131==298

replace Ethnic=4 if v131!=109 & v131!=130 & v131!=138 & v131!=298

la def Ethnic 1 "Hausa/Fulani" 2 Igbo 3 Yoruba 4 Others

la val Ethnic Ethnic

la var Ethnic "Ethnicity of respondents"

ta Ethnic

*****age at first birth*****

```



```

recode v212 (12/18=1 "younger than 18years") (19/29=2 "18-29 years") (30/45=3 "30
years above"), gen (ageatfirstbirth)

ta ageatfirstbirth

**** contraceptive use*****

ta v302a

ta v302a,nolabel

recode v302a (0=0 "no") (1/2=1 "yes"), gen (contra)

ta contra

ta v717

ta v717, nolabel

drop if v717==99

recode v717 (0/0=0 "not working")(1/max=2 "working"), gen (occupation)

ta occupation

ta v130

drop if v130==99

drop if v130==95

recode v130 (1/2=1 "christian") (3/3=2 "islam") (4/4=3 "traditionalist"), gen (religion)

ta v701

drop if v701==9

*****number of living children*****

recode v218 (0/0=0 "0")(1/2=1 "1-2") (3/max=2 "3+"), gen (nolc)

//generating 2 categories for logisticregression

gen hrp=.

```

replace hrp=0 if riskyagegrp==0|riskyceb==0|riskypresbirth==0

replace hrp=1 if riskyagegrp==1|riskyceb==1|riskypresbirth==1

la var hrp "High Risk Pregnancy"

la def hrp 0 "no risk" 1 "high risk"

la val hrp hrp

ta hrp

ta hrp[iw=wt]

\*\*\*\*\*UNIVARIATE

ANALYSIS\*\*\*\*\*

////////BACKGROUND CHARACTERISTICS

tab v501

ta v025

ta v024

ta Ethnic

ta v106

ta religion

ta occupation

ta v190

ta v701

ta ageatfirstbirth

ta contra

ta nolc

\*\*\*\*\*BI-VARIATE ANALYSIS\*\*\*\*\*

ta v501 hrp, row chi

ta v025 hrp, row chi

ta v024 hrp, row chi

ta Ethnic hrp,row chi

\*\*\*\*chisquare\*\*\*\*

ta v501 hrp, row chi

ta v025 hrp, row chi

ta v024 hrp, row chi

ta Ethnic hrp,row chi

ta v106 hrp, row chi

ta religion hrp, row chi

ta occupation hrp, row chi

ta v190 hrp, row chi

ta v701 hrp,row chi

ta ageatfirstbirth hrp, row chi

ta contra hrp, row chi

ta nolc hrp, row chi

\*\*\*\*kappa\*\*\*\*

kap hrp v501

kap hrp v025

kap hrp v024

kap hrp Ethnic

kap hrp v106

kap hrp religion

kap hrp occupation

kap hrp v190

kap hrp v701

kap hrp ageatfirstbirth

kap hrp contra

kap hrp nolc

\*\*\*\*\*MULTIVARIATE\*\*\*\*\*

logistic hrp i.v501 i.v024 i.v025 i.Ethnic i.v106 i.religion i.occupation i.v190  
i.ageatfirstbirth i. nolc