RISK FACTORS ASSOCIATED WITH PREGNANCY AND MATERNAL MORTALITY AMONG GWANDARA WOMEN IN KOKONA LOCAL GOVERNMENT AREA OF NASARAWA STATE, NIGERIA

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Abstract
In emerging societies, large percentage of women lose their lives as a result of pregnancy related complications due to early marriage, non-attendance of antenatal clinic, non-utilization of maternal healthcare services among other factors. This paper examines risk factors associated with pregnancy and maternal mortality among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria. A social survey design was adopted for this paper. A sample of 262 respondents was drawn, using multi-stage sampling techniques involving electoral wards, towns/villages, main streets, houses, households and individuals. Primary data were utilized in the study. The primary data were generated through the use of questionnaires and in-depth interview (IDI). The questionnaires were carefully analysed quantitatively using tables' frequency and percentage while data generated through in-depth interview (IDI) were analysed to complement the quantitative method using content analysis. Findings from the study revealed that existing health conditions is the major risk factor associated with pregnancy and early marriage as the main determinant of risky pregnancies. The findings equally show that maternal mortality is the effect of risky pregnancy. The paper recommends the need for more awareness on importance of utilizing maternal health care services during pregnancy hence government should organize monthly seminars, lectures and symposiums aimed at encouraging pregnant women to utilized maternal health care services and there is the need for improved educational opportunities for women to be encouraged to dispel ignorance thereby discouraging early marriage. Also, women should be supported and encouraged to start antenatal care early in pregnancy to allow for sufficient time to identify and treat problems thereby preventing maternal mortality
Keywords: Risk Factors, Pregnancy, Maternal Mortality, Gwandara Women.

Introduction

In the world today, maternal mortality has been on the increase in modern time with unfavourable effects on the health care system. The current rate of maternal deaths in Nigeria indicates that Nigeria is far from ending the problem of maternal mortality. Maternal health constitutes delicate aspects of every nation's health that requires adequate attention. A society is known and measured by the way the most vulnerable segment of its population is treated, in this case, women and infants or children. With only two per cent of the world's population, Nigeria contributes ten per cent of the world's maternal death. Each year as many as 60,000 Nigerian women die due to pregnancy-related complications. Universally only India has a larger number of maternal deaths from pregnancy-related complications as many as 136, 000 annually. Maternal death is one of the world's health concerns hence the United Nations has called for "Safe Motherhood". Despite such early awareness, very little improvement is seen in maternal health care delivery in most developing countries in Africa as well as Nigeria (*World Health Organisation Factsheets, 2021*).

Mortality associated with pregnancy and delivery complications is highest among poor and less

privileged women in Nigeria (Olusola, 2011). Kassebaum, Lopez, Murray, & Lozano(2014)noted that the maternal mortality ratio in Nigeria is estimated to be 545 deaths per 100,000 live births (Ogu & Ephrain, 2018).Large number of Nigerian women dies as a result of complications associated with pregnancy or child birth, as about one woman dies every three minutes due to pregnancy and child birth related issues. 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. 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, Nigeria is ranked eighth in Sub-Saharan Africa behind, Angola, Chad, Liberia, Niger, Rwanda, Sierra Leone and Somalia as shown in (Macro & Commission, 2009).

Maternal mortality has been on the increase in recent times with detrimental effects on the socio-economic development of many nations. Approximately 830 women die globally every day from preventable causes related to pregnancy and childbirth. More worrisome is the fact that 99% of all maternal deaths occur in developing countries. It mainly occurs in resource-limited settings from preventable causes and affects women of childbearing age (15-49 years of age) with poorly met health needs. Maternal mortality is unevenly spread geographically with stark differences between developed and developing countries. Developing nations bear the brunt (99%) of maternal deaths, with over 50% occurring in sub-Saharan Africa. From 1990 to 2015, the global maternal mortality ratio declined by 44 per cent; from 385 deaths to 216 deaths per 100,000 live births. This translates into an average annual reduction rate of 2.3 per cent. While this looks impressive, it is less than half of the 5.5 per cent annual rate required to achieve the three-quarters reduction in maternal mortality target for 2015 in the rested Millennium Development Goal five and nowhere close to the goal three (3) of the Sustainable Development Goals targeted at reducing the global maternal mortality ratio to less than 70 per 100,000 live births (UNICEF, 2017).

