HIGH-RISK PREGNANCIES AND PERCEPTIONS OF MATERNAL MORTALITY AMONG WOMEN IN PLATEAU STATE OF NIGERIA

BY

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DECLARATION

I hereby declare that this thesis titled **High-Risk Pregnancies and Perceptions of Maternal Mortality among Women in Plateau State of Nigeria** has been undertaken by me in the Department of Sociology, under the supervision of Dr. A.J Oluwabamide and Dr. A.S Maliki. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this work has been previously presented for another degree or diploma at any institution.

_____

Dorothy Akpovye Olaku Signature Date

CERTIFICATION

This thesis titled **High-Risk Pregnancies and Perceptions of Maternal Mortality among Women in Plateau State of Nigeria** has meet the regulations governing the award of a Master's Degree in Sociology of the Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.

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Chairman, Supervisory Committee Signature Date

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Member, Supervisory Committee Signature Date

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Head of Department Signature Date

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Dean, School of Postgraduate Studies Signature Date

DEDICATION

I dedicate this thesis first to God Almighty who has made it a success. Second, my dedication goes to my best friend Bage John Bage, whose love and support made this work a reality and to my lovely Father Mr. Joshua Kpandam Olaku, and my kind and patient Mother Mrs. Ruth Shazi K. OIaku, to all my lovely brothers and sisters: Pastor (Mrs.) Eunice Meque Bako, Mr. Theophilus A.K. Olaku, Mr. Nathan T.K. Olaku, Barrister (Mrs.) Miriam Wazi Hamani; Mr. Martin E.K. Olaku, Dr. Japheth O.K. Olaku and Mr. Joshua O.K. Olaku (Junior); to my sisters husbands, nephews and nieces and to all others that contributed to the work, I love you all. May God bless and keep you.

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ACRONYMS (ABBREVIATIONS)

ARFH-Association for Reproductive and Family Health

ARH- Adolescent Reproductive Health

ASDH - Adolescent Sexuality and Reproductive Health

BCC-Behavior Change Communication

CEDAW-Convention on the Elimination of Discrimination against Women

FMOH -Federal Ministry of Health

FGM-Female Genital Mutilation

FGD-Focus Group Discussion

IPHU-International Peoples Health University

IDI-In-depth interview

INGO - International Non-Governmental Organization

ICD-10-International classification of Disease and other related Health Problems

JUTH-Jos University Teaching Hospital

LUTH-Lagos University Teaching Hospital

LGA-Local Government Area

MDG's - Millennium Development Goals

NDHS- National Demographic and Health Survey

NEEDS-National Economic Empowerment and Development Strategy

NGO-Non-Governmental Organization

NSF- National Strategic Framework

SFH- Society for Family Health

PEM-Protein –energy Malnutrition

TFR-Total Fertility Rate

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ABSTRACT

This study is on high-risk pregnancies and perceptions of maternal mortality among women in Plateau State of Nigeria. Four research questions were stated to guide the study, with specific objectives which include: to explain the manifestations of maternal mortality; to determine the extent to which socio-cultural factors are responsible for high-risk pregnancies and to investigate respondents knowledge of maternal mortality in relationship to their indulgence in high-risk pregnancies. Relevant literatures were reviewed, while the political economy was for analysis. Both primary and secondary data were explored for the study and quantitative and qualitative techniques of data collection were triangulated for analysis. Using the Yamane's sample size determination technique, 400 respondents were selected for the study. Questionnaires were administered on 300 respondents who were women within reproductive ages (15-49); in-depth interviews were conducted on 16 key informants drawn from medical personnel's and women within reproductive ages in the study area. In addition, 7 focus group discussions (FGDs) consisting of 84 participants (12 in each group) were carried out. Data were analyzed and findings revealed that high-risk pregnancies were major contributory factors to the high-rate of maternal mortality in Plateau state. Every pregnancy was found to be associated with high-risk due to obstetric factors, medical conditions and unpredicted outcomes. Findings on the first objective indicated that high-risk pregnancies are practiced in Plateau state, but early pregnancies were more common as compared to order forms. This suggests that most women marry early and give birth before age 34. Findings on the second objective indicated that maternal mortality as a result of high-risk pregnancies is still a social problem in Plateau state. Findings on the third objective indicated that social factors

like non-attendance of antenatal clinics, son preference, poverty and caesarean section (CS) predispose respondents to having high-risk pregnancies. This implies that socio-cultural factors are capable of causing high-risk pregnancies and maternal mortality. Findings on the fourth objective indicate that respondents still indulge in high-risk pregnancies but early pregnancies were commonly practiced and most respondents have knowledge of maternal mortality. Based on these findings, the study recommends among others areas that Social Workers and Sociologists as well as Medical Personnel should educate women on the need to prevent unwanted and early pregnancies and to engage in family planning, as well as regular attendance of ante-natal clinics. In addition, women should be educated on the risk involved in continuous child bearing after having a large number of children and also on the risk of poor birth spacing.

CHAPTER ONE

INTRODUCTION

1.1 Background To The Study

The World Health Organization (1993) defined maternal mortality as the death of a woman while pregnant or within forty two days after termination of pregnancy, irrespective 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. Late maternal death is defined as the death of a woman from direct or indirect obstetric causes occurring more than 42 days but less than one year after the termination of the pregnancy (WHO, 1993).

The issue of maternal deaths emerged as a world health concern through the United Nations' call for "Safe Motherhood" in the l980's. Despite such early advocacy, there appear to be little improvement in maternal health care delivery in Nigeria. The Millennium Development Goal (MDG) target 5; which aimed to reduce the number of women who die in pregnancy and childbirth by three quarters by 2015 recommends an annual decline of 5.5 per cent in maternal mortality ratios between 1990 and 2015in order to achieve MDG 5, unfortunately, figures released by WHO, UNICEF, UNFPA and the World Bank show an annual decline of less than 1 per cent (United Nations, 1990). Mortality associated with pregnancy and delivery complications was highest among poor women in Nigeria (Olusola, 2011).

The maternal mortality ratio in Nigeria is estimated to be 545 deaths per 100,000 live births (Olusola, 2011). Nigerian women die as a result of complications associated with pregnancy or child birth, 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). In terms of the actual number of maternal deaths, Nigeria is ranked second in the world behind India and Nigeria is part of a group of six countries in 2008 that collectively accounted for over 50% of all maternal deaths globally. In terms of the maternal mortality ratio, Nigeria is ranked eighth in Sub-Saharan Africa behind, Angola, Chad, Liberia, Niger, Rwanda, Sierra Leone and Somalia (National Demographic and Health Survey, 2008).

Reproductive health experts define high-risk pregnancies as pregnancies that occurs when mothers' are too young or too old; when children are born at less than a two-year birth interval, and when there are high-birth order children (NPC & ICF Macro, 2009). Very young mothers may experience difficult pregnancies and delivery because of their physical immaturity. Older women may also experience age-related problems during pregnancy and delivery. A mother is considered to be" too young" if she is less than18 years and "too old" if she is older than 34 years at the time of delivery. A "short birth interval" is a birth occurring within 24 months of a previous birth (NPC & ICF Macro, 2009). High-risk pregnancies cover both medical and obstetric factors, but this research will focus on four (4) basic factors: 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 socio-cultural factors such as religion, poverty, lack of

attendance of ante-natal clinics, and son preference; in addition to medical and obstetric factors. The risk categories are: (a) unavoidable risk category (first order births between ages 18 and 34years) and (b) Single high-risk category (when the mothers' age is less than 18 or greater than 34 and birth intervals are less than 24 months and birth orders greater than 3) (NPC & ICF Macro, 2009).

A high risk pregnancy can be further defined as any pregnancy where maternal and/or fetal conditions may lead to an adverse prenatal outcome (Ramsey &Goldenberg, 2002). Preterm labor (PTL) and delivery, premature rupture of membranes, multiple gestation, preeclampsia, diabetes, maternal substance abuse, and vaginal bleeding, are common high risk conditions. A pregnancy may be identified as high risk during the ante-partum or intra-partum period. Indeed, lack of, limited, or late prenatal care, in and of itself, is a common high risk condition seen in urban prenatal centers (Ramsey &Goldenberg, 2002). A pregnancy is considered high-risk when there are potential complications that could affect the mother, the baby, or both (http://www.webmd.com/news/default.htm-5/10/2013).

The risk factors for high-risk pregnancies are: maternal age, medical conditions that exist before pregnancy, medical conditions that occur during pregnancy and pregnancy related issues. One of the most common risk factors for a high-risk pregnancy is the age of the mother-to-be. Women who will be under 17 or over 35 when their baby is due are at greater risk of complications than those between their late teens and early 30s. The risk of miscarriage and genetic defects further increases after age 40.Conditions such as high blood pressure; breathing, kidney, or heart problems; diabetes; autoimmune disease;

sexually transmitted diseases (STDs); or chronic infections such as human immunodeficiency virus (HIV) can present risks for the mother and/or her unborn baby. A history of miscarriage, problems with a previous pregnancy or pregnancies, or a family history of genetic disorders is also risk factors for a high-risk pregnancy. Even if a woman is healthy when she becomes pregnant, it is possible to develop or be diagnosed with problems during pregnancy that can affect her and the baby (Icon Group International, 2004).

Pregnancy-related issues are classified as high risk because of issues that arise from the pregnancy itself and that have little to do with the mother's health. These include: premature labor, multiple births, placenta previa and fetal problems. Premature labor is labor that begins before the 37th week of pregnancy. Although there is no way to know which women will experience preterm labor or birth, there are factors that place women at higher risk, such as certain infections, a shortened cervix, or previous preterm birth. Multiple births means to be conceived of more than one baby (twins, triplets, quadruplets, etc.). Multiple pregnancies, which are more common as women are using more infertility treatments, increase the risk of premature labor, gestational diabetes, and pregnancy-induced high blood pressure. Placenta previa is a condition in which the placenta covers the cervix(Icon Group International, 2004). The condition can cause bleeding, especially if a woman has contractions. If the placenta still covers the cervix close to delivery, the baby may have to be delivered by a cesarean section to reduce bleeding risks to the mother and baby. Fetal problems can sometimes be seen on ultrasound. Approximately 2% to 3% of all babies have a minor or major structural problem in development.

Sometimes there may be a family history of fetal problems, but other times these problems are completely unexpected (Icon Group International, 2004).

The early age at which many Nigerian girls begin child–bearing is a serious cause of concern. It was reported that 44 percent of women aged 20-24 had given birth before they were 20 years old, 27% before they were 18 years old and 8.5 percent before they were 15 years old. The figures were much higher in the rural areas and northern part of the country (NPC &ICF Macro, 2000). The report further suggested that early pregnancy is likely to be one of the main reasons for the much higher maternal mortality in northern Nigeria. Almost half of women in Nigeria are married by age 18; 1 in 5 is married by age 15. The median age at first marriage is 18.3 for women aged 25–49.

In addition, the likelihood of a mother dying is higher in her first pregnancy than in the second and third. Thereafter, the risk may gradually reduce with successive pregnancies. A birth interval of less than two years is associated with higher maternal and foetal risk, while a prolonged interval of more than four years increases the risk, particularly after a period of infertility. The large number of children born by most Nigerian women is another risk enhancing factor as Nigerian women want to have 6 children on the average (NPC & ICF Macro, 2009).

It is on the basis of the above observations that the researcher investigated the issue of high-risk pregnancies and maternal mortality in Nigeria, specifically in Plateau State, with a view to having holistic understanding of the problem in the area.

1.2 Statement of Research Problem

Maternal mortality ratio is worst in Northern Nigeria; an average staggering figure of 2,420 (ranging between 1,373 and 4,477) per 100,000 live births was recorded in Kano State (Kapadia, Shah& Sikri, 1997). In addition, another cause of concern is women's apathetic attitude towards their own health and its management during illness. Women were found to seek treatment only when their health problem caused great physical discomfort or when it affected their work performance (Kapadia, Shah& Sikri, 1997). The North East zone has the highest Maternal Mortality Rate (1,549 per 100,000 live births), which is almost ten times higher than in the South West. The rate in the North West (1,025 per 100,000 live births) is six times higher than in the South West (NPC, UNICEF, 2001; cited in James, 2008). The manifestations of maternal mortality in Plateau state were however not explained.

Most African cultures value children highly, but few people including women themselves understand the risks involved in bearing children. About one third of the total disease burden among women aged 14 to 44 years in Africa is linked to health problems arising out of pregnancy, childbirth, abortion and reproductive infections (Arkutu, 1995; Olusola, 2011). For instance, Arkutu (1995) observed that women in Africa die much more frequently from the complications of pregnancy and childbirth than women in Europe and North America. This view has been similarly expressed by various stakeholders in Plateau State, where cases of maternal mortality and morbidity are high. The maternal mortality ratio of Plateau was reported to be 1,060 deaths per 100,000 live births (Ujah, Uguru, Sagay & Otubu 1999).

Nigeria makes up 2% of the world's population, but it accounts for 10% of its maternal deaths. In a report by World Health Organization (WHO, 2008), Nigeria was identified as having the world's second-highest number of maternal deaths with approximately 59,000 of such deaths taking place annually. Similarly, Obadaki (2009) observed that a 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. The risks of maternal deaths are even greater for certain Nigerian women such as those in the Northern region of the country, rural women and low income women without formal education. He further opined that early pregnancy and early child bearing, which in most cases result from early marriage (a custom that is prevalent in northern Nigeria) presents a much higher risk of complications during pregnancy and delivery as well as maternal mortality and morbidity. Early childbearing and limited access to the highest attainable standard of health, including sexual and reproductive health, causes high level of obstetric fistula and other maternal morbidities as well as maternal mortality. The socio-cultural determinants of high-risk pregnancies have not been investigated.

Furthermore, most studies on maternal mortality and morbidity have concentrated on other causes of maternal mortality and morbidity, ignoring high-risk pregnancies, such as: early child bearing, late child bearing, poor child spacing, large number of children, non-attendance of ante-natal clinics, poor nutrition, and poverty. According to World Health Organization (WHO, 2005) one out of every 22 women in Africa dies from pregnancy-related complications. For every woman who dies, about 50 to 100 other women suffer from an illness or disability caused by childbearing. This means that every

year, more than 150,000 African women die and millions of women suffer a serious illness, because of pregnancy and child birth (Arkutu, 1995). In particular, the National Demographic and Health Survey (NDHS, 1990) reported that more than 67.68% of all pregnancies in Nigeria (from 1985-1990) were high-risk pregnancies. The report also revealed that a total of 21% of married women in Nigeria have an "unmet need" for family planning. The desire to space births is highest among women within 20-29 years of age while older women's need is to limit births. It was therefore important to know the contributory percentage of high risk pregnancies to the issue of maternal mortality using Plateau state as a reference point.

1.3 Statement of Research Questions

This study is predicated upon the following research questions:

1. To what extent is high-risk pregnancies practiced in Plateau State?
2. What are the manifestations of maternal mortality in Plateau State?
3. What are the socio-cultural determinants of high-risk pregnancies in Plateau State?
4. What is the relationship between practices of high-risk pregnancies and knowledge of maternal mortality in Plateau State?

1.4 Objectives of the Study

Generally, this study is aimed at investigating high-risk pregnancies by explaining the relationship between the socio-cultural attributes of respondents and their indulgence in high-risk pregnancies, to know if such can lead to maternal mortality in Plateau State. However, the specific objectives of the study are as follows:

1 .To investigate the practices of high-risk pregnancies in Plateau state.

2. To explain the manifestations of maternal mortality in Plateau state.

3. To determine the extent to which socio-cultural factors are responsible for high-risk pregnancies in Plateau state.

4. To investigate respondents indulgence in high-risk pregnancies and its relationship to their knowledge of maternal mortality in Plateau state.

1.5 Significance of Study

The research is significant, because it identified the socio-cultural factors associated with high-risk pregnancies and perceptions of maternal mortality. More specifically, it is very important because it provided written and theoretical information which can be used by the government for a coherent, maternal welfare policy. The research was necessary because it helped reveal the relationship between knowledge of maternal mortality and practices of high-risk pregnancies in Plateau state. In addition, this research will serve as a source of material for students who may have interest in the study of maternal mortality, high-risk pregnancies and related issues. Finally the result of this study can be used as a basis for developing new and refined maternal welfare programs, services and strategies, including those aimed at the prevention of maternal mortality as well as preventing high-risk pregnancies.

1.6 Scope and Limitation of the Study

The scope of this study was limited to Plateau state, Nigeria, due to the fact that cases of maternal mortality and high-risk pregnancies are more rampant in the North compared to other parts of Nigeria and Plateau state is one of the Northern states. Also, in terms of

time and funds, Plateau state is more convenient. There are many factors influencing maternal mortality, but this research focused on high-risk pregnancies 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 socio-cultural factors such as religion, poverty, lack of attendance of ante-natal clinics, and son preference.

1.7 Justification of Study

My reason for selecting Plateau State is because high-risk pregnancies and maternal mortality is more prevalent in the Northern part of Nigeria as stated in the research problem and Plateau State is one of the Northern States. Also, Jos North local government area was chosen because it is situated in the heart of Plateau state of Nigeria and it has a council which has an important recognition and function in the country through the local government's performance and its transformation of rural areas. In addition, this local government was chosen because of the cosmopolitan nature of Plateau state and due to the fact that it gives a wide coverage of various groups from different socio-cultural backgrounds.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

In this chapter, literature on: Practices of high-risk pregnancies, Manifestations of maternal mortality, relationship between practices of high-risk pregnancies and knowledge of maternal mortality and Socio-cultural determinants of high-risk pregnancies were reviewed.