Almost all maternal deaths can be prevented, as evidenced by the vast disparities found between the richest and poorest countries. The lifetime risk of maternal death in high-income countries is 1 in 3,300, compared to 1 in 41 in low-income countries. The number of women and girls in the world who die each year from complications of pregnancy and childbirth declined from 532,000 in 1990 to 303,000 in 2015 (APHRC, 2017). According to current world statistics, over 800 women die each day from complications in pregnancy and childbirth; and for every woman who dies, approximately 20 others suffer serious injuries, infections or disabilities (World Health Organization Factsheets, 2021).

World Health Organization (2021) reports that, one out of every 22 women in Africa dies from pregnancy-related complications (Ezeh, Agho, Dibley, Hall, & Page, 2014; & UNICEF, 2014), For every woman who dies, about 50 to 100 other women suffer from an illness or disability due to childbearing. This implies that every 8 years, more than 150,000 African women die and millions of women suffer a serious illness, because of pregnancy and child birth complications. Based on the foregoing, the study examines the risk factors associated with pregnancy and maternal mortality among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria.

Statement of the Problem

Maternal health care services are a contemporary issue with vast universal implication on the continued existence of human society. The health of women during pregnancy and post-natal is essential to ensure adequate well-being of the home and family especially in matters relating to childbirth, child care, breastfeeding, home care etc. In Nigeria the number of maternal deaths has

remained high, with maternal mortality ratio of 814 per 100,000 live births despite the administration of wide range of maternal health service strategies that include free antenatal care, training of skilled birth attendants just to mention a few as well as availability of resources, the situation of maternal health remains one of the worst in Africa as evidenced by prevailing maternal mortality ratio. Nigeria contributes greater than 10% of maternal deaths globally, this prevailing issue in Nigeria is strongly linked to the weak implementation of maternal health policies and services as well as the presence of a number of cultural and socio-economic factors including lack of funds, lack of birth preparedness (Oladineji, Pius, Adekunle,Temi, Abiodun, Peter, & Babatunde, 2013).

The maternal health care system in Nigeria is one which is characterised by the presence of factors such as traditional and faith based and orthodox health providers. The present of factors such as traditional, faith based health provider linked with the socio-economic and deleterious cultural determinants of maternal health can be implicated as a plausible reason for the seemingly weak health system. This implication is evident in the number of pregnancies being managed by these non-orthodox methods their inability to recognize danger signs in pregnancy and ensure high maternal death rate (Oladineji, *et al*2013).

Apart from the problems posed by these factors, maternal health care services are also plagued with problems of poverty, illiteracy lack of knowledge, delay in reaching health facilities either due to inaccessibility, poor roads, poor communication networks, poor transportation system or long distance to be covered as well as delays in receiving appropriate care at health facilities which is characterised by absence of quality maternal health services, inadequacy of skilled birth attendants, inadequate medical supplies during labour, delivery and after the delivery, there is thus the need to focus on prevention of maternal deaths in Nigeria by tackling these issues affecting the ability of pregnant women to access timely and quality maternal health service.

In spite of policies, declarations, conferences and other efforts aimed at reducing the scourge of maternal deaths across the globe, only modest gains in maternal mortality reduction appear to have been achieved in many countries in the past 20 years (Shah & Say, 2007) countries in Africa may have actually lost ground while many developing countries have fallen far short of the standard set by the world health organization's initiatives on safe motherhood. In Nigeria, the federal ministry of health had set year 2006 as the target year that maternal mortality would have reduced by 50%. However not only were these targets not achieved but also the maternal health situation in Nigeria is now much worse than in previous years (Ujah, *et-al* 2005). Past efforts to reduce maternal mortality ratio in Nigeria were concentrated on making direct improvements to the health system. These efforts have not involved enough resources to successfully reduce maternal mortality in the country. In view of these lacks of success, Okonofua (2007) noted that the high maternal mortality in the country will have to be tackled by generating sufficient political priority to make governments deploy enough resources to successfully reduce maternal mortality in Nigeria.

Several studies in the Nigeria (Ogu & Ephrain, 2018; Oladineji, Pius, Adekunle, Temi, Abiodun, Peter, & Babatunde, 2013; Ujah, Aisien Mutihir, Vanderagt, Glew, &Uguru, 2005; Okeke, Oluwuo & Azil, 2016; Nwokocha, 2012) have been undertaken on risk factors associated with pregnancy and maternal mortality, but none of these have examined the risk factors associated with pregnancy and maternal mortality among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria. This study, therefore, intends to fill these gaps.

Research Questions

The paper attempts to answer the following research questions:

i. What are the risk factors associated with pregnancy among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria?
ii. What are the determinants of risky pregnancies among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria?
iii. What are the effects of risky pregnancy and maternal mortality among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria?

Conceptual and Theoretical Review

Risky Pregnancy

Like other societal issues, scholars or intellectuals have variegated views on risky pregnancy. In other words there is no consensus or generally accepted definition of the concept. But this study will dwell on those definitions that are widely accepted. Risky pregnancy refers to any pregnancy associated with an increased risk for adverse outcomes. The incidence of risky pregnancies varies from society to society. Risky pregnancies are associated with a higher incidence of low birth weight babies (LBW), a high pre-natal mortality (PNM), and an increased pregnancy-related maternal morbidity and mortality. The maternal and prenatal mortality reflects the quality of health of a community. Prenatal mortality is the best indicator to measure the quality of maternal and child health (MCH) cares in a community. Risky pregnancy within the context of the paper is any pregnancy accompanying with an increased threat for adverse results.

Maternal Mortality

It is rather difficult to point out a single holistic definition of maternal mortality despite its significance and wide usage in the field of demographic and population studies. This has left scholars, researchers, intellectuals and authors to defining maternal mortality from different perspectives and perceptions. World Health Organization refers to maternal mortality as the death of 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 and also maternal death 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, 2014).

Similarly, Ibrahim (2016) asserted that maternal mortality refers to any loss of a woman's life resulting from pregnancy complication or death within 42 days after childbirth, notwithstanding the period or site of the pregnancy, emanating from issues that are linked or escalated by the management of the pregnancy but not from accident or incidental factors (Ibrahim, 2016). Maternal mortality can be distinct as either direct or indirect. Direct maternal mortality result from complications and difficulties of the pregnancy (pregnancy, labour and post-delivery), from interventions, omissions, incorrect treatment, or from a chain of measures ascending from any of the above. Indirect maternal mortality is due to hitherto the existing diseases or diseases that advance during pregnancy, and not as a result of direct obstetric causes (Oxaal & Baden, 1996).

Within the context of this paper, maternal mortality denotes the death of 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 and also maternal death 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.

Theoretical Framework

This paper is positioned within the Health Belief Model. The health belief model (H B M) was developed as an attempt to explain the decision of an individual with respect to preventive health care (French, Kurczynski, Weaver & Pituch, 1992).This model was developed for the first time in the 1950's to evaluate why screening of tuberculosis was not successful in the USA (Hayden, 2009). Personal beliefs influence on a person's health choices and behaviour. Health Belief Model explains that health behaviour is determined by an individual's beliefs and perception about particular health problems and illness, and available resources address these problems (Calnan, 1984, Champion & Skinner, 2008). In this study, HBM was adopted in order to understand women's thoughts, behaviour and decision with regard to providing health care related to risk factors in pregnancy and maternal mortality among Gwandara women in Kokona Local Government Area of Nasarawa State-Nigeria.

Health Belief Model mainly builds on the following four components which make theoretical constructs for the exploration of the perception of women in this study. These components together assess the women's understanding of risks and explain decisions of health behaviour (Champion &Skinner, 2008, Hayden, 2009).

Perceived Susceptibility: Perceived susceptibility refers to the belief about the livelihood of getting a disease or risk of being exposed to threat for a particular person in particular circumstances. This means how much risk a person perceives he/she has (Hayden, 2009). Recognizing a danger sign brings about the realization of needs for care. Women may be aware of the risk but it does not guarantee that they will act for biomedical care. It is essential to see to what extent women see the risks how they confront the problems related to pregnancy and obstetric complications. The greater the risks are perceived as susceptible, the greater livelihood that they will seek for care (Hayden, 2009).