2.2 Practices of High-Risk Pregnancies

Nigerians want large families. According to the 2003 NDHS, women would like to have at least 6 children; men would like to have almost 9. Currently married people want even larger families- 7.3 children for married women and 10.6 for married men. The 2003 NDHS suggest that women are waiting longer to marry and to have their first births. Overall, among women age 25- 49, the median age at first marriage is 16.6 years. However, among younger women, age 20-24, the median age at first marriage is 19.1. In contrast, among older women, age 45-49, the median age of marriage is 15.5. Younger Nigerian women are also delaying sexual activity. Overall, one-third of women age 25-49 reported having sexual intercourse by age 15. However, younger women, age 20-24, start sexual activity at the median age of 17.6 compared with a median age of 15.5 for older women age 45-49. The findings suggest, however, that younger Nigerian women are

more likely to begin sexual activity before marriage compared with their mothers and grandmothers. The median age at first birth is increasing. Among women ages 25-29, the median age at first birth is 20.3 years. In contrast, for women 35 and older the median age is less than 19 years (NPC & ICF Macro, 2003). The reason why Nigerians want large families has not been investigated.

The total fertility rate in the 1999 NDHS indicates that if fertility rates were to remain constant at the level prevailing during the 1994-98 period, a Nigerian woman would bear 5.2 children in her lifetime. The age specific rates indicate a pattern of late childbearing, with a peak at age group 25-29 and the rate at age group 30-34 being slightly higher than that of the 20-24 age group. The crude birth rate for the 1994-98 periods was 38 per 1,000 persons, and the general fertility rate for the same period was 176 per 1,000 women. There appears to have been a decline in the total rate in Nigeria from 6.3 in 1981-82 to 5.2 in 1999. The data suggest that on average a Nigerian woman has one child less in 1999 than she would have had in 1981-82. Information on birth intervals provides insight into birth spacing patterns, which affect fertility as well as infant and childhood mortality. Research has shown that children born too soon after a previous birth are at increased risk of dying at an early age (NPC & ICF Macro, 2000). The reason why children born too soon after a previous birth are at risk of dying early was not discussed.

The NDHS 1999 data show that birth intervals are generally intermediate in length in Nigeria. More than one-quarter (26 percent) of non-first births occur less than 24 months after the previous birth, which is usually considered to place the child at higher risks of illness and death. More than one-third of births take place 24-35 months after the

previous birth, with 38 percent occurring at least 3 years after the previous birth. The median birth interval is 31 months for Nigerian women, seven months longer than the minimum of 24 months considered safe for mother and child (NPC & ICF Macro, 2000).This is almost identical to the median birth interval of 30 months reported in 1990 NDHS

Childbearing begins early in Nigeria, with about half of women 25 years and above becoming mothers before reaching the age of 20. The median age at first birth is 20. The data also show that there has been no significant change in the median age at first birth between older and younger women. The most noticeable differentials occur with respect to region, with women in the northern regions starting to bear children earlier than those in the Central, Southeast, and Southwest regions. Educated women, particularly those with a higher education, start bearing children later than those with a primary and secondary education (NPC & ICF Macro, 2000). According to 2008 NDHS report, the risk ratio for single high-risk categories is 1.37, while the risk ratio for multiple high-risk categories is 1.92. The highest risk is associated with mothers in the single high-risk category, age less than 18 years (1.73), followed by mothers in the multiple high-risk category, younger than 18 years, with birth intervals less than 24 months (3.88) (NPC & ICF Macro, 2009). Why are there differences in child bearing by region?

Fertility behavior is conditioned by both biological and social factors. And as in other traditional African societies, several factors have contributed to sustain relatively high levels of fertility in Nigeria. These factors include high level of infant and child mortality, early and universal marriage, early child bearing as well as child bearing within much of

the reproductive life span, low use of contraception and high social values placed on child bearing. In the face of perceived high infant and child mortality, the fear of extinction encouraged high procreation with the hope that some of the births would survive to carry on the lineage. The traditionally high values placed on marriage ensured not only its universality but also its occurrence early in life with the consequence that child bearing started early in life and in most cases continued until late in the reproductive span. The institution of polygyny which sometimes promotes competition for childbearing among co-wives also contributed to sustain high fertility. Use of modern contraception was traditionally unacceptable as it violated the natural process of procreation. The traditional long period of breast-feeding and postpartum abstinence guaranteed adequate spacing between children. Available evidence suggests that there have been changes in these socio-cultural factors over time. Age at marriage appears to have increased, though minimally when viewed at the national level. Use of modern contraception has increased, and improved education (especially of women) appears to have gradually eroded some of the traditional values placed on child bearing (Bankole, Akinrinola, Olajire & Bamisaye,1985).

Locoh (1994) links the decline in the number of very early marriages in most of the African countries to urbanization and school attendance rather than to any specific policy measure. The lower rates of pregnancy and births are due to the fact that educated women are more likely to use contraceptives, and are also more likely to resort to abortion, rather than to a significant difference in the exercise of sexuality. One of the determining factors in this outcome is the way in which the woman projects herself into the future, and the

extent to which she feels she guides her own destiny, i.e. that she can have control over what happens to her own life. Education provides alternate means of creation of status for women, as well as a source of self-esteem and self-value. It thus provides the motivation to use contraception, facilitates its putting into practice, as well as the motivation to terminate the pregnancy if unwanted.

Ethnicity is of prime importance in defining age at marriage, acceptability of sexual behavior, initiation of sexuality, use of contraception, and the resolution of pregnancies when these occur. A study of Nepal singled out ethnicity as the single most important factor in the determination of the timing of marriage and of the first birth, much more important than education, religion, urban and rural childhood residence and ecological region. Women's mean age at marriage varied from 13.5 among the Brahmins to 17.8 among the Tamangs, while the difference among the literates and illiterates was very small (15.4 and 15.2 respectively), as well as that for the ecological region (14.8 for the terrain to 15.7 for the mountains) (Thapa, 1989). Other studies for other parts of Asia have reported similar findings (Hirschman, 1985; Rindfuss, Parnell & Hirschman, 1983).

Culture determines the meaning of pregnancy among young women, as well as its consequences such as those regarding social status, health and gender relations. The defining principle is not so much the age at which it occurs, but the cultural acceptability of the pregnancy, and this is often linked to marriage. Age at marriage is thus a central variable for analysis, both the actual age at which it takes place in different settings, as well as the prescribed legal age and the differences between the two. The norms of behavior and the way in which specific behavior is interpreted are cultural constructs and

vary over time. Major sources of change have been education, urbanization and globalization, for they have a direct impact on the values, beliefs and practices. These processes have had a much stronger effect in the determination of age at marriage than on the initiation of sexuality, creating a separation in which pregnancy becomes unacceptable.

2.3 Manifestations of Maternal Mortality

According to the World Bank (2011), maternal mortality is the most extreme consequence of poor maternal health. Complications of pregnancy and childbirth are the leading cause of disability and death amongst women between the ages of 15-49. Maternal mortality is the death of a woman during pregnancy, delivery or six weeks following the birth of the baby. Every year, it is estimated that approximately 500,000 women die as a result of pregnancy and child birth; one woman dies every minute. For every woman that dies, it is estimated that more than 25 others suffer a debilitating injury often with lifelong consequences. Further, maternal death often results in death to the new born and increases risk of survival for the older children. It is estimated that 4 million newborn die in the first week of life every year, mostly due to problems during pregnancy and childbirth.

Understanding the causes and correlates of maternal mortality is crucial in confronting the challenge of unyielding high rates in Sub-Saharan Africa. Despite the 1978 Alma Ata Declaration and the 1987 Safe Motherhood Initiative, the reduction of maternal mortality has been minimal worldwide. The slow improvement in the Maternal Mortality Rate in

the developing world is due not only to the trend in Sub-Saharan Africa but also to stagnating declines in the regions of Latin America and the Caribbean and South Central Asia. In other regions, notably North Africa and Southeast Asia, the MMR is estimated to have declined substantially during the 1990s. Such divergent trends call for a closer examination of the factors correlated with the MMR.

Different interactive factors contribute to maternal morbidity and mortality. The range is wide and includes the behavior of families and communities, social status, education, income, nutritional status, age, parity, and availability of health services. It is important to note that non–health sector activities, such as education, water and sanitation, roads and communication, agriculture, and internal security, also influence maternal outcome. In Sub-Saharan Africa, some of the highest MMRs have been recorded in countries that are in conflict or have large refugee populations, such as Angola and Sierra Leone. About 60 percent of the maternal deaths occur during childbirth and the immediate postpartum period, with 50 percent of these deaths occurring within the first 24 hours of delivery. In a study in Eritrea, 16 percent of maternal deaths occurred during pregnancy, 48 percent during childbirth, and 36 percent postpartum (Ghebrehiwot, 2004). These findings imply that the causes of the deaths in this critical period are either the result of labor or worsened by labor and delivery.

Maternal mortality is among the health indicators that reflect the greatest disparity between rich and poor. The main causes of maternal mortality are severe bleeding, infection, unsafe abortion, eclampsia, and obstructed labour. While every woman is at risk for experiencing sudden and unexpected complications during pregnancy, childbirth

and following delivery, adequate anti- natal, obstetric and post-natal care can reduce the risk of death considerably. The fact that more than 90% of maternal deaths and morbidities occur in developing countries, indicate that these resource constrained settings lack adequate and available resources and health services (Olusola, 2011).

Olusola (2011) also stated that an estimated 585,000 women die annually from pregnancy, child birth and related causes (maternal mortality) and as many as 15 times more suffer injury or infection (maternal morbidity). Most of these deaths and disabilities occur to women in developing countries, where pregnancies and childbirth are among the leading causes of death for women of child bearing age and where the risk of death is 100 times more. Maternal mortality rate (M.M.R) is an important indicator of poverty and a pointer to the degree of priority society accords to the lives of women.

In a study by Olusola (2011) Women's Reproductive Health and Household Food Securities in Africa, a ten year review (1986-95) of maternal mortality at the Lagos University Teaching Hospital (L.U.T.H.) gave a maternal mortality rate of 1930 per 100,000 live births. L.U.T.H is a referral centre and so, many difficult and complicated cases end up there. The study also demonstrated a steady rise in MMR over the years. Furthermore, it identified abortion (22.5%), eclampsia (16.4%), puerperal sepsis (13.4%) obstetric haemorrhage (11.7%), obstructed labour and ruptured uterus (8.8%) and ectopic pregnancy (5.8%) as the major causes of death. It however stated that 86.5% of the patients studied were un-booked cases who presented late to the hospital.

Olusola (2011) further opined that many studies from different parts of Nigeria identified the role of bio-socio-cultural factors on maternal morbidity and mortality. Delay in

seeking orthodox obstetric care directly due to poor financial status even when confronted with grave situations as bleeding was the most prevalent of these factors. Others were age, marital status, parity, booking status, education and socio-economic status. All were found to statistically affect maternal mortality. Abortion performed under unsafe conditions is a threat to Reproductive Health. The World Health Organization estimates that about 70,000 (seventy thousand) women die each year as a result of unsafe abortion and almost all of them are in the developing countries. In Nigeria, abortion is responsible for about 20-25% of all maternal deaths and about half of these are adolescents. He concentrated his findings on Lagos University Teaching Hospital (L.U.T.H.), however, it is important to note that it is not all maternal mortality and morbidity cases that are reported to hospitals, some maternal cases are handled by traditional birth attendants and this may not apply to some countries in Africa.

Bang and Bang's (1989) study in Gadchiroli (Maharashtra) was one of the first community based studies on the prevalence of gynaecological morbidity among Indian women. Subsequently, several community based studies have reiterated and revealed the magnitude of reproductive morbidity among Indian women (Bang & Bang, 1994; Bhatia and Cleland, 1995; Gittlesohn, Bentley, Nag, Pachuari, Harison & Landman, 1996; Latha, Kanani, Maitra, Bhatt, Senapati, Bhattacharya, Sridhar, Giri, Shah, Desia, Parikh, Taskar, Dharap & Mulgaonkar, 1997; Koeing, Jejeboy, Singh, Sridhar, 1998). An exhaustive review by Jejeebhoy (1997) reveals the grim side of obstetric morbidity. Not only are maternal mortality levels in India among the highest in the world (437 to 568 per 100,000 live births), but neonatal mortality was also high at 52.7 per 1000 live births,

which is a direct consequence of women's poor health status prior to and during pregnancy. However, it is also important to note that there are underdeveloped countries in Africa where maternal and neonatal mortality is low.

Morbidity also influences maternal mortality. As everyone knows being sick or suffering from aches and pains affects every aspect of daily life. A woman who is not well and exhausted finds it difficult, if not impossible to carry out her everyday responsibilities. It is also hard for her to participate in programmes that could help her and her family such as literacy or training classes, saving schemes or community meetings. Being healthy is a requirement for women to have a healthy attitude and participate fully in their communities (Arkutu, 1995).

While complications of childbirth are perhaps the most common health problems women face, they are not the only ones. Other health problems can also cause pains, discomfort, or even death. For example, sexually transmitted diseases are becoming more common in Africa today; they affect thousands of women, and if they are not treated, they can lead to infertility or even death. AIDS is also spreading quickly throughout Africa. In some countries, this disease which cannot be cured is killing more adult women than any other illness. Few women know the signs of these diseases or what can be done to prevent or treat them. Most often, women do not visit a health facility for their aches and pains and rarely talk about them even with their friends or family. HIV/AIDS and its effect on maternal outcomes in Africa are grossly underreported. HIV is not regarded as a primary cause of death unless AIDS is diagnosed (Arkutu,1995). A study in South Africa reported a 25 percent increase in seropositivity, from 50 to 75 percent between 1997–99 and 2000,

in maternal deaths due to non–pregnancy-related sepsis in Pretoria (Pattinson & Moodley, 2002). HIV infection in pregnancy is also associated with anemia and severe malaria infections (Antelman, Msamanga, Spiegelman, Urassa, & Kabir, 2000). The growing HIV/AIDS pandemic is also having a severe impact on women's health. It is estimated that there were 5 million new HIV infections in 2003, of which 40 percent were among women and 20 percent among children (United Nations, 2003). In eastern and southern Africa, between 20 and 30 percent of pregnant women are infected with HIV and available evidence indicates that HIV/AIDS currently accounts for at least 18 percent of maternal deaths. Death in this case results from opportunistic infections, puerperal sepsis, meningitis, tuberculosis, pneumonia, postabortion sepsis, encephalitis, and probably malaria (Mbaruku,Pattinson, Vandecruys, Macdonald &Mantel, 2005).

Poor nutrition is another factor influencing maternal mortality. It is a tradition in many African families that men and boys eat first (and have the best part of the meal), followed by the girls and then the mother. If the family is poor, this often means that women and girls do not get enough to eat, especially of the food that helps them grow as big as they could be. When women are small and especially if their hips are narrow, labor can be difficult and they may not be able to deliver a baby safely. Poor nutrition can cause other problems as well. Being undernourished makes people weak and more vulnerable to disease. Since poor nutrition is more common among females, than males in many places, they are more likely to die than suffer from this problem. In addition, women have different needs. Once they begin menstruating and especially when they are pregnant, they need much more iron in their diets than men do. Without sufficient iron, women

become anemic, especially if they are pregnant. According to research, 50-80% of pregnant women are anemic in many African countries. If a woman becomes pregnant when she is poorly nourished, she is much likely than a well fed woman to suffer from complications like infections, severe bleeding and premature labor. She is also more likely to have a baby that is small and underweight (Arkutu, 1995).

As documented by several DHS, many African women enter pregnancy in a state of nutritional deficit and therefore are unprepared to cope with the extra physiological demands of pregnancy. In Eritrea, for example, 37.3 percent of women have a low body mass index, which is an indicator of chronic energy deficiency (Eritrea National Statistics and Evaluation Office and ORC Macro 2002). The nutritional deficit, macro- or micronutrient, predisposes these women to anemia in pregnancy, among other problems. Anemia is highly prevalent in Africa, with up to three-fifths of pregnant women in Africa having some degree of anemia, and about one-third classified as having severe anemia (Isah, Fleming & Ujah, Ekwempu, 1985; Massawe, Urassa, Moller & Nystrom, 1996; Massawe, Urasa, Mmari, Ronquist, Lindmark, & Nystrom, 1999; Van den Broek and Letsky, 2000). Anemia may cause death on its own or predispose a woman to severe postpartum hemorrhage leading to death (Harrison, 1997).

Unsafe abortion deserves special mention in Africa, the only region where complications of abortion are the most common cause of maternal mortality. Globally, unsafe abortion accounts for about 13 percent of maternal deaths compared with 30 to 50 percent in Sub-Saharan Africa (AGI 1999; Henshaw, Singh, & Haas 1999). Of the estimated 46 million induced abortions globally every year, about 20 million are considered unsafe. It is

estimated that 95 percent of unsafe abortions occur in the developing world (Henshaw, Singh, & Haas, 1999). The WHO (1998) estimated that there were about 5 million induced abortions in Africa annually, whereas Rogo (1993), using the results of several DHS, estimated that there were 1.5 million induced abortions, most of which were unsafe. The tragedy of abortion-related mortality in Africa is that most of the victims are teenagers.

The unsafe abortion conundrum in Africa begins with unprotected sex among teenagers who are ill-informed about their sexuality; an unwanted or ill-timed pregnancy follows. Living in countries where induced abortions are legally restricted; the young victims resort to back street abortionists or quacks. Crude methods used in the pregnancy termination, delay in seeking medical attention when and if there is a problem, and the poor quality of post abortion care lead to a significant proportion of the victims sustaining serious injuries with life-threatening complications, resulting in either death or disability. For survivors the psychological impact is immense and lifelong (Rogo, 2004). Postabortal sepsis is worse in HIV/AIDS-infected women (Mbaruku, 2005).

Available evidence indicates that there are several factors that predispose a woman to greater risk of maternal death. The common biomedical approach to the determinants of maternal morbidity and mortality usually divides them into distal and proximal factors. The seminal work by McCarthy and Maine (1992) is credited with the conceptual model of analyzing determinants of maternal mortality that could be applied to research as well as programs. The concept grouped the determinants as: distant, or socioeconomic,

factors; intermediate factors (health behavior and status, access to services, and unknown factors); outcomes (pregnancy, morbidity, and mortality).

The McCarthy and Maine concept has since been modified, most notably by UNICEF (1999), to facilitate strategic programming for maternal health. From the pediatric perspective, the Mosley and Chen (1984) framework for the study of child survival in developing countries has also found, with various modifications, utility in the analysis of determinants of maternal morbidity and mortality. The original model proposed three levels of determinants of child mortality (socioeconomic determinants, proximate and biological determinants, and outcomes expressed in terms of growth and death), but subsequent modifications have expanded the levels to five: household characteristics (behavioral), intermediate variables (behavioral and biological), risk factors (biological), malnutrition-infection syndrome, and demographic outcome (Van Norren & Van Viannen, 1986).

The Poverty Reduction Strategy approach developed by the World Bank and sector-wide approaches to the health sector have generated new interest for incorporating government policies and actions, within or outside the health sector, that focus on health outcomes. Edwards (2001), by expanding on previous models, introduced the macroeconomic evaluation of non–health sector policies that influence health.These developments are relevant to maternal health and can be applied to generating a more comprehensive understanding of determinants and correlates of maternal health in Africa. The following modified framework is proposed as appropriate for discussing the correlates of maternal mortality in Africa:

i. household and community characteristics (behavior, cultural-religious values, and income poverty)
ii. biological-demographic variables and risk factors
iii. malnutrition-infection syndrome (including protein-energy malnutrition [PEM], micronutrient deficiencies, anemia, malaria, and HIV/AIDS)
iv. health systems
v. national policies and related investments (health and non-health).

Pregnancy outcome and maternal survival have strong correlations with household behavior and decision making. Enlightened communities value their mothers and seek prompt attention at the earliest indication of problems. Low status of women in the household and society as a whole, as exemplified by inequality in education, employment, property ownership, participation, and decision making, is another important correlate (Wall, 1998). Gender-based violence is common in situations in which the status of women is low and legal protection inadequate, and in turn it is correlated with high rates of maternal mortality.

Harmful traditional practices and religious beliefs also adversely affect maternal health. They vary from one ethnic group to another and cover a wide range of activities and practices; from the sexual or genitally linked ones, such as female genital cutting, to feeding and nutritional practices. In addition, a plethora of harmful beliefs and practices around pregnancy and childbirth affect health-seeking behavior during pregnancy and parturition. The disproportionately low use of health facilities for delivery care is testimony to the strength of these beliefs (Ghebrehiwot, 2004).

Household income, allocation of resources, and the control of those resources also influence maternal mortality. Delivery of infants is not free of charge in many African countries. Indeed, it was never without cost in traditional societies either. Even in countries where delivery is declared to be free in public facilities, the cost of accessing care, both direct and indirect, can be prohibitive, quality notwithstanding. The relationship to poverty is bi-directional; complications of pregnancy were cited as one of the most common causes of household poverty (Borghi, Hanson, Adjei Acquah, Ekanmian, Filippi, Ronsmans, Brugha, Browne & Alihonou, 2003; Claeson Claeson, Griffin, Johnston, McLachlan, Soucat, Wagstaff, &Yazbeck, 2001).

Standard biological variables, such as age, height, and parity, apply to maternal mortality in Africa as elsewhere. In many countries of Sub-Saharan Africa, at least 50 percent or more of women will have started childbearing by age 19. Adolescents comprise about 20 percent of maternal deaths, most of which are due to complications of unsafe abortion. Early marriage and childbearing are associated with high parity and therefore higher risk of maternal death (Ghebrehiwot, 2004). Various indicators of maternal status during pregnancy and childbirth may also be predictors of maternal outcome, including edema, hypertension, and history of previous complications (Garenne, Mbaye, Bah,& Correa, 1997). Socio-demographic factors are correlates of maternal mortality. Marital status, first pregnancy, and level of education are commonly cited (Garenne, Mbaye, Bah, & Correa, 1997).

Malaria remains a major killer of women in pregnancy and a leading indirect cause of maternal mortality. There are effective interventions, such as intermittent preventive

treatment and insecticide-treated bed-nets that are affordable but often not available where they are most needed. The changing complexities of malaria chemotherapy and the rising cost of newer, more effective combinations pose new challenges, including safety in pregnancy (Heymann, Steketee, Wirima, McFarland, Khoromana, & Campbell, 1990; Shulman, Dorman, Cutts, Kawuondo, Bulmer &Marsh, 1999).

As previously mentioned, both PEM and micronutrient deficiencies are prevalent in African women. Pregnancy aggravates the situation and increases vulnerability to any concurrent condition or opportunistic infection. Paul (1993), in analyzing maternal mortality in Africa from 1980 to 1987 found a strong correlation with calorie supply as a percentage of requirements. Maternal anemia, however mild, also increases several-fold the risk of life-threatening postpartum hemorrhage.

Poorly financed and unaccountable health systems, including weak referral systems, are a key determinant of maternal outcome. Another determinant is poor access to quality maternal health care services because of geographical terrain and poor roads. Maternal health care services are deemed to be of poor quality if, for example, they lack skilled health providers, the providers have negative attitudes, treatment guidelines and protocols are inappropriate, and they lack essential drugs, equipment, and supplies. A low health personnel-to-population ratio is a chronic issue in Sub-Saharan Africa. For instance, the health personnel-to-population ratio in Sub-Saharan Africa is reported as 1:23,540, ranging from 1:750 in South Africa to 1:72,000 in Rwanda. For nurses, the Sub-Saharan African health personnel-to-population ratio is 1:3,460, ranging from 1:600 in Zambia to 1:5,470 in Tanzania (Howson, Harrison & Law, 1996).

Given that skilled birth attendants working within a supportive health system are the most important factor in keeping women healthy and safe in pregnancy, inadequate numbers and distribution of human resources are major underlying causes of maternal mortality in Sub-Saharan Africa. Although the use of skilled attendants at delivery increased significantly in the developing world as a whole, from 41 percent in 1990 to 57 percent in 2003, the greatest improvements were in Southeast Asia and North Africa and the least in Sub-Saharan Africa (http://unstats.un.org/unsd/mi/goals_2005/goal_5.pdf). World Health Organization report indicates an average of 42 percent in the Africa region, implying no change from the 1990 global average (WHO, 2005).

Female genital mutilation is another factor influencing maternal mortality. In many areas of Africa, girls are subjected to the sometimes fatal practice often referred to as female circumcision, but which is more accurately called female genital mutilation. In the mildest form, the tip of the clitoris and part of the outer lips of the vagina are removed. In the most extreme form, after the clitoris and the lips of the vagina are cut off, the opening of the vagina is sewn together, leaving only a small hole through which menstrual blood can escape. This painful practice may be performed on baby girls, girls nearing puberty, adolescents and sometimes on grown women right before or after they deliver a baby. It is usually performed without anesthesia, using unclean instruments. If the victim does not die immediately from shock or severe bleeding, she may as well die from the infection that often follows. If she survives, she is likely to suffer permanently from painful sexual intercourse because of heavy scaring around the vaginal opening. These scars can also cause serious difficulties during birth. FGM is however an extremely dangerous and

harmful practice that leads to high risk fertility in women who have had the operation, leading to death of some women.

Inadequate use of pre-natal care has also been associated with increased risk of maternal mortality. WHO (2005), estimates that 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 substandard treatment by health providers. Poverty and limited access to appropriate care pose major challenges to improving maternal health and reducing maternal mortality. Poor women have limited access to appropriate information and health services. A formidable combination of social, economic and cultural barriers also prevent poor women from easy access to medical care and health services even when quality health services are geographically within reach.

The absence of skilled attendants at birth is another risk factor increasing the probability of pre and post natal death. Each year, approximately 60 million women give birth with the assistance from an untrained birthing attendant or with no help at all. While efforts are being made to increase the number of births with skilled attendance, some countries are doing much better than others (World Bank, 2011). As reported by WHO(2005), the causes of maternal death, in order of prevalence worldwide includes severe bleeding (hemorrhage), infections, complications due to unsafe abortion, high blood pressure in pregnancy (eclampsia), obstructed labor, and other direct causes, accounting for an estimated 80% of maternal mortality worldwide, as well as other indirect causes. HIV

infection according to WHO, significantly increases the risk of maternal mortality and morbidity so that in countries with high HIV prevalence, AIDS-related complications are one of the leading causes of maternal mortality.

2.4 Socio-cultural Determinants of High-Risk Pregnancies

In many African countries, nearly half of all women have their first child before the age of 20. By the age of 15, about 13% of girls in Nigeria are already with children; 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. The high incidence of vesico-vaginal fistula (VVF) and recto-vaginal fistula (RVF) in very young girls in the northern part of the country is the result of early marriage and child-birth rate of teen mothers (15-19) years in Nigeria is about 152 per 1000 live births (NPC & ICF Macro, 1991).

The premature status of motherhood destroys to a large extent, a teenager's life chance of achieving a desirable quality of life and self-actualization. Currently, an estimated 1 in 20 teenagers world-wide acquire a sexually transmitted infection in each year. Transmission and development of complication due to poor or mismanagement of resources are higher in the developing countries due to the lack of information and poor access to user friendly services. Unsafe abortion is prevalent among teenagers in Nigeria as in other developing countries of Africa. Teenage girls account for almost 25% of maternal deaths in Nigeria. Many studies have revealed that many young Nigerian girls 12-14 years are sexually active, and do not use contraceptives, yet have multiple sexual partners and commit abortions (NPC & ICF Macro, 1991).

Age at marriage is another factor associated with high risk fertility. Women in Africa tend to marry at a very tender age. Often they are married by age 16 or 17 and in some areas even by age 12 or 13. There are many reasons for this practice. For example, if a girl's family is poor, her parents may be eager to receive the bride price or be relieved of the burden of paying for her food, clothing and general care. In other cases a girl may marry early because her family wants to avoid the risk of an illegitimate birth. There are good reasons to delay marriage. It is better for a girl to wait at least to the age of 18 before becoming pregnant because her body is better able to survive the demands of pregnancy and childbirth. Also, an early start to childbearing may also mean many children; too many pregnancies close together, which has serious implications on a woman's health and survival (Arkutu, 1995).

Age at marriage is a significant factor in women's lives, not only because of its association with overall completed fertility and with the meaning and consequences of adolescent fertility, but also due to its relation with the status of women. Early marriages are usually performed without the informed consent of the girl and often involve important age differences with the spouse, one element of unequal power relations between the spouses and of difficulty for empowerment. Cultures also define who is entitled to access reproductive health services, sometimes by social control and sometimes by laws, policy restrictions or other measures. In many African societies only married women have access to family planning and other health services, and unmarried pregnant adolescents are particularly affected (Bledsoe &Cohen, 1993). In Gambia,

provision of contraceptives is legally restricted to married couples and unmarried women with at least one child (Jeng &Taylor-Thomas, 1985).

Early marriage in fact is favored in different contexts to prevent the undesired effects of premarital sexual activity and pregnancy. In the Gambia, for example, age at marriage has been reported to be as low as 10 years (Jeng & Taylor-Thomas, 1985). In rural Ghana early marriage shortly after puberty rites is the norm to ensure chastity and genital mutilation, performed at several ages, would provide proof of virginity and guarantee long time fidelity (Bulley, 1984). In rural Niger, 47% of women aged 20-24 during the demographic health survey (DHS), had married before 15 and 87% before 18. In this context, where early pregnancy is welcome, 53% of the women had had children before age 18. In the Islamic areas of Africa, early marriage is favored in order to prevent extramarital pregnancies (Locoh, 1994). Early pregnancy and early child bearing presents a much higher risk of complications during pregnancy and delivery as well as maternal mortality and morbidity. Early childbearing and limited access to the highest attainable standard of health, including sexual and reproductive health, causes high level of obstetric fistula and other maternal morbidities as well as maternal mortality.

According to World Health Organization (WHO), only 53% of deliveries in developing nations are attended by a health professional and only 40% takes place in a hospital or health center. Women in developing countries often lack the economic resources and education to make informed decisions about their health and nutrition. Some women are denied or lack access to reproductive health information and services because of logistical, social or cultural barriers. Lack of decision making power, excessive physical

labor and poor nutrition also affects maternal mortality (World Health Organization, 2011).

The desire for large number of children is generally high in Africa, especially among less educated people, and there is little or no use of contraceptives. Children provide cheap labor and serve as sources of old age security or insurance for parents, so women keep giving birth without considering the consequences. Many women who die during childbirth may not have wanted to be pregnant in the first place because their health was poor, or they had many children already, or did not have the income to support another child. Family planning services are an essential part of reproductive health care. Most maternal mortality and morbidity cases could be avoided if all women had access to a range of modern, safe and effective family planning services which would enable them to avoid unwanted pregnancy. The development of modern contraceptives have given people greater individual freedom and enhanced their abilities to plan their families. The social value of having many children; male preference and competition among wives in polygamous unions continue to cause high-risk fertility behavior among mothers leading to increase in maternal mortality and morbidity (Arkutu, 1995).

2.5 Relationship between Practices of High-Risk Pregnancies and Knowledge of Maternal Mortality

The proximate and more distal determinant of fertility contributes to maternal morbidity and mortality because pregnancy is a pre-condition. Models of the proximate determinants suggest for example that non-contraception, non-lactating women in stable sexual unions are most exposed to the risks of pregnancy and on an aggregate level; these

characteristics together with induced abortion primarily determine the total fertility rate (Bongaarts & Potter, 1983). Age is another important determinant which influences both fecund-ability and the likelihood of exposure to intercourse. The implications of these proximate determinants of pregnancy for maternal health have been illustrated by Graham and Airey (1987), who among others, show that in many settings, the majority of maternal deaths come from the mid reproductive ages where the most women are giving birth despite the youngest and oldest women having the highest age-specific risks per pregnancy. Although not yet demonstrated, empirically, the same relationships are likely to hold for age and maternal morbidity.

Distal determinants of fertility are often considered at both the societal and individual levels (Cochrane & Lesthaeghe, 1981). Social institutions, cultural norms, economic and environmental conditions as well as women's education, status, employment, ethnicity, and family size desires have been identified as important distal determinants. Generally higher levels of education, income and women's status are associated with lower levels of fertility and it is assumed that they have a similar association with maternal morbidity and mortality although this is by no means certain. Louden (1987)argues, for instance that maternal health, as opposed to neonatal and infant health, is resistant to socio-economic indicators and is much more a function of medical care. Indeed, until the 1930's, women of higher social class in England and Whales had higher rates of maternal mortality probably because they were more likely to be delivered by doctors in hospitals and consequently developed sepsis. Presern (1991) reports that traditional midwives refuse to deliver low-caste Nepali women who thus probably received better quality delivery care because they are more likely to turn to modern medical facilities.

Abdulmazed and Samad (2009) carried out a research on Birth Patterns of High-Risk and Low-Risk child bearing of Bangladeshi Women: A Multivariate Statistical Analysis. According to them, high-risk pregnancy is a critical issue in safe motherhood. Child bearing in Bangladesh is characterized by early start of motherhood, quick progress till the peak age of reproduction and slow progress till the end of childbearing period. The article presented the results of logistic regression analysis of both high-risk and low-risk child bearing concerned with parity. Out of 13 variables, 11 variables were influencing the high-risk childbearing and only two variables are influencing low-risk childbearing. The significant variables which influence high-risk childbearing are: child loss experience, duration of conjugal life, education of women, place of residence, age at the first birth, occupation of husband, women's working status, religion, duration of breast feeding, education of husband, and spousal age difference. On the other hand, the variables influencing low-risk of child bearing are: risk at first marriage and contraceptive use.

They opined that every pregnancy faces high-risk and low-risk during the childbearing period. A woman's parity, i.e. fertility is considered as a dependent variable. The aim of their study 'was to identify the variables, which have significant influence on the dependent variables. The logistic regression analysis identified the variable, which have variable influence high-risk childbearing and which variables influence low risk child bearing. They further stated that analysis of childbearing (high-risk or low-risk) is even more complex since a number of biological behavior and cultural factors are associated with it (Abdulmazed & Samad 2009).

The analysis further indicates that child loss experience will affect child bearing pattern. Age at first birth is also an important correlate of a high-risk child bearing pattern, the higher the infant and child mortality in a community, the lower the age at marriage. Thus, improved child survival may help to motivate mothers to prolong birth spacing by practices of breastfeeding and contraceptive use. Education of women is also an important determinant of high risk child bearing. Duration of breast feeding is found to have a significant negative effect on fertility. The total effect of female education on fertility is found to be negative. Education may provide better employment opportunities outside home and providing education to females, especially at the secondary and higher levels can rise at first marriage and age at first birth. Another important factor of high-risk childbearing is the women's work status. Most women in Bangladesh work at home as housewives. For example; cooking and maintaining home, taking care of children and so on.

An important element in understanding the determinants of morbidity and mortality involves the relationship of morbidity to mortality. Each stage is conditional on the previous one, and maternal mortality is conditional on maternal morbidity. Thus pregnancy and the characteristics of a specific morbidity including its severity, duration and pathogenic nature, are frequently labeled "causes" of maternal mortality. These characteristics, their interaction with the woman and with other morbidities or risk factors for the prognosis of morbidity, and the availability, accessibility, quality and effectiveness (including compliance) of services and treatment are grouped as determinants of death. For clarity however, it is preferable to separate those which are

primarily determinants of morbidity or pregnancy. Similarly one type of morbidity may lead to another without necessarily leading to death. Uterine atony may, for example, lead to uterine rupture. In other words, influences which are determinants in one instance may be outcomes in another depending on the stage which is under consideration (Myntti, 1991).

The definition of maternal health proposed by Graham and Campbell (1990) and elaborated by WHO (1990b) encompasses positive and negative outcomes from any cause related to child bearing or its management. Although nulligravid women are excluded, the scope of the definition is only slightly narrowed since maternal morbidity can occur any time following the first pregnancy and continuing beyond the menopause. The definition proposed by Graham and Campbell (1990) is further sub-divided to parallel the definition of maternal mortality. Pregnancy either causes morbidity directly or it interacts with the woman's underlying health condition to cause disease. This concept can be applied to both physical and other forms of ill-health. For example pregnancy can lead to eclampsia (direct physical ill health), or it can aggravate underlying essential hypertension (indirect physical ill-health). Alternatively a teenager socially well-adapted to her milieu may become out cast as an unaware woman or a woman with an untreated vesico-vaginal-fistula may experience a combination of physical, mental and social ill-health.

Unfortunately, the link between pregnancy and specific morbidities is not always as apparent as the above examples. Even if morbidity coincides with pregnancy or the pueperium it is not necessarily maternal morbidity. A study by Datta, Datta, Sharma,

Razack, Ghosh, and Arora (1980) in India reports that only 30% of morbidity during this period is related to pregnancy or the pueperium, implying that 70% of morbidity is not pregnancy-related. By contrast, studies in developing countries have shown that 80-95% of morbidity during pregnancy and pueperium is pregnancy-related (Chen-et-al, (1940), Fortney, Saleh, Gadalla, &Rogers, 1984). Furthermore, while the international classification of disease list codes falling within the maternal death definition, no such criteria are provided for pregnancy-related morbidities WHO, (1990). When underlying morbidity e.g. (diabetes is exacerbated so markedly that it results in death, it is uncontroversial to label the death an indirect maternal one. If the same morbidity is only slightly aggravated, however, it may be difficult to recognize it as an indirect maternal morbidity in the absence of detailed knowledge of the natural history of the disease and its previous presentation in the woman. Indeed it may only be possible to attribute risks associated to pregnancy to populations of women rather than to individuals. Criteria for "normality" are not present in all cases. For example, Weigel and Weigel (1988) argued that nausea and vomiting during pregnancy are signs of good health and that woman experiencing these symptoms are not ill. Unless explicit definitions of maternal morbidity are made and similar ranges of conditions included, data from different studies will not be comparable.

Building up a picture of disease patterns in the absence of pregnancy is virtually impossible in many settings where the majority of women will have been pregnant at least once by a certain age. Settings where this is not the case, as for example in some developed countries tend to experience low rates of morbidity anyway, and women who remain nulligravid in both developed and developing country settings are likely to differ

from their gravid counterparts in many ways, not least in their fecund-debility. For example, Mackie, Bufalino, Sutherland &Cascinelli,1991) studied the risks of complications of melanoma in four groups of women: women with initial melanoma diagnosis before first pregnancy, during pregnancy, after last pregnancy, and between pregnancies. The investigators were unable to compare these with nulliparous women with melanoma because none were available in the study area. Special sub-groups who voluntarily avoid pregnancy, such as nuns, have been used to understand aspects of reproductive epidemiology but this approach has extremely limited potential (Nathanson, 1985).

Three further factors of the morbidity outcome have implications for its identification and the ease and timing of its measurement; the availability of treatment, the repeatable nature of pregnancy, and the possibility of health benefits arising from pregnancy. Some treatments may completely remove all signs and symptoms of the morbidity, while others leave physical traces which can remain constant or be exacerbated by subsequent pregnancies or other events. In extreme cases, the damage may be so great as to prevent further pregnancies, leading to the paradoxical results that women with fewer pregnancies may be the ones bearing the greatest cost of pregnancies (Graham& Danso-Manu, 1988).

Second, the effect of repeated pregnancies on underlying health status may lead to cumulative insults to a woman's health. This will suggest that higher parity women may be an ideal group in which to study maternal morbidity. However, the frequency of, and intervals between, pregnancy are highly related to other biological factors which play a role in health, particularly age. This makes it difficult to adjust for the effects of these

events separately, since high-parity pregnancies will almost inevitably result from shorter intervals and occur at older ages. In assessing the impact of pregnancy on a woman who has had five pregnancies, it is unclear whether the incremental effect on her health should be assessed by comparing her to a woman of the same age with four pregnancies or to an older woman of the same parity. The need to control for other important variables in addition to age and parity, such as socio-economic status, may rapidly lead to small numbers of women under consideration in each category of a data set.

Unless good, representative records are available or morbidities can be recalled over long periods, acquiring a representative sample with sufficient women at various gestational ages to enquire about current morbidity status or morbidity in the previous two weeks can be daunting. In other words, even though maternal morbidity is reported to be at least sixteen times more common than maternal mortality, it can still be rare on a period bases, (Datta, 1980). Some studies, such as those reported by Omran and Standley (1978&1981), have attempted to associate parity with various gynaecological conditions including menstrual problems, vaginal discharge, prolapes, urinary problems, nutritional status, and vaginal or cervical abnormalities. Other less obvious long-term morbidities associated with parity include diabetes mellitus, and may include all circulatory disease, hypertensive disease, ischemic heart disease and sub-arachnoid haemorrhage (Beral, 1985, Green, Beral & Moser, 1988).

Understanding the interaction of indirect morbidities and pregnancy requires knowledge of the natural history of the disease, basic information which is often lacking for example, epidemiological studies are frequently carried out among ‘white middle class males’ and

extrapolated to other groups (Cotton, 1990), making it difficult to understand how conditions are influenced by pregnancy. Indirect morbidities known or suspected to be exacerbated by pregnancy include aids, leprosy, tuberculosis, malaria, malnutrition, and essential hypertension. Jewett (1957) argued the case eloquently for expanding the definition of maternal morbidity using polio myelitis as an example. This disease can kill old or young, male or female, pregnant or non-pregnant and might on the one hand be called non-obstetric. On the other hand, since its incidence in pregnant women is thought to be much greater than in other adults, must it not be called obstetric? (Jewett, 1957).

2.6Theoretical Framework of Reference

2.6.1 Political Economy of Health

Alubo (1985) observed that health care is linked to a nation's political economic system. The state of medical underdevelopment reflects economic underdevelopment. Basic assumptions of political economy perspective are:

a. Society is characterized by class struggle, in which the ruling class uses economic and political power to reinforce its domination and exploitation of the working class.
b. Historical patterns of accumulation in the human society and how generated wealth is distributed among the people is characterized by alienation, which is perpetuated by the class relation.
c. Dominant economic structure of the society determines inequality and power as well as shaping the relations upon which the major social institutions are built.

d. The relations of domination within patriarchal capitalism create conditions of deprivation among the people. In addition, contradictions in the pursuit of society's goals and capitalists interest in the society.

There are two basic variants within this school of thought, namely the liberal, and the radical approaches. Africa and other parts of the developing world treasure motherhood and attach such a high premium to children to the extent that women have little control over their reproductive and maternal health (Berer, 1994; Paolisso & Leslie, 1995). This has consequently led to high fertility rate within the continent thus endangering the health of mothers and children because the higher the number of births per woman the higher the mortality rate and by extension, child mortality rate (Turmen, 1993) especially in a developing nation where the health facilities and nutritional requirements are poor. According to Berer (1994), "we glorify motherhood on the one hand and still we let half a million die each year worldwide in pregnancy, childbirth and dangerous abortion".

Political economy is essentially an approach as well as a realistic methodology with a holistic perspective to the analysis of societal development (Onimode, 1985; Aina, 1986; Ake, 1990; Alubo,1995). While the liberal school of thought stresses the role of marked forces in the distribution and the allocation of resources, including those of health care, the radical school upholds production. For instance, Marx opined that the theory of value relates to the historically specific (capitalist) method of resources in all societies, but goes on to add that the nature, purpose and modus operandi of these laws are shaped by social relations determined in turn by prevailing modes of production of particular epochs (Onimode, 1990).

In time past, all economics was political economy and economists accepted that the parameters within which markets work are determined by politics and history (of course the outcomes of market relations also shape political power and history). For most of the 20th century mainstream economics chose to ignore the politics which shape markets, pre-occupied perhaps by the elegance of their quantitative modeling of economic relationships and economies. During this time political economy became closely identified with Marxism which maintained a focus on the political dimensions of economics. Nevertheless, the term is still used by non-Marxist, even neoliberal economists. In trying to understand how the global economy works (and how it affects health) the discipline of political economy seeks to locate economic analyses within a political environment and seeks to understand the interplay between politics and economics.

Political economists recognize a range of different dynamics which drive the world economy. One of these dynamics may be described as 'growth through productivity'. This applies to situations where, through access to capital and technology, workers can produce more in the same time and (assuming they can access markets) they will earn more, some of which will lead to better health, while some will be invested in increased productivity thereby maintaining the dynamic. Working against this 'growth though productivity' is another dynamic which may be described as 'productivity overhang' or the crisis of overproduction. This applies to situations where increasing productivity jeopardizes jobs (because fewer workers are needed to satisfy the market) and jeopardizes demand (because falling demand for labour reduces consumer demand) and economic activity.

The political economy of health refers to a body of analysis and a perspective on health policy which seeks to understand the conditions which shape population health and health service development within the wider macro-economic and political context. However, the relationships between economic development and health development are complex and can be analyzed in terms of a range of different linkages:

1. economic growth leads to increased resources for health (improved living conditions and better health services);

2. health improvement contributes to economic growth (improved labour productivity and decreased demand for health expenditure);

3. people's health is exchanged for economic growth (mining 'accidents', unhealthy environments) and the 'disease burden' associated with these is the price of economic growth;

4. stagnation damages health (for example, where unemployment, perhaps through the 'productivity overhang', leads to negative health outcomes);

5. winners and losers (distributional effects where the competitive struggle for economic and political advantage enhances the prospects of some but diminishes the prospects for others) (The International People's Health University)IPHU.

In a similar argument than that of the functionalists, political economy writers argue that medicine is closely related to the concept of social control. It is used to define normality, punish deviance and maintain social order. However the crucial difference is that, unlike

functionalism, it sees medicine as operating on behalf of the controlling groups of society.

According to Navarro (1986), capitalism benefits from medicine in three main ways. It ensures that the population remains healthy enough to contribute to the economic system, by working in offices and factories to produce profit for the ruling class. Definitions of health and illness are crucially linked to the ability to produce goods – a healthy person is one who is productive and therefore profit -making for capitalism, an unhealthy person is one who produces no wealth. Doctors ensure that people are fit enough to work.

Medicine has an ideological function by masking the differences in health by social class, gender and ethnicity, which are caused by differences in wealth, income, and living and working conditions. The medical profession does this by providing an explanation of ill-health as the result of bad luck, or of the individual engaging in activities that put health at risk. The wider social factors are therefore ignored and any blame for ill-health is placed upon the individual. Doyal and Pennell (1979) have suggested that these wider factors causing ill-health are a direct result of capitalism. For example, the role of capitalism in generating pollution which causes a wide range of respiratory diseases and cancers is largely ignored, as is limited controls placed upon products such as alcohol and tobacco which are known to cause serious ill-health, but which make enormous profits. They also point to specific conditions of employment under capitalism, which lead to both directly and indirectly to ill-health through such things as industrial accidents, high stress level and alienation.

> So deep is the frustration engendered by work that the incidence of heart attacks among manual workers is higher than that in any other stratum of society. People 'die from work' not only because it is noxious or dangerous – 8 per cent of all working hours are lost through accidents – but because it is intrinsically 'killing' (Navarro, 1986)

Navarro also points out a neglected feature of Medicine: its ineffectiveness. He claims that levels of ill-health for the working class have increased under capitalism and that medicine can do little about it. Navarro argues that, despite its ineffectiveness, medicine has grown because it is a key way of depoliticizing an essentially political situation, which is that the causes of ill-health lie in capitalism. Yet the more the capitalism harms working-class people, the greater is the provision of health care to mask this. So the very ineffectiveness of medicine actually ensures its expansion in capitalism. Illich (1976) opined that such medicine is but a device to convince those who are sick and tired of society that is they who are ill, impotent, and in need of technical repair.

This stress on the biomedical explanation of illness leads to treatments being based upon the use of drugs and advanced technology. In turn, the production of these goods is highly profitable to capitalism. Therefore not only does capitalism create the conditions for poor health, but it also profits from the attempts to cure that same poor health.

Annandale (1998) uses the example of the breast implants provided by a US company, Dow Corning, to show how capitalism benefits from illness. This company began manufacturing breast implants (which increase the size of the bust) made from a type of silicone gel in 1963. The gel implants was used in over a million transplants. In the 1970's, surgeons began to complain that the gel was 'leaking' from the implants in numerous cases and causing serious medical problems. However after discussions with

the company and representatives of the plastic surgeons using the gel, the controlling authority, the US Federal Drugs Agency, refused to intervene and ban the use of silicone. By the late 1990s there were so many cases of problems that were directly traceable to the silicone implants that in a US court case in which damages were demanded, the jury found that the company had continued to provide the implants even when it knew that there were medical dangers associated with their use. In separate court cases in the 1990s, Dow Corning agreed to pay over $4 billion in compensation to women suffering from related medical problems.

This example according to those supporting the political economy perspective, illustrates the way that profit dominates approaches to health in capitalism. The political economy perspective has been very influential, but it has also received numerous criticisms. Hart (1985) has argued that it fails to recognize that capitalism has provided real health care gains as well as increased expectation of life for the majority of the population. Bryan and Turner (1995) have added the point that capitalist societies have been much more effective in advancing the health of the majority of the population than have socialist societies.

Furthermore, Hart points out that much of the Marxist critique of 'capitalism' is in fact a critique of US health care, where the system is largely privatized and exploitative of the poor. It is far less accurate in its description of British and Northern European health care systems, which are freely available to all without payment, and where there is a large body of law which seeks to limit damage to health by work practices and pollution.

> The general impression left by Marxist writers is that capitalism is disastrous for human health. The argument is advanced from the position of a socialist utopia undefined beyond the identification of certain negative features of capitalism…
>
> From this hazy perspective, capitalism is treated as a blanket category with no account taken of the substantial differences between contemporary market societies in standards of health and welfare provision (Hart, 1985).

This approach helps to develop a greater clarity about the forces that promotes or impede better development outcome in the area of health.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This study is a descriptive community-based cross-sectional research which collected primary data on women's indulgence in high-risk pregnancies, manifestations of maternal mortality, relationship between practices of high-risk pregnancies and knowledge of maternal mortality and socio-cultural determinants of high-risk pregnancies through survey, In-depth Interviews (IDI's) and Focus Group Discussions (FGD's) with women within reproductive ages (15-49) and maternal health care providers, which included nurses/midwives, doctors, as well as men in the community.

Description of the Study Location

Jos North Local Government Area of Plateau State is bound on the south by Jos South Local Government Area, with Bassa Local Government Area on its West, while on its North-East is Jos-East Local Government Council. In spite of the small land mass covering 285 square kilometers, it is the most densely populated local government in the state, with a population of 477,000 by the 1991 census records and approximately 900,000 as at 2006 census record. It came into being in September 1991, when the former Jos Local Government was split into North and South. It is situated in the heart of the state. It was carved out of the former Jos division in 1976 during the local government reforms; the area has a council which has an important recognition and

function in the country, through the local government's performance. A fair assessment can be made on how the rural areas have been transformed by the local government (www.joscityweb.com.).

The major ethnic groups found in Jos North Local Government are Berom, Affizere and Anaguta. However, these groups consist of some other tribes within the State, such as Mwaghavul, Ngas, Tarok and Aten and outside the State such as Ibo, Hausa, Fulani, Yoruba, etc. Over two thousand ethnic groups existing in Nigeria who were attracted by trade and the possibility of making money from tin mines and other solid minerals including supply of food and other services live in Jos.

Jos North Local Government Council has one district, named 'Gwong District'. It has fourteen (14) wards as follow: Abba Nashehu, Ibrahim Katsina, Jos Jarawa, Gangare, Tafawa Balewa, Jenta, Garba Daho, Dalhatu, Ali Kazaure, Sarkin Arab, Tudun Wada/Kabong, Naraguta "A" and Naraguta "B" wards. The fourteen (14) electoral ward heads appointed to oversee these jurisdictions were fully integrated into the traditional council, thus representing the Gbong Gwom Jos in these electoral wards.

Annual rainfall in Jos North range between 131.75cm to 146.00cm; the rains are usually accompanied by extra cold temperatures with climatic conditions like in parts of Europe and the United States of America. The local Government lies in the Guinea savannah belt. These allow for growth of economic trees like the locust beans used for making Dadawa cubes and citrus fruits, such as guava and vegetables like tomatoes, onions, cabbage, etc.

The LGA is mainly inhabited by traders, civil servants and farmers. Located in the LGA are the Jos University Teaching Hospital and the University of Jos Clinic. It also has a state specialist hospital, twenty primary health care centers, two mission hospitals and over hundred privately owned clinics. Services offered at all the PHC centers include immunization, ante-natal care, deliveries, past-natal and family planning activities. According to NDHS (2008), the literacy level of women aged 15-49 in Plateau state is 54% and 31% of women aged 15-49 receive delivery care and ante-natal from skilled providers (NDHS, 2008).

The economy of Jos is basically commercial because of its metropolitan nature .There are many large and small scale private and public industrial concerns and various state and federal government establishments which offer white collar-jobs to the urban population. These include Jos International Breweries, Nasco Group of Companies, Jos steel Rolling mill, Market Smelting Company, UTC and Leventis motors among others. The mission of the local government is to transform Jos-North local Government to a model in accordance with the ten point agenda of the dynamic and well-focused governor, DA Jonah David Jang of Plateau (www.joscityweb.com.).

3.2 Types and Sources of Data

According to Gyong (2011:8), data are pieces of empirical information the researcher designs to collect on a particular subject of inquiry. There are basically two types of data namely primary and secondary data. The primary type is usually generated from primary sources such as individuals, while the secondary type is generated from secondary sources, such as medical records from hospitals. For the purpose of this research, the

primary sources of data were women (literate and non-literate, divorced, separated, widowed, and single mothers) within reproductive ages, maternal health care providers, such as nurses/midwives, doctors, as well as married men. Also, seven (7) focus group discussions were conducted with twelve (12) participants in each group, making a total of eighty four (84) participants to generate more primary data alongside sixteen (16) in-depth interviews. In addition, secondary data from governmental and non-governmental published documents were used.

3.4 Population of Study and Sampling Techniques

The study population consisted of women of reproductive ages, their husbands, as well as medical personnel (doctors, nurses/midwives) within Jos North local government area. The purposive sampling method was used to select sixteen (16) key informants for the in-depth interviews (IDI's). Medical personnel, men and women who are knowledgeable about high-risk pregnancies and maternal mortality were selected. The units of analysis were regular households with a group of persons consisting of conjugal families. According to National Population Commission, (NPC, 2006), a regular household consist of the following criteria: presence of recognized household, sharing of catering arrangement, feeling of belonging as a social unit.

A multi-stage sampling technique was adopted for the survey component of the study. A cluster is a group of things of the same kind that is close together. In the absence of direct sampling source, a strategy is needed for linking population numbers to some kind of groupings that can be sampled (Flower, 2009). Given the widely dispersed population of the Local Government, the multi-stage sampling allowed for representation of various

groups with cluster sampling. From the main district, named 'Gwong district'; seven (7) wards were selected through simple random sampling technique out of the fourteen (14) wards. This was done by walking through major streets in each area, north, east, west, and south and administering questionnaires. Households were selected for the study through systematic sampling by selecting three main streets in the community and every third numbered house on both sides of the street for the administration of questionnaire. In houses with one to three households, one household was selected, for houses with four to six households; two were selected, while for those with seven or more, three households were chosen. Within each household, respondents were selected through a simple random sampling. Also some questionnaires were administered to women on ante-natal clinic days of the selected hospitals. A total sample size of 300 respondents was selected for the survey.

In-depth interview key informants were selected through purposive sampling; a non-probability sampling technique. Purposive sampling relies on the investigator to try to collect a wide representation of individuals as possible, taking account of likely sources of differences in their views and experiences (Hall and Hall 1996:115). The chance that a particular sampling unit will be selected for the sample depends on the judgment of the researcher (Nachmias and Nachmias, 1981:299, cited in Nwagbara, 2007). This sampling method was chosen to select key informants for in-depth interview with men and women who are knowledgeable about high-risk pregnancy and maternal mortality. Purposive sampling was also used to select discussants for FGDs. The target population was married couples (living together), married men and women (men and women that have married before, and have had children, but are either divorced, separated or are widows

or widowers), and medical personnel's (doctors, nurses and midwives). Factors like literacy and age category was taking into consideration especially in the groups that involved women.

The Yamane's formula was used to determine the sample size.

$$n = \frac{N}{1 + N\,(e)^2}$$

Where: n = sample size

N = total population

e = level of significance $(0.05)^2$

$$n = \frac{900{,}000}{1 + 900{,}000\,(0.05)^2} = 399.8 \sim 400$$

(*https://blogs.sans.org/computer-forensics/files/2010/03/statisticalforensictriage.pdf-Taro Yamane's* formula for sample size determination. Retrieved 8-1-2013).

Three hundred women within reproductive ages were administered with questionnaires and medical personnel, married men and women were engaged in FGD's and IDI's, which compensated for the remaining hundred percent.

3.5Methods of Data Collection

Both quantitative and qualitative techniques were triangulated for analysis.

3.5.1 Quantitative Data Collection Instrument

Quantitative design is basically survey, which emphasizes the collection of mass data from a large body of individuals (Gyong, 2011).The questionnaire served as the survey

instrument; it contained both open-ended and closed ended questions with options. The questions were presented in a printed form and administered by the researcher. Questions were developed based on the four objectives of the study, divided into five sections, starting with socio-demographic data, practices of high-risk pregnancies, manifestations of maternal mortality, socio-cultural factors responsible for high-risk pregnancies and relationship between practices of high-risk pregnancies and knowledge of maternal mortality. The objective of the questionnaire was to obtain adequate, reliable and valid information on the subject of research. The languages that are basically used in communication in Plateau state apart from native languages are English and Hausa language. These were the two basic languages the researcher used in communicating with the respondents and collecting data.

3.5.2 Qualitative Data Collection Instrument

Seven (7) FGDs were conducted with 12 participants in each group. The first and second group consisted of women within reproductive ages (i.e. 15-45 years), the third and fourth group consisted of nurses/midwives, and the fifth group consisted of medical doctors, and the other groups were a combination of participants. Participants' age and literacy level were taking into consideration in the groupings. An FGD guide was made based on the objectives of the study; participants were asked questions and probed for further responses by reframing the questions and asking them again. A note taker and a moderator were assigned to take notes and moderate sessions. The FGDs were conducted in Kauna Hospital, University of Jos Clinic, Solat Women hospital and Jos university teaching hospital. Data was collected by developing a plan for analysis, analyzing the content of the group discussion, synthesizing the group discussions and interpreting the

recurrent ideas based upon other findings that emerged in the groups. Also sixteen (16) in-depth interviews were conducted, with women as well as medical personnel's who served as key informants. The purpose of the FGDs and IDIs were to gain knowledge about high-risk pregnancies and maternal mortality by discussing with a group of women directly affected by the problem, as well as people who are knowledgeable about it, to explore the depth and nuances of opinions. A tape recorder was used with the consent and permission of the participants to record the data.

3.6Methods of Data Analysis

3.6.1 Quantitative Data Analysis

The data from primary sources like questionnaire was analyzed by first numbering the questionnaire and arranging them according to the numbers. A code book was then prepared and the data was feed into it based on the questions asked. Data was then transferred to a code sheet. For open ended questions, the researcher went through all the questionnaires and defined categories for them. Finally, data was analyzed using Social Science Statistical Package (SPSS). Both descriptive and inferential statistics were used. For uni-variant variables, frequency and simple percentages were used to describe the data. Chi-Square (x^2) analysis was used to explore the relationship between variables. Furthermore, statistical calculations were performed with the raw data using simple percentages to provide answers to the questions initiating the research. The presentation of results took the form of tables. The interpretation took the results of analysis, and made inferences pertinent to the research relations studied, and drew conclusions about those solutions.

3.6.2 Qualitative Data Analysis

According to Erinosho (2002), the analysis of data from in-depth interviews demands personal intuition, imagination and internal logic guided by the cultural and behavioral context of the community or phenomenon being studied. It entails identifying major concepts relevant to the topic being examined, establishing the categories for putting the data together, coding the data by bunching them up into the identified category and comparing the data from the interviews with data from diverse either sources. The data was first transcribed by transferring the respondent's opinion to paper for analysis. The context and meaning of the situation as well as non-verbal cues were noted. Major concepts relevant to high-risk pregnancies and maternal mortality were identified; data was coded by bunching them into the identified categories. The data was then presented alongside the quantitative data for triangulation of analysis. Debus (1988) suggested some useful guidelines for analyzing FGD data by developing a plan for analysis, analyzing the content of the group discussion, synthesizing the group discussion and interpreting the recurrent ideas based upon other findings that emerged in the groups. These steps were followed to analyze data from the FGDs.

3.7 Variables

From the research topic: High-Risk Pregnancies and Perceptions of Maternal Mortality among Women in Plateau State of Nigeria, there are two (2) variables, namely:

a. Independent variables -High Risk Pregnancies (pregnancy that occurs when mothers are too young i.e. below 18yrs or too old i.e. above 34yrs; when children are born at a less than two-years birth interval i.e. poor birth spacing,

and when there are high-birth order children i.e. continuous child bearing after having a large number of children).

b. Dependent variables –Perception of Maternal Mortality (Knowledge of maternal mortality, period of maternal mortality, marital status category that experience maternal mortality most, age category of women that experience maternal mortality most and class of women that experience maternal mortality most).

3.8 Ethical Considerations

At the field work stage, the researcher familiarized herself with the research environment and gate keepers, then explained her intentions and gained acceptability. With good attitudinal conduct, carried out the research, taking into consideration the following ethics of research:

a. Voluntary participation
b. No physical or emotional harm to subjects
c. Integrity
d. PAC: Privacy, anonymity and confidentiality.
e. Social Responsibility

1.9 Field Experience and Problems

The researcher had to interview a few respondents who were not literate (could not read and write) based on the questions outlined in the questionnaire. This took longer time than required to fill a questionnaire. Also the researcher took time to explain terms which the respondents did not understand, there by guiding them. Respondents complained that

filling of the questionnaires took time; this was due to the number of questions they responded to. As such, some were reluctant to provide responses but after being explained to, that it will be kept confidential, responses were given. However, few of them did not provide responses to the open-ended questions. At the end of the fieldwork, 300 filled questionnaires were retrieved. In the course of the FGD's and the IDI's, the researcher had to ask the questions several times in different ways and probed further to get detailed information. Notwithstanding, the problems faced in conducting the research did not in any way affect the reliability and validity of the work, because the researcher persevered and ensured the successful completion of the work.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents data obtained from the fieldwork. The chapter is divided into seven sections; the first section is socio-demographic attributes of respondents. Practices of high-risk pregnancies are the second section; the third section is on manifestations of maternal mortality. Socio-cultural determinants of high-risk pregnancies comprise the fourth section; relationship between practices of high-risk pregnancies and perceptions of maternal mortality is the fifth section and the sixth section contains cross-tabulations and chi-square tests on socio-cultural attributes of respondents and their involvement in high-risk pregnancies. The seventh section is discussion of findings. Three hundred copies of questionnaires were administered to respondents by the researcher and all were retrieved. Seven (7) Focus Group Discussions (FGD's) and sixteen (16) in-depth interviews (IDI's) were conducted with women within reproductive ages and medical personnel. Therefore, analysis and interpretations are based on that.

4.2Socio-Demographic Attributes of Respondents

This section analyzed socio-demographic indicators of respondents, which include: marital status, religion, age category, occupation, and educational attainment. The age of an individual is vital in this study as it is an indicator of maturity, familiarity and degree

Table 4.2.1: Socio -Demographic Attributes of Respondents

Variables	Frequency	Percentage
Marital status		
No response	3	1.0
Married	263	87.7
Divorced	12	4.0
Separated	4	1.3
Widowed	18	6.0
Total	**300**	**100.0**
Religion		
Christianity	238	79.3
Islam	62	20.7
Total	**300**	**100.0**
Age Category		
No response	6	2.0
15-19yrs	10	3.3
20-24yrs	33	11.0
25-29yrs	44	14.7
30-34yrs	86	28.7
35yrs above	121	40.3
Total	**300**	**100.0**
Occupation		
No response	7	2.3
House wife	70	23.3
Civil servant	113	37.7
Unemployed	24	8.0
Trader	2	.7
Self-employed	84	28.0
Total	**300**	**100.0**
Educational attainment		
No response	3	1.0
Primary	20	6.7
Secondary	107	35.7
Tertiary	146	48.7
Not educated	4	1.3
Others	20	6.7
Total	**300**	**100.0**

SOURCE: Author's field work, 2013.

of understanding of reproductive health problems such as high-risk pregnancies and maternal mortality. Educational status is essential in assessing the influence of high-risk pregnancies on maternal mortality, contribution to positive health seeking behavior and change in mortality. Religion is also vital in this study as it explains beliefs of respondents.

All respondents for the survey were women; therefore sex was not included as a variable in the socio-demographic attributes of respondents. Table 4.2.1 above indicates that 87.7% (263) were married women, compared to 4.0% (12) who were divorced and 1.3% (4) who was separated and 6.0% (18) widows. Majority of the respondents 79.3% (238) were Christians, compared to the 20.7% (62) who were Muslims. The age distribution of respondents shows that 3.3% (10) were within the age category of 15 – 19 years, 11.0% (33) were within the age category of 20 – 24 years, 14.7% (44) were within the age range of 25 – 29 years, 28.7% (44) were within the age range of 30 – 34 years and the majority 40.3% were within the age range of 35 years and above. Furthermore majority of the respondents 37.7% (113) were civil servants, 23.3% (70) were house wives, 8.0% (24) unemployed; 0.7% (2) were traders, 28.0% (84) were self-employed. On educational attainment, the distribution above shows that 48.7% (146) had tertiary education, compared to 35.7% (107) who had secondary education; 6.7% (20) had primary education, compared to 1.3% (4) who had no formal education and 6.7% who had other forms of education.

4.3 Practices of High-Risk Pregnancies

This section assessed the indicators of high-risk pregnancies in terms of age at marriage, age at first child birth, average age difference between children, frequency of child birth and total number of children a woman bore.

With reference to age at marriage, table 4.3.1 below shows that majority 35.0% (105) of the women married between the ages of 20 – 24 years, compared to 26.0% (78) of respondents who married between the ages of 25 – 29 years; 23.3% (70) married between the ages of 15 – 19 years, compared to 9.3% (28) who married between the ages of 30 – 34 years and 4.3% (13) married within the age range of 35 years and above.

In response to the question on age at marriage, a discussant (medical doctor from JUTH) said:

> "Most women marry between the ages of 15-30 years old, elderly primigravida (first pregnancy at 34yrs and above) is not quite common in this part of the country".

Also, a key informant (nurse from Solat Women Hospital) said:

> "I grew up in Jos North L.G.A of Plateau state, and have worked there for a long time as a nurse. I have observed that for the non-literate, early pregnancy (below the age of 18) is common among them, while for the literate they get pregnant mostly at age 20 and above and most of them marry at about that age"

Another discussant (a medical doctor from JUTH) said:

> "Age at marriage depends on the socio-economic status, religion and culture of the people. It has been observed that most Muslims especially the less educated ones marry much earlier than the educated ones and start child bearing before the age of 18 years, while most educated people marry in their twenties, they also delay child bearing to that age. The case is different in the Western and Southern part of the country, where people who marry at age 25 are considered to have married early..."

Table 4.3.1 Practices of High-Risk Pregnancies

Variables	Frequency	Percentage
Age at marriage		
No response	6	2.0
15-19yrs	70	23.3
20-24yrs	105	35.0
25-29yrs	78	26.0
30-34yrs	28	9.3
35yrs above	13	4.3
Total	**300**	**100.0**
Age at first child birth		
No response	20	6.7
15-19yrs	40	13.3
20-24yrs	106	35.3
25-29yrs	95	31.7
30-34yrs	28	9.3
35yrs above	11	3.7
Total	**300**	**100.0**
Average age difference between children		
No response	42	14.0
1yr	11	35.7
2yrs	27	37.7
3yrs	113	9.0
4yrs above	107	3.7
Total	**300**	**100.0**
Frequency of child birth		
No response	50	16.7
Yearly	20	34.7
Every 2 years	126	42.0
More than every 2 years	104	6.7
Total	**300**	**100.0**
Total number of children including previous marriages if any		
No response	35	11.7
One	46	15.3
Two	59	19.7
Three	51	17.0
Four and above	109	36.3
Total	**300**	**100.0**

SOURCE: Author's field work, 2013.

The data on age at first child birth indicated that majority of respondents; 35.3% (106) started bearing children within the age range of 20 – 24 years, compared to 31.7% (95) who started within the age range of 25 – 29 years; 13.3% (40) started within the age range of 15 – 19 years, while 9.3% (28) started within the age range of 30 – 34 years and 3.7% (11) within the age range of 35 years and above.

The data on the average age difference between children indicated that most women 37.7%(27) gave a 2 years spacing between their children, compared to 35.7% (11) who gave a year birth interval between their children; 9.0% (113) gave 3 years birth interval between their children, compared to 3.7% (107) who gave 4 years birth interval between their children.

In response to the question on birth spacing and decisions about when a woman should become pregnant a discussant (medical doctor from JUTH) said:

> "The common birth interval women in Jos North give their children is between 1-2 years, but I have seen an interval of 3months birth spacing in this hospital (JUTH) as in when the baby was 3months old, the mother became pregnant again "SIC"… that was a high-risk pregnancy, because the mother needed time to rest, breastfeed and eat well for her body to normalize. A less than 2years birth spacing is a high-risk factor and will constitute stress for the mother and may even lead to maternal mortality…"

Also, on the frequency of child birth, the distribution indicated that majority of the respondents 42.0%(126) gave birth after every two years, compared to 34.7% (20) of the respondents who gave birth yearly and 6.7% (104) who gave birth after 3 years and above. The distribution on the total number of children a woman bore indicated that majority (36.3%) 109 had four children and above, this implies that birth order greater than 4 which is a high-risk factor was commonly practiced. Also, 19.7% had two

children, compared to 17.0% (51) of the respondents who had three children, and 15.3% (46) had a child.

4.4 Manifestations of Maternal Mortality

This section analysed the knowledge of respondents on maternal mortality within the last 5years, manifestations of maternal mortality, period of maternal mortality (is it during pregnancy, during labour or after child birth) marital status category that experience maternal mortality most (is it the single, married or divorced), and age category of women that experience maternal mortality most (is it the younger women, middle aged women, or older women).

Table 4.4.1 below shows data on respondents' knowledge of maternal mortality within the last 5 years. It indicated that 64.7% (194) had knowledge of such and 26.0% (78) had no knowledge of such. The distribution on respondents perception of causes of maternal mortality indicated that bleeding (haemorrhage) 21.0% (63) was the number one cause of maternal mortality, followed by complications during labour which accounted for 15.3%(46), then high blood pressure (eclampsia), which accounted for 7.3% (22); lack of ante-natal/ cesarean section (CS) were responsible for 7.0%(21) based on misconceptions and beliefs some women attached to them, while sickness during pregnancy period was 3.3% (10), compared to poverty/inability to obtain medical care which resulted in 2.3% (7) and late medical attention accounted for 1.7% (5), compared toectopic pregnancy which accounted for 1.0% (3).

On period of maternal mortality, 32.0% (96) of respondents opined that women died most during labour, while 31.0% (93) of them opined that women died most after child birth

Table 4.4.1 Manifestations of Maternal Mortality

Variables	Frequency	Percentage
Knowledge of anybody that died as a result of pregnancy or childbirth within the last 5years		
No response	28	9.3
Yes	194	64.7
No	78	26.0
Total	**300**	**100.0**
Causes of maternal mortality		
No response	120	40.0
High blood pressure(Pre-Eclampsia)	22	7.3
Sickness during pregnancy period	10	3.3
Complications during child birth(Labour)	46	15.3
Poor medical attention	3	1.0
Poverty/Inability to obtain medical care	7	2.3
Ectopic pregnancy	3	1.0
Bleeding(Haemorrhage)	63	21.0
Late medical attention	5	1.7
Misconception and believes on ante-natal/CS and others	21	7.0
Total	**300**	**100.0**
Period of maternal mortality		
No response	82	27.3
During pregnancy	29	9.7
During labour	96	32.0
After child birth (Pueperium)	93	31.0
Total	**300**	**100.0**
Marital status category that experience maternal mortality most		
No response	44	14.7
Single	60	20.0
Married	173	57.7
Divorced	23	7.7
Total	**300**	**100.0**
Age category of women that experience maternal mortality most		
No response	36	12.0
Young women	139	46.3
Middle aged women	76	25.3
Older women	49	16.3
Total	**300**	**100.0**

SOURCE: Author's field work, 2013.

(pueperium), and 9.7% (29) of them opined that women died most while pregnant. On the marital status category that experience maternal mortality most, respondents opined that

married women 57.7% (173) experienced maternal mortality most, followed by single women 60(20.0%), then divorced women7.7% (23). However, results from FGD's and in-depth interviews revealed that every marital status category had an equal chance of experiencing maternal mortality. On the age category of women that experience maternal mortality most, respondents opined that younger women 46.3% (139) experienced maternal mortality most, followed by middle aged women 25.3% (76), then older women 16.3% (49).

One of the discussants, a nurse from the university of Jos medical center had this to say concerning the manifestations of maternal mortality:

> "…death is inevitable but poor women die most out of poverty. Younger women die most during pregnancy and child birth because complications are higher in early pregnancy. Poor women tend to die most during pregnancy and child birth because they may not be able to afford proper medical attention…"

4.5 Socio-Cultural Determinants of High-Risk Pregnancies

This section analyzed the socio-cultural factors responsible for high-risk pregnancies. The factors are: early pregnancy, late pregnancy, poor birth spacing, continuous child bearing after having a large number of children, non-attendance of ante-natal clinics, poverty, lack of family planning, son preference, seeking permission from spouses before going to a health facility and misconceptions attached to caesarean section (C/S).

Table 4.5.1 below shows the data on socio-cultural determinants of high-risk pregnancies. 76.3% (229) of the respondents opined that becoming pregnant at an age below 18 years is high-risk pregnancy, while 21.0% (63) of the respondents objected. In response to the

question on whether becoming pregnant at an age below 18 is a high-risk pregnancy or not, a key informant (nurse from University of Jos medical centre) had this to say:

> "Below 18 years of age, females are not matured enough to carry pregnancy. In most cases they end up with septicemia or anemia, which could lead to death because the pelvis and the uterus are not yet ready to carry pregnancies, but in cases of occurrence, close medical attention and advice can help. There may be some difficulty in pushing since the bones around the pelvis are not well developed this may lead to obstructed labour…"

Also, 51.7% (155) of the respondents agreed to the fact that pregnancies at the age of 35 years and above are high-risk pregnancies, while 42.3% (127) disagreed. In addition to this, a discussant (medical doctor from JUTH) said:

> "At the age of 34 and above the woman is getting closer to menopause and the hormones concerned with pregnancy may reduce. There is a risk of anxiety, abnormality and sterility; it is called elderly prime for those going in for the first time and grand multi-party for someone that have had children and is still giving birth at that age. They are more prone to polyhydraminios, a medical condition whereby there is excessive hypnotic fluid in the amniotic sac, which can compromise the life of the baby and they are also prone to having still births and malformed children…"

In addition, 82.0% (246) of the respondents opined that continuous child bearing after having a large number of children is high-risk pregnancy, while 13.0% (39) objected. Also, from the results of the FGD's, a discussant (nurse from Kauna Hospital) said:

> "Continuous child bearing after having a large number of children poses a big risk on the health of the mother. There is a tendency of having ruptured uterus, because the elasticity of the uterine wall is no longer there, also a tendency of having abnormal babies, post-partum haemorrhage and maternal mortality. It may lead to socio-economic crises as the woman may not be able to cater for her needs and that of her children. The cervix becomes loosed; the uterus becomes weak as a result of giving birth to too many children, which may lead to maternal mortality. If Iron stores which are the back bone of cell formation are depleted, the uterus becomes a bit large, so there is a tendency for unstable lie and code prolapsed. Iron deficiency and anemia is higher with multiple pregnancies…"

In response to the question on family planning and giving birth to more children after having a large number of children, a discussant (woman within child bearing age) said:

> "I don't believe in family planning practice, I will keep bearing children until all the seeds God have put in me are born. Child birth comes with celebrations and I receive many gifts like wrappers, soaps, and ram is slaughtered to mark the naming ceremony, which makes the woman wealthier. To have many children is to have plenty respect and wealth and there is joy in being called a proud mother of many children and if a woman does not bear children, her husband is forced to marry another wife".

Also, 88.3% (265) of the surveyed respondents were of the view that poor birth spacing is high-risk pregnancy, while 8.0% (8.0) of the respondents were of a different opinion. From the results of the in-depth interview concerning poor birth spacing and high-risk pregnancies, a key informant (nurse from Solat women hospital) said:

> "The mother will not have rest. Frequent giving birth without proper spacing can lead to maternal mortality. Bleeding can set in, also; the body of the woman may swell as a result she may die. Every time she gives birth she loses blood, there is also a lot of stress involved, which may lead to death. For example, a woman who is breast feeding a baby and carrying another pregnancy is causing harm to herself, the fetus in the womb and the baby she is breast feeding are also at risk. There is a tendency for the mother to be malnourished and anemic, because each time she goes into labour she loses blood and if within a short, time she is back there again, it puts her at risk. The uterus of the woman needs time to go back to its normal position due to the previous birth; it becomes over-burdened if she takes inn again the following year or months after delivery".

Furthermore, 77.7% (233) of the respondents said poverty can lead to high-risk pregnancies, while 18.0% (54) of the respondents had a different opinion. On the desire for a particular sex of child, 79.3% (238) of the respondents opined that it can lead to high-risk pregnancies, while 17.3% (52) of the respondents were of a different opinion. In responds to the question on the demand for a specific sex of child and high-risk pregnancies, a discussant (medical doctor from JUTH) said:

> "Many Africans believe that a woman must have a male child or else she is regarded as an unfortunate wife, because the man bears the family name and caries it on to the next generation. In most cases, the woman keeps on giving birth until she gets a male child, which may be risky to her health. Despite the risks involved in continuous child bearing, the woman would rather bear it all than lose her husband to another woman that can give him a male child"

Also, 83.0% (249) of the respondents that were surveyed opined that non-attendance of ante-natal clinics during pregnancy period predisposes a woman to having high-risk pregnancies, while 11.3% (34) of the surveyed respondents disagreed to that. In response to the question on non-attendance of antenatal clinics, and health seeking behaviour of women during their pregnancy period, a discussant (medical doctor from JUTH) said:

> "Failure to attend ante-natal clinics has caused death for many mothers. Apart from health education that mothers are taught during ante-natal clinics, they are examined by nurses and doctors who identify some of the risk factors in pregnancy and medical conditions that can affect the mother and such conditions are given quick attention…"

On the frequency of attending ante-natal clinics, 59.7% (179) of the surveyed respondents said they attend ante-natal clinics as specified by the doctor, 21.3% (64) said monthly, 6.7% (20)said they attend ante-natal clinics only if their husbands permit them to attend, 5.0% (15) said they attend ante-natal weekly, while 2.0% (6) said they do not attend ante-natal clinics at all. Also, 47.7% (143) of the respondents said they sought permission from their husbands before going to the hospital during their pregnancy periods, while 47.3% (142) said they do not have to seek permission from their husbands before going to hospital.

In addition, 66.7% (200) of the respondents said they have knowledge of family planning, while 27.0% (81) said they do not have any knowledge of family planning. Furthermore, 64.7% (194) of the respondents opined that non-practice of family planning can lead a

Table 4.5.1 Socio-Cultural Determinants of High-Risk Pregnancies (I)

Variables	Frequency	Percentage
Becoming pregnant at an age below 18 is high-risk pregnancy?		
No response	8	2.7
Yes	229	76.3
No	63	21.0
Total	**300**	**100.0**
Pregnancy at the age of 34 and above is high-risk pregnancy?		
No response	18	6.0
Yes	155	51.7
No	127	42.3
Total	**300**	**100.0**
Continuous child bearing after having a large number of children is high-risk pregnancy?		
No response	15	5.0
Yes	246	82.0
No	39	13.0
Total	**300**	**100.0**
Poor birth spacing is high-risk pregnancy?		
No response	11	3.7
Yes	265	88.3
No	24	8.0
Total	**300**	**100.0**
Poverty can lead to high-risk pregnancies?		
No response	13	4.3
Yes	233	77.7
No	54	18.0
Total	**300**	**100.0**
Desire for a particular sex of child can lead to high-risk pregnancies?		
No response	10	3.3
Yes	238	79.3
No	52	17.3
Total	**300**	**100.0**
Non-attendance of ante-natal clinics during pregnancy period can lead to high-risk pregnancies?		
No response	17	5.7
Yes	249	83.0
No	34	11.3
Total	**300**	**100.0**

SOURCE: Author's field work, 2013.

Table 4.5.1 Socio-Cultural Determinants of High-Risk Pregnancies (II)

Variables	Frequency	Percentage
How often do you attend ante-natal clinics?		
No response	16	5.3
Weekly	15	5.0
Monthly	64	21.3
As specified by the Doctor	179	59.7
If my husband permits me	20	6.7
I do not attend	6	2.0
Total	**300**	**100.0**
Do you have to seek permission from your husband before going to the hospital when pregnant?		
No response	15	5.0
Yes	143	47.7
No	142	47.3
Total	**300**	**100.0**
Do you have knowledge of any family planning method?		
No response	19	6.3
Yes	200	66.7
No	81	27.0
Total	**300**	**100.0**
Do you think non-practice of family planning method can lead to high-risk pregnancies?		
No response	18	6.0
Yes	194	64.7
No	88	29.3
Total	**300**	**100.0**
Do you have a previous history of C/S (Caesarean Section)	18	6.0
No response		
Yes	75	25.0
No	207	69.0
Total	**300**	**100.0**
If Yes, how many times?		
No response	227	75.7
Once	37	12.3
Twice	25	8.3
Three times	11	3.7
Total	**300**	**100.0**

SOURCE: Author's field work, 2013.

woman to have high-risk pregnancies, while 29.3% (88) had an entirely different opinion.

Also, 69.0% (207) of the respondents indicated that they have had a previous history of caesarean section (c/s), while 25.0% (75) indicated that they had no previous history of c/s. In addition to that, 12.3% of the respondents said they had gone through c/s once, 8.3% (25) said they had gone through c/s twice, and 3.7% (11) said they had gone through c/s trice.

4.6 Relationship between Practices of High-Risk Pregnancies and Perceptions of Maternal Mortality

Table 4.6.1 below shows the relationship between practices of high-risk pregnancies and perceptions of maternal mortality. 74.7% (224) of the surveyed respondents opined that pregnancy at an age below 18 years is high-risk and can lead to maternal mortality, while 18.7% (56) of the respondents had a different opinion. Also, 48.7% (146) of the respondents opined that child bearing at the age of 34 years and above is high-risk and can lead to maternal mortality, while 39.3% (118) had a different opinion. In addition, 80.0% (240) of the respondents' opined that continuous child bearing after having a large number of children is high-risk and can lead to maternal mortality, while 12.3% (37) of the respondents had an entirely different opinion.

Furthermore, 72.0% (216) of the surveyed respondents opined that poor birth spacing is high-risk and can lead to maternal mortality, while 21.3% (64) of the respondents objected. Lastly, 71.0% (213) of the respondents said their mode of last delivery was normal (spontaneous virginal delivery), while 14.7% (44) said they delivered their last babies through caesarean section (c/s).

Table 4.6.1 Relationship between Practices of High-Risk Pregnancies and Perceptions of Maternal Mortality

Variable	Frequency	Percentage
Do you think becoming pregnant at an age below 18 can lead to maternal mortality?		
No response	20	6.7
Yes	224	74.7
No	56	18.7
Total	**300**	**100.0**
Do you think becoming pregnant at the age of 34 and above can lead to maternal mortality?		
No response	36	12.0
Yes	146	48.7
No	118	39.3
Total	**300**	**100.0**
Do you think continuous pregnancy after having a large number of children can lead to maternal mortality?		
No response	23	7.7
Yes	240	80.0
No	37	12.3
Total	300	100.0
Do you think poor birth spacing can lead to maternal mortality?		
No response	20	6.7
Yes	216	72.0
No	64	21.3
Total	**300**	**100.0**
What was your mode of last delivery?		
No response	43	14.3
Spontaneous virginal delivery(Normal delivery)	213	71.0
Cesarean section(CS)	44	14.7
Total	300	100.0

SOURCE: Author's field work, 2013.

4.7 Socio-Cultural Attributes of Respondents and High-Risk Pregnancies

This section contains cross-tabulations which explain the relationship between socio-cultural determinants of high-risk pregnancies and socio-cultural attributes of respondents. It also analyses respondents' perception of maternal mortality. Chi-square tests were employed to show the degree of relationship between the variables.

Table 4.7.1 Relationship between Religion and Age at marriage

			Age at marriage					Total
			15-19yrs	20-24yrs	25-29yrs	30-34yrs	35yrs above	
Religion	**Christianity**	Count	43	82	70	27	12	238
		% within Religion	18.1%	34.5%	29.4%	11.3%	5.0%	100.0%
		% of Total	14.3%	27.3%	23.3%	9.0%	4.0%	79.3%
	Islam	Count	27	23	8	1	1	62
		% within Religion	43.5%	37.1%	12.9%	1.6%	1.6%	100.0%
		% of Total	9.0%	7.7%	2.7%	.3%	.3%	20.7%
Total		Count	70	105	78	28	13	300
		% within Religion	23.3%	35.0%	26.0%	9.3%	4.3%	100.0%
		% of Total	23.3%	35.0%	26.0%	9.3%	4.3%	100.0%

$X^2_c = 25.854$ Alpha level = .000 df = 5 $X^2_t = 13.388$

Table 4.7.1 above shows that religion has a significant influence on the age at which women get married. The data shows that between the ages of 15-19yrs, more Muslims 43.5%(27) got married, compared to 18.1%(43)Christians who got married at that age. Also, 5.0% (12) of the Christians got married at the age of 35yrs and above, compared to

1.6% (1) of the Muslims respondents who got married at that age. Since calculated X^2 value (25.854) is greater than the table X^2 test (13.388), it shows a significant relationship between religion and age at marriage.

Table 4.7.2 below shows that religion has a significant influence on age at first child birth. The data shows that between the ages of 15-19yrs, more Muslims 30.6% (19) had their first child birth, compared to 8.8% (21) Christians who had their first child birth at that age. Also, 4.6% (11) of the Christians had their first child birth at the age of 35yrs and above, compared to 0.0% (0) of the Muslims respondents who had their first child birth at that age. Since calculated X^2 value (37.323) is greater than the table X^2 test (13.388), it shows a significant relationship between religion and age at first child birth.

Table 4.7.2 Relationship between Religion and Age at first Child Birth

			Age at first child birth					Total
			15-19yrs	20-24yrs	25-29yrs	30-34yrs	35yrs above	
Religion	**Christianity**	Count	21	82	84	28	11	238
		% within Religion	8.8%	34.5%	35.3%	11.8%	4.6%	100.0%
		% of Total	7.0%	27.3%	28.0%	9.3%	3.7%	79.3%
	Islam	Count	19	24	11	0	0	62
		% within Religion	30.6%	38.7%	17.7%	.0%	.0%	100.0%
		% of Total	6.3%	8.0%	3.7%	.0%	.0%	20.7%
Total		Count	40	106	95	28	11	300
		% within Religion	13.3%	35.3%	31.7%	9.3%	3.7%	100.0%
		% of Total	13.3%	35.3%	31.7%	9.3%	3.7%	100.0%

$X^2_c = 37.323$ Alpha level = .000 df = 5 $X^2_t = 13.388$

Table 4.7.3 below shows that religion has a significant influence on birth spacing. The data shows that more Muslims 3.8% (9) gave one year birth spacing, compared to 3.2% (2) Christians who also gave one year birth spacing; 6.7% (16) of the Christian respondents gave two years birth spacing, compared to 17.7% (11) of the Muslim respondents who gave two years birth spacing;39.5% (94) of the Christian respondents

Table 4.7.3 Relationship between Religion and Average Age difference between Children

			Average age difference between children				Total
			1yr	2yrs	3yrs	4yrs above	
Religion	**Christianity**	Count	2	16	94	90	238
		% within Religion	3.2%	6.7%	39.5%	37.8%	100.0%
		% of Total	.7%	5.3%	31.3%	30.0%	79.3%
	Islam	Count	9	11	19	17	62
		% within Religion	3.8	17.7%	30.6%	27.4%	100.0%
		% of Total	3.0	3.7%	6.3%	5.7%	20.7%
Total		Count	11	27	113	107	300
		% within Religion	3.7%	9.0%	37.7%	35.7%	100.0%
		% of Total	3.7%	9.0%	37.7%	35.7%	100.0%

$X^2_c = 11.901$ Alpha level = .018 df = 4 $X^2_t = 5.989$

gave three years birth spacing, compared to 30.6% (19) of the Muslim respondents who gave three years birth spacing; and 37.8% (90) of the Christian respondents gave four years birth spacing, compared to 27.4% (17)of the Muslim respondents who gave four year birth spacing. Since calculated X^2 value (11,901) is greater than the table X^2 test

(5.989), it shows a significant relationship between religion and average age difference between child births.

Table 4.7.4 Relationship between Religion and Frequency of Child Birth

			How often do you give birth		Total
			Every 2 years	More than every 2 years	
Religion	**Christianity**	Count	102	90	238
		% within Religion	42.9%	37.8%	100.0%
		% of Total	34.0%	30.0%	79.3%
	Islam	Count	24	14	62
		% within Religion	38.7%	22.6%	100.0%
		% of Total	8.0%	4.7%	20.7%
Total		Count	126	104	300
		% within Religion	42.0%	34.7%	100.0%
		% of Total	42.0%	34.7%	100.0%

$X^2_c = 18.741$ Alpha level = .000 df = 3 $X^2_t = 9.837$

Table 4.7.4 above shows that religion has a significant influence on the frequency of child births. The data shows that more Muslims 17.7% (11) gave birth yearly, compared to (3.8%)9 Christians who gave birth yearly; 42.9% (102) of the Christian respondents gave birth every two years, compared to 38.7% (24) of the Muslim respondents who gave birth every two years; 37.8% (90) of the Christian respondents gave birth in more than every two years (3yrs and above), compared to 22.6% (14) of the Muslim respondents who gave birth in more than every two years. Since calculated X^2 value (18.741) is

greater than the table X^2 test (9.837), it shows a significant relationship between religion and frequency of child birth.

Table 4.7.5 Relationship between Religion and total number of Children

			Total number of children including previous marriages if any				
			One	Two	Three	Four and above	**Total**
Religion	**Christianity**	Count	41	55	42	75	238
		% within Religion	17.2%	23.1%	17.6%	31.5%	100.0 %
		% of Total	13.7%	18.3%	14.0%	25.0%	79.3%
	Islam	Count	5	4	9	34	62
		% within Religion	8.1%	6.5%	14.5%	54.8%	100.0 %
		% of Total	1.7%	1.3%	3.0%	11.3%	20.7%
Total		Count	46	59	51	109	300
		% within Religion	15.3%	19.7%	17.0%	36.3%	100.0 %
		% of Total	15.3%	19.7%	17.0%	36.3%	100.0 %

$X^2_c = 18.616$ Alpha level = .001 df = 4 $X^2_t = 18.465$

Table 4.7.5 above shows that religion has a significant influence on the total number of children a woman bears. The data shows that more Muslims 54.8% (34) gave birth to more than four children, compared to (31.5%)75 Christians who gave birth to more than four children; 17.6% (42) of the Christian respondents gave birth to three children, compared to 14.5% (9) of the Muslim respondents who had three children; 23.1.% (55) of the Christian respondents gave birth to two children and 17.2% (41) gave birth to onechild, compared to 6.5% (4) of the Muslim respondents who gave birth to two

children and 8.1% (5) who gave birth to a child. Since calculated X^2 value (18.616) is greater than the table X^2 test (18.465), it shows a significant relationship between religion and the total number of children a woman bears.

4.8 Discussion of Key Findings

The first research objective was to investigate the practices of high-risk pregnancies in Plateau State and, findings revealed that early pregnancies (before 18 years) and late pregnancies (34 years and above) are still commonly practiced in Plateau state but late pregnancies is less rampant there as compared to other parts of Nigeria. This agrees with NPC and ICF Macro, 2000 which stated that the most noticeable differentials occur with respect to region, with women in the northern regions starting to bear children earlier than those in the Central, Southeast, and Southwest regions. Educated women, particularly those with a higher education, start bearing children later than those with a primary and secondary education (NPC & ICF Macro, 2000). Collected data indicated that, 23.3% (70) respondents married within the age range of 15-19years while 4.3% (13) married at the age of 35years and above. These fall within the classification of high-risk pregnancies. The data on age at first child birth indicated that 13.3% (40) of the surveyed respondents started bearing children within the age range of 15-19 years; which is high risk pregnancy. Data on average age difference between children indicated that 35.7% (11) gave 1year birth spacing; this is also considered as high risk pregnancy. On frequency of child birth, data indicated that 34.7% (20) of the respondents give birth yearly which constitutes high risk pregnancy. The total number of children a woman bore

was examined and this revealed that majority 36.3% (109) had above four children which is also a high risk pregnancy factor.

Although a good number of respondents married between the ages of 15-30 years, it was also observed that for the non-literate, early pregnancy (below the age of 18) is common among them, while for the literate most of them marry at about age 20 and above and get pregnant mostly at age. A woman's age at marriage depends on her socio-economic status, religion and culture and on that basis it was observed that most Muslims especially the less educated marry early and start child bearing before the age of 18, while most educated women marry in their twenties, and also delay child bearing to that age. Findings revealed that child-bearing at an age below 18 is high-risk pregnancy because it gave rise to fistulas like VVF (Vesico Virginal Fistula) and RVF (Rectum Virginal Fistula). This corresponds with the findings of Ghebrehiwot, which revealed that early marriage and childbearing are associated with high parity and therefore higher risk of maternal death (Ghebrehiwot, 2004). Thus, Socio-demographic conditions are correlates of maternal mortality and amongst these, marital status, first pregnancy, and level of education are commonly cited (Garenne, 1997).

Furthermore, it was affirmed by a key informant that there is a lot of risk involved in child bearing at the age of 34 years and above. For example, diseases like Down syndrome and other child deformities are commoner with child bearing at that age. The prevalence of hypertension can also make a pregnancy high-risk and can lead to maternal mortality. Also, a key informant noted that the common birth interval women in Jos North give their children is 1-2 years and a less than 2years birth spacing is a high-risk

factor which constitute stress for the mother and may even lead to maternal mortality. Among the elite i.e. the educated, the couples agree concerning when the wife should become pregnant, but for the less educated the husbands decide, exercising over-bearing influences on their wives. By and large, it is worst when husbands have domineering attitudes towards their spouses. On the frequency of child birth, the data indicated that some of the respondents gave birth yearly and on the total number of children a woman bore; it indicated that majority had four children and above, this implies birth order greater than 4 which is a high-risk factor.

The second objective of the study was to explain the manifestations of maternal mortality in Plateau sate. Data on respondents' knowledge of maternal mortality within the last 5 years indicated that majority of the respondents had knowledge of such. However, from findings on causes of maternal mortality, respondents opined that post-partum and anti-partum haemorrhage (bleeding before and after child birth) was the number one cause of maternal mortality. Also, majority of respondents opined that most women died during labour, and looking at the age category, younger women died most because complications are higher in early pregnancy. The implications of these proximate determinants of pregnancy for maternal health have been illustrated by Graham and Airey (1987), who among others, show that in many settings, the majority of maternal deaths come from the mid reproductive ages where the most women are giving birth despite the youngest and oldest women having the highest age-specific risks per pregnancy.

Furthermore, majority of respondents opined that married women experienced maternal mortality most. However, results from FGD's and IDI's, revealed that every marital

status category had an equal chance of experiencing maternal mortality. In addition, findings revealed that poor women died most during pregnancy and child birth because they may not be able to afford proper medical care. Also, there is a big risk for those who have many children and are still giving birth because the elasticity of the uterus is no longer there, it could result in retained products and ruptured uterus.

The third objective of the study was to determine the socio-cultural factors responsible for high-risk pregnancy in Plateau state. Findings from the IDI's revealed that becoming pregnant at an age below 18 years is high-risk pregnancy, because at that age, the female body is not mature enough to carry pregnancy. In most cases they end up with septicemia or anemia, which could lead to death because the pelvis and the uterus are not yet ready to carry pregnancies. There may be some difficulty in pushing since the bones around the pelvis are not well developed this may lead to obstructed labour. Many of Such girls considering their young age, have little or no knowledge about what it means to be an expecting mother, so they are likely to be the worse in ante-natal clinic attendance. This predisposes them to many problems which increases the chances of maternal mortality. This also like findings on other factors corresponds with NPC and ICF Macro, 1991 which stated that the high incidence of vesico-vaginal fistula (VVF) and recto-vaginal fistula (RVF) in very young girls in the northern part of the country is the result of early marriage and child-birth rate of teen mothers (15-19) years in Nigeria, which is about 152 per 1000 live births (NPC & ICF Macro, 1991).

In consonance with our definitions, majority of the surveyed respondents opined that pregnancies at the age of 34 years and above are high-risk pregnancies stating that at this

age the woman is getting closer to menopause and the hormones concerned with pregnancy naturally reduces in rate of secretion and there is a risk of anxiety, abnormality and sterility. It is called elderly prime for those going in for the first time and grand multi-party for someone that have had children and is still giving birth at that age. They are more prone to polyhydraminios, a medical condition whereby there is excessive hypnotic fluid around the foetus in the amniotic sac which can compromise the life of the baby, and also, they are prone to having still births and malformed children. The issue of congenital malformation of babies (abnormal babies) is commoner with elderly pregnancy, so also having smaller babies and, maternal anaemia. Elderly prime and grand multi-party also makes women more prone to post - partum haemorrhage (bleeding after child birth) which is a common cause of maternal mortality because the placenta may not be able to contract very well. Health problems like, hypertension and diabetes in pregnancy is common at that age because the likelihood of this increases with age. Iron deficiency and polyhedrons due to excessive hypnotic fluid can lead to abnormal lie of the foetus. Other conditions like, code prolapse which can lead to infant and maternal mortality is another problem associated with pregnancy at that age. Additionally, cases of placenta prevue (abnormal positioning of the placenta) and risk of separation of placenta prematurely which in most cases leads to the death of foetus and bleeding in the mother is another common problem.

In addition majority of the surveyed respondents opined that continuous child bearing after having a large number of children are high-risk pregnancies. Findings revealed that continuous child bearing after having a large number of children poses a big risk on the

health of the mother. There is a tendency of having ruptured uterus, because the elasticity of the uterine wall is no longer there, tendency of having abnormal babies, post-partum haemorrhage and maternal mortality. It may lead to socio-economic crises as the woman may not be able to cater for her needs and that of her children. The cervix becomes loosed; the uterus becomes weak as a result of giving birth to many children, which may lead to maternal mortality. If Iron stores which are the back bone of cell formation are depleted, the uterus becomes a bit large, so there is a tendency for unstable lie and code prolapse. Iron deficiency and anemia is higher with multiple pregnancies, so giving birth after having a lot of children has a lot of risks on the health of the mother. Nigerians want large families, and according to the 2003 NDHS, women would like to have at least 6 children; men would like to have almost 9. Married people want even larger families- 7.3 children for married women and 10.6 for married men (NPC & ICF Macro, 2003).

In addition, majority of the surveyed respondents were of the view that poor birth spacing is high-risk pregnancy. Findings revealed that frequent giving birth without proper spacing can lead to maternal mortality because bleeding can set in; the body of the woman may swell as a result she may die because every time a woman gives birth she loses blood and there is also a lot of stress involved, which may lead to death. For example, a woman who is breastfeeding a baby and carrying another pregnancy is causing harm to herself, the fetus in the womb and the baby she is breast feeding are also at risk. There is a tendency for the mother to be malnourished and anemic, because each time she goes into labour she loses blood and if within a short time she is back there again, it puts her at risk. Also, the uterus needs time to get back to its normal position

after the previous birth; it becomes over-burdened if she takes inn again the following year or few months after delivery.

Furthermore, majority of the discussants opined that poverty can lead to high-risk pregnancies, as the woman may not be able to afford proper medical care. Notwithstanding, poor people tend to give birth to more children so that they can assist them, and the females are believed to attract wealth especially when their bride price is paid. This suggests the same conclusion with the findings on Household poverty, allocation of resources, and the control of those resources and its influence on maternal mortality by Borghi et al. 2003; Claeson et al. 2001, which revealed that delivery of infants is not free of charge in many African countries. Indeed, it was never without cost in traditional societies either. Even in countries where delivery is declared to be free in public facilities, the cost of accessing care, both direct and indirect, can be prohibitive, quality notwithstanding. The relationship to poverty is bi-directional; complications of pregnancy were cited as one of the most common causes of household poverty (Borghi, Hanson, Adjei, Ekanmian, Filippi, Ronsmans, Brugha, Browne&Alihonou, 2003; Claeson, Griffin, Johnston, McLachlan, Soucat, Wagstaff, & Yazbeck, 2001).

Majority of the surveyed respondent's opined that desire for a particular sex of child can lead to high-risk pregnancies. Opinions of discussants revealed that many Africans believe a woman must have a male child or else she is regarded as an unfortunate wife, because the man bears the family name and caries it on to the next generation. In most cases, the woman keeps on giving birth until she gets a male child, which may be risky to

her health and ending up with many children. Unfortunately, despite the risks involved in continuous child bearing, the woman would rather bear it all than lose her husband to another woman that hopes to give him a male child.

On another note, majority of the surveyed respondents were of the view that non-attendance of ante-natal clinics during pregnancy period is high-risk in nature, and can lead to maternal mortality. Findings from IDI's revealed that failure to attend ante-natal clinics has caused death for many mothers. Invariably, apart from health education that mothers are taught during ante-natal clinics, they are examined by nurses and doctors who identify some of the risk factors in pregnancy and medical conditions that can affect the mother and such conditions are given quick attention. Also the health status of the women is examined and most women that do not attend antenatal clinics may die out of ignorance, because they may not know that there is a problem until it becomes worse and they are rushed to hospital. The doctors may not know their pregnancy history, in order to give them prompt attention. This may lead to mortality. This is in line with the findings of (Olusola, 2011) who opined that while every woman is at risk of experiencing sudden and unexpected complications during pregnancy, childbirth and following delivery, adequate anti- natal, obstetric and post-natal care can reduce the risk of death considerably. So, there is a big risk of mortality for women who do not attend antenatal clinics at all. Various indicators of maternal status during pregnancy and childbirth may also be predictors of maternal outcomes, including edema, hypertension, and history of previous complications (Garenne, Mbaye, Bah & Correa, 1997).

For women who have been giving birth and on reaching the age of 34 and above, are still bearing children, they believe they are experienced, but for those who are giving birth for the first time at age 34 and above, they are most likely to seek medical care. The health seeking behavior of those who have had a number of children changes overtime because they become more confident in themselves and take medical care for granted and this can lead to maternal mortality. On the frequency of attending ante-natal clinics, majority of the respondents said they attend ante-natal clinics as specified by the doctor. Furthermore, most of the respondents opined that non-practice of family planning can lead to high-risk pregnancies. This is in line with the findings of World Bank (2011) which stated that maternal mortality is the most extreme consequence of poor maternal health. Complications of pregnancy and childbirth are the leading cause of disability and death amongst women between the ages of 15-49. Also, the findings of Ghebrehiwot, 2004 revealed that the causes of maternal mortality are either the result of labor or worsened by labor and delivery.

The fourth objective explained the relationship between practices of high-risk pregnancies and perceptions of maternal mortality in Plateau state. The findings revealed that high-risk pregnancies are a major contributory factor to the high rate of maternal mortality in Plateau State. The cross tabulations and Chi square tests indicates a significant relationship between Religion and Age at marriage, Religion and Age at first child birth, Religion and Birth spacing, Religion and Frequency of child birth and Religion and Total number of children.

The key findings in this research are: every pregnancy has a tendency of becoming high-risk due to medical conditions, obstetric factors and unpredicted outcomes, but early and late pregnancies as well as poor birth spacing and continuous child bearing after many children are key factors that put a woman at risk. Also, social-cultural factors such as non-attendance of antenatal clinics, demand for a particular sex of child, poverty, illiteracy/lack of education, lack of knowledge/ practice of family planning, and poor nutrition can predispose a woman to having high-risk pregnancies and lead to maternal mortality; late pregnancy (34yrs and above) is not quite common in Plateau sate; Caesarean section (CS) can prolong birth spacing which can lead to high-risk pregnancies.

In line with the theoretical framework which explained the problem of study, it is evident that Africans treasure motherhood and attaches a high premium to children to the extent that women have little control over their reproductive and maternal health (Berer, 1994; Paolisso& Leslie, 1995). This has consequently led to high fertility rate within the continent thus endangering the health of mothers and children because the higher the number of births per woman the higher the mortality rate and by extension, child mortality rate (Turmen, 1993), especially in a developing nation like Africa where the health facilities and nutritional requirements are poor. According to Berer (1994), we glorify motherhood on the one hand and still we let half a million die each year worldwide in pregnancy, childbirth and dangerous abortion.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

The first objective of the study was to investigate the practices of high-risk pregnancies in Plateau state and to that end findings revealed that women in Plateau state practice high-risk pregnancies especially through early pregnancies (below 18years), poor birth spacing, and continuous child bearing after having many children, and this puts them at risk of maternal mortality.

The second objective of the study was to explain the manifestations of maternal mortality in Plateau state and as suggested by other previous research findings revealed that younger women tend to die mostly due to complications, and compared to single or divorced women, the married category are more at risk of mortality because there is a tendency of continuous child bearing among them. It is evident that poor women die most because they often cannot afford to pay their health bills.

The third objective which was to determine the extent to which socio-cultural factors are responsible for high-risk pregnancies in Plateau state resulted in findings which revealed that socio-cultural issues like demand for a particular sex of child, especially male child preference can lead to high-risk pregnancies, because a woman may be forced to keep going through the risk of bearing children until she gives birth to a child of the preferred sex, and this may lead to having many children. The prominence of non-attendance of ante-natal clinics poses risk to women, because the lack of medical pregnancy history

makes it challenging in case of emergency. Poor nutrition has an effect on the health of women; they become anemic if they do not eat well especially after giving birth, because they lose a lot of blood which must be replaced by proper feeding. Also, non-practice of family planning can lead to poor birth spacing, which is high-risk pregnancy.

The fourth objective explained the relationship between practices of high-risk pregnancies and perceptions of maternal mortality in Plateau state. Findings revealed that high-risk pregnancies are a major contributory factor to the high rate of maternal mortality in Plateau State.

5.2 Conclusion

Our findings revealed that high-risk pregnancies were major contributory factors to the high-rate of maternal mortality in Plateau state. Every pregnancy was found to be associated with high-risk due to obstetric factors, medical conditions and unpredicted outcomes. Social factors like non-attendance of antenatal clinics, son preference, poverty, caesarean section (CS), illiteracy/lack of education, lack of knowledge/ practice of family planning, and poor nutrition predispose respondents to having high-risk pregnancies. This implies that socio-cultural factors are capable of causing high-risk pregnancies and maternal mortality. Also, early pregnancies were more common as compared to late pregnancies in Plateau State. This suggests that most women marry early and give birth before age 34. Very young mothers experienced difficult pregnancies and delivery because of their physical immaturity. Older women also experienced age-related problems during pregnancy and delivery; poor birth spacing can lead to anemia among other morbidities, which can lead to maternal mortality. High-risk pregnancies are

therefore one of the major causes of maternal mortality in Plateau State, however since late pregnancy (34 years and above) is not commonly practiced it is evident that early pregnancy is most practiced. This is the thesis of this research. Abraham Lilienfeld (1980), a prominent epidemiologist, very appropriately remarked, "the better we know about the root cause of a problem, the better we are in a position to address the problem," and in his book, Foundations of Epidemiology, cites Benjamin Disraeli's, "The more extensive a man's knowledge of what has been done, the greater will be his power of knowing what to do".

5.3 Recommendations

1. Women within child bearing age should be educated by government of the country, medical personnel's, sociologists and social workers on reproductive health issues. Educating women improves their health and that of their children. Some studies have shown for example, that high literacy rates among women are more important for reducing the number of infant and maternal deaths, than having a large number of doctors. Why? Because the more education a woman has, the more likely she is to make the right decisions concerning her health and that of her children and also take some measures to prevent diseases (such as following proper hygiene and using mosquito nets) and avoid harmful traditional practices.

2. Females should be advised by medical professionals, sociologists and social workers to delay marriage and child bearing until they are prepared for it physically, emotionally and financially.

3. Men should be educated by medical personnel's, sociologists and social workers on how to help their wife's avoid high-risk pregnancies, and on the need to appreciate both female and male children and treat them equally; this will go a long way in reducing socio-cultural factors like male child preference and high-risk pregnancies such as poor birth spacing and continuous child bearing after having a large number of children.

4. Women within reproductive ages should be educated during their ante-natal clinics on how to use family planning's to space their pregnancies and limit the total number of children they will bear.

5. Most maternal deaths are avoidable, if the health-care solutions to prevent or manage complications are well known. Government should ensure that all women needs of access to antenatal care in pregnancy, skilled care during childbirth, and care and support in the weeks after childbirth are met. It is particularly important that all births are attended by skilled health professionals, as timely management and treatment can make the difference between life and death.

6. Severe bleeding after birth can kill a healthy woman within two hours if she is unattended. Injecting oxytocin immediately after childbirth effectively reduces the risk of bleeding; therefore every hospital should ensure that they never run out of oxytocin injection.

7. Infection after childbirth can be eliminated if good hygiene is practiced and if early signs of infection are recognized and treated on time. Therefore, women should be educated on the need for proper hygiene and also the need for proper ante-natal care.

8. Pre-eclampsia should be detected and appropriately managed before the onset of convulsions (eclampsia) and other life-threatening complications. Administering drugs such as magnesium sulfate for pre-eclampsia can lower a woman's risk of developing eclampsia.

9. If a woman has a medical condition, it is important to consult a doctor before she decides to become pregnant. The doctor may run tests, adjust medications, or advise her of precautions she needs to take to optimize her health and that of her baby.

10. To avoid maternal deaths, it is also vital to prevent unwanted and too-early pregnancies. All women need access to family planning. In addition, women should be educated on the risk involved in continuous child bearing after having a large number of children and poor birth spacing. This can be done during their ante-natal clinics.

11. To improve maternal health, barriers that limit access to quality maternal health services must be identified and addressed at all levels of the health system. There should be birth preparedness on the path of the women and medical personnel's. Concrete and detailed preparation should be made before delivery to avoid some unpredicted outcomes. There is also need for emergency preparedness by medical personnel's and developments by government to handle such high-risk cases. Health facilities should be equipped to provide emergency services.

12. Women should be educated by medical personnel's, sociologists and social workers on danger signs of pregnancy. Service providers should be very responsive in handling high-risk cases so as to avoid maternal mortality.

13. There is indeed currently a window of opportunity for Nigeria to join the rest of the world in the effort to meet the target of MDG 5. Efforts to ensure that this opportunity is not missed must include a multipronged approach to improve women's health and reduce maternal mortality in the country. Although appropriate policies are a step in the right direction, further actions must be taken to implement those policies and to ensure that all the disparate program efforts to increase safe motherhood are integrated and monitored at the central level. A major impediment to improving policies and programs to reduce maternal mortality in Nigeria is the lack of continuity in the government. Every new policy seems to lapse with the exit of the commissioner, the governor or the minister who was in power or who initiated the program. It is essential to put in place mechanisms that will ensure continuity of health policies at the federal, state and local government levels.

14. Despite much lofty policy formulation, the serious lack of commitment to implementing these proposals can be seen in the gross under budgeting of the health sector over the years. It is thanks only to the efforts and funding of NGOs and international donors that maternal mortality in Nigeria has not deteriorated even further. It is only through their efforts that awareness of the magnitude of the problem has been maintained and kept in constant focus.

15. The number of skilled birth attendants in Nigeria is certainly not sufficient, and the situation is aggravated by the fact that those who are available are concentrated in urban centers, where only about 40% of the population lives. Better results could be achieved through better distribution of this manpower, by providing incentives to promote work in rural areas. The Nigerian government must be willing to commit adequate resources,

particularly financial resources, to meet the needs of the health system. This system must be significantly overhauled to promote proper coordination among the three levels of government—federal, state and local—both to reduce bureaucratic bottlenecks and wastages of resources and to ensure availability of the trained providers, up-to-date equipment and supplies needed to provide appropriate contraceptive, prenatal and obstetric services.

16. Improved capacity and resources will be essential to reducing high-risk and unintended pregnancies and making pregnancy and delivery safer. The lack of credible data on maternal and pre-natal outcomes is a serious barrier to effective advocacy and programming. Therefore, crucial ancillary efforts needed to support Nigeria's safe motherhood services include the establishment of a system to register births and maternal deaths, and a national level effort to investigate the causes of all maternal deaths in the country.

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APPENDIX I

QUESTIONNAIRE

I am a Masters student in the Department of Sociology, Faculty of Social Sciences, Ahmadu Bello University, Zaria, conducting a research on the topic: High-Risk Pregnancies and Perceptions of Maternal Mortality among Women in Plateau State of Nigeria. Please, kindly answer the following questions. Your provided responses will be kept strictly confidential.

Instruction: Please tick (√) as appropriate and provide your answers where required.

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. What is your marital status?

A. Married ( ) B. Divorced ( ) C. Separated ( ) D. Widowed ( )

2. What is your religion?

A. Christianity ( ) B. Islam ( ) C. Others (specify) ----------

3. Which of these age category do you belong?

A. 15-19yrs ( ) B. 20-24 yrs ( ) C. 25-29yrs ( ) D. 30-34yrs ( )

E. 35-39yrs ( ) F.40-44 yrs ( ) G. 45-49yrs ( )

4. What is your occupation?

A. House wife ( ) B. Civil servant ( ) C. Unemployed ( )D. Farmer ( )

E. Trader ( ) F. Self-employed ( ) G. Public Servant ( ) H. Nurse ( )

I. Doctor ( ) K. Health Worker ( )

5. What is your educational attainment?

A. Primary ( ) B. Secondary ( ) C. Tertiary ( ) D. Not Educated ( )

E. Others (specify) ----------

SECTION B: PRACTICE OF HIGH-RISK PREGNANCIES

6. At what age did you get married?

A. 15-19yrs ( ) B. 20-24 yrs ( ) C. 25-29yrs ( ) D. 30-34yrs ( )

E. 35-39yrs ( ) F.40-44yrs ( ) G. 45-49yrs ( )

7. At what age did you give birth to your first child?

A. 15-19yrs ( ) B. 20-24 yrs ( ) C. 25-29yrs ( ) D. 30-34yrs ( )

E. 35-39yrs ( ) F.40-44yrs ( ) G. 45-49yrs ( )

8. What is the average age difference between your children?

A. Months ( ) B. 1 yr ( ) C. 2 yrs ( ) D. 3 yrs ( ) E. 4 yrs and above ( )

9. How often do you give birth?

A. Yearly ( ) B. Every 2 years ( ) C. More than every 2 years ( )

10. What is the total number of your children including children in previous marriages if any?

A. 1 ( ) B. 2 ( ) C. 3 ( ) D. 4 & above ( )

SECTION C: MANIFESTATIONS OF MATERNAL MORTALITY

11. Do you know anybody that died as result of pregnancy or child birth within the last 5 years?

A. Yes ( ) B. No ( )

12.If yes, what was the cause of maternal death?.....

.....

13. What was the period of maternal death?

A. During pregnancy ( ) B. During labour ( )

C. During pueperium (after child birth) ( )

14. Which of these marital status category experience maternal mortality most?

A. Single ( ) B. Married ( ) C. Divorced ( ) D. All of the above ( )

15. Which of these age category of women experience maternal death most?

A. Young women ( ) B. Middle aged women ( ) C. Older women ( )

D. All of the above ( )

SECTION D: SOCIO-CULTURAL DETERMINANTS OF HIGH-RISK PREGNANCIES

16. Do you think becoming pregnant at an age below 18 is high-risk pregnancy?

A. Yes ( ) B. No ( )

17. Do you think pregnancy at the age of 34 and above is high-risk pregnancy?

A. Yes ( ) B. No ( )

18. Do you think continuous pregnancy after having a large number of children is high-risk pregnancy?

A. Yes ( ) B. No ( )

19. Do you think poor birth spacing can lead to high-risk pregnancy?

A. Yes ( ) B. No ( )

20. Do you think poverty can lead to high-risk pregnancy?

A. Yes ( ) B. No ( )

21. Do you think the desire for a particular sex of child can lead to high-risk pregnancy?

A. Yes ( ) B. No ( )

22. Do you think non- attendance of ante-natal clinics during pregnancy period can lead to high-risk pregnancy?

A. Yes ( ) B. No ( )

23. How often do you attend ante-natal clinics?

A. Weekly ( ) B. Monthly ( ) C.As specified by the Doctor ( )

D. If my husband permits me ( ). E.I do not attend ( )

24. Do you have to seek for permission from your husband before going to the hospital when pregnant?

A. Yes ( ) B. No ( )

25. Do you have knowledge of any family planning method?

A. Yes ( ) B. No ( )

26. Do you think non-practice of family planning method can lead to high-risk pregnancy?

A. Yes ( ) B. No ( )

27. Do you have a previous history of C/S (Cesarean Section)?

A. Yes ( ) B. No ( )

28. If yes, how many?

A. 1 ( ) B. 2 ( ) C. 3 ( )

SECTION E: RELATIONSHIP BETWEEN PRACTICES OF HIGH-RISK PREGNANCIES AND KNOWLEDGEOF MATERNAL MORTALITY

29. Do you think becoming pregnant at an age below 18 can lead to maternal mortality?

A. Yes ( ) B. No ( )

30. Do you think pregnancy at the age of 34 and above can lead to maternal mortality?

A. Yes ( ) B. No ( )

31. Do you think continuous pregnancy after having a large number of children can lead to maternal mortality?

A. Yes ( ) B. No ( )

32. Do you think poor birth spacing of children can lead to maternal mortality?

A. Yes ( ) B. No ( )

33. What was your mode of last delivery?

A. Spontaneous Virginal Delivery (Normal Delivery) ( ) B. Cesarean Section (CS) ( )

THANK YOU.

APPENDIX II

FOCUS GROUP DISCUSSION GUIDE ON:

HIGH-RISK PREGNANCIES AND PERCEPTIONS OF MATERNAL MORTALITY AMONG WOMEN IN PLATEAU STATE OF NIGERIA

QUESTIONS

1. Practices of high-risk pregnancies in Plateau State.

Probe for:

a. Age at marriage of women in the community
b. Common birth interval women give their children in the community
c. Common numbers of children women give birth to in the community
d. Average age difference of birth between children in the community
e. Decision of when a woman should get pregnant in the community
f. Decisions of the number of children a woman should have in the community

2. Manifestations of maternal mortality in Plateau State.

Probe for:

a. Knowledge of anybody that died while pregnant within the last five years in the community
b. Cause of maternal death of someone they knew
c. Knowledge of anybody that died during child birth in the community
d. History of maternal death in the community

e. Knowledge of anybody that died few days or weeks after the birth of a child in the community
f. Category of women that dies most during pregnancy and child birth in the community (older women or younger women, single women or married women)
g. Class of women that die most during pregnancy and child birth in the community (rich women or poor women)

3. Socio-cultural determinants of high-risk pregnancies in of Plateau State.

Probe for:

a. Child bearing at an early age (below 18) and high-risk pregnancy
b. Child bearing at a late age (above 34) and high-risk pregnancy
c. Continuous child bearing after having a large number of children and high-risk pregnancy
d. Poor child spacing and high-risk pregnancy
e. Non-attendance of ante-natal clinics during pregnancy period and high-risk pregnancy
f. Demand for a specific sex of child and high-risk pregnancy
g. Lack of knowledge of family planning and high-risk pregnancy

4. Relationship between high-risk pregnancies and maternal mortality in Plateau State.

Probe for:

a. Child bearing at an early age (below 18) and maternal mortality
b. Child bearing at late age (above 34) and maternal mortality

c. Continuous child bearing after having a large number of children and maternal mortality

d. Poor child spacing and maternal mortality

THANK YOU.

APPEDIX III

IN-DEPTH INTERVIEW GUIDE ON:

HIGH-RISK PREGNANCIES AND PERCEPTIONS OF MATERNAL MORTALITY AMONG WOMEN IN PLATEAU STATE OF NIGERIA

QUESTIONS

1. Practice of high-risk pregnancies in Plateau State.

Probe for:

a. Age at first marriage
b. Age at first child birth
c. Decisions on when to get pregnant
d. Average age difference between children
e. Number of children

2. Manifestations of maternal mortality in Plateau State.

Probe for:

a. Knowledge of someone that died while pregnant within the last 5 years
b. Cause of maternal death of the person
c. Period (before, during or after delivery)
d. Category of women that dies more during pregnancy and child birth (older women or younger women, single women or married women)

e. Class of women that die more during pregnancy and child birth (rich women or poor women)

3. Socio-cultural determinants of high-risk pregnancies in Plateau State.

Probe for:

a. Child bearing at an early age (below 18) and high-risk pregnancy
b. Child bearing at a late age (above 34) and high-risk pregnancy
c. Continuous child bearing after having a large number of children and high-risk pregnancy
d. Poor child spacing and high-risk pregnancy
e. Non-attendance of ante-natal clinics during your pregnancy period and high-risk pregnancy
f. Demand for a specific sex of child and high-risk pregnancy
g. Lack of knowledge of family planning and high-risk pregnancy

4. Relationship between high-risk pregnancies and maternal mortality in Plateau State.

Probe for:

a. Child bearing at an early age (below 18) and maternal mortality
b. Child bearing at a late age (above 34) and maternal mortality
c. Continuous child bearing after having a large number of children and maternal mortality
d. Poor child spacing and maternal mortality

THANK YOU.