Perceived Threat/ Seriousness: If an individual does not see a health problem as risky or threatening, there is no stimulus to act. Perceived feeling about the seriousness of risk includes evaluation of both the medical consequences including pain, disability, death and social consequences such as impact on work, family and social relations (Hayden, 2009). Perceived threat explains a woman's belief about the seriousness, and how severe it can harm her. To make a decision on whether to seek medical care or not one must believe in both susceptibility and severity. So health choices can be weighed. Pregnancy is a risk and there is a 10-15 percent chance of unexpected complications. (Van den Broek & Falconer, 2011).

Perceived Benefits: A person's belief of giving importance to certain health actions decreases the risk of potential complication. A person's tends to make a decision and adopt a healthy practice, when he/she believes that the decision taking would benefit them (Champion & Skinner 2008, Hayden, 2009). When a person perceives a threat, whether such perceptions lead to behavioural change will be affected by the person's belief with respect to perceived benefits of the various measures available to reduce the threat (Hayden, 2009).

Perceived Barriers: These explain that decisions on health action are influenced by perceived barriers to change. When an individual evaluates an obstacle on his/her way of determining health behaviour, decision may not be made. Perceived barriers play a significant role in behavioural outcome (Hayden, 2009). Fear of pain and embarrassment are also common issues women perceive as barriers in seeking for health care. Perception of women is different in diverse ethnic groups and so is women's decision making power within their household (Suwal, 2008).

The Health Belief Model (HBM) has been adopted in the paper for the following reasons:

i. Women perception about the risk of pregnancy will inform health care-seeking behaviour or to seek for antenatal care.
ii. Beliefs regarding therapeutic/healing effectiveness of health care options will inform health care seeking behaviours.
iii. Beliefs regarding barriers to some health care options such as higher cost of care, availability and distance to care facilities will inform health care seeking behaviour.
iv. Previous experience with different care options and observation of treatment outcomes of other women from different care options will inform health care seeking behaviour for current and future complication (cues to action).

Methodology

Gwandara is the major tribe with large number of women of child-bearing age in Kokona Local Government Area of Nasarawa State, Nigeria. The paper adopted social survey design. The social survey entails a research design that allows the collection of data from a fraction of a study population, which can be seen as truly representing the larger population using the questionnaire and in-depth interview. The population for this study consists of women of childbearing age of 15-49 years from Gwandara ethnic group who registered for antenatal care services in various electoral wards in Kokona Local Government Area of Nasarawa State-Nigeria between the periods of November 2021 to January 2022. The total of one thousand six hundred and seventy two (1672) women of childbearing age was registered across the electoral wards in the study area (Primary Health Care, Kokona Local Government Area, 2022). The sample size was determined using Krejcie Morgan's formula (1970) which is given as:

Data Analysis and Results

Table 1: Response on the risk factors Associated with Pregnancy

Response	Frequency	Percentage (%)
Mother's age	51	19.5
Existing health conditions (High Blood Pressure, Diabetes, Kidney disease, Autoimmune disease, Thyroid disease, Obesity, HIV/AIDS, Depression and infections)	123	46.9
Condition of Pregnancy (Multiple gestational, Gestational diabetes, Preeclampsia and Eclampsia, Previous birth defects)	72	27.5
Others	16	6.1
Total	**262**	**100**

Source: Field Survey, 2022

Table 1 indicates the responses on the risk factors associated with pregnancy in the sampled population of the study. Data from the study revealed that majority of the respondents accepted that existing health conditions (High blood pressure, diabetes, kidney disease, autoimmune disease, thyroid disease, obesity, HIV/AIDS, depression and infections) are the common risk factors associated with pregnancy in the study with an affirmation of 46.9 percent of the respondents. This clearly shows that existing health condition is the main risk factors associated with pregnancy in the study area.

In the in-depth interview (IDI) conducted, there was clear consensus that existing health conditions such as high blood pressure, diabetes, kidney disease, autoimmune disease, thyroid disease, obesity, HIV/AIDS, depression and infections are the risk factors associated with pregnancy. An overwhelming proportion of the interviewees' stated that these risk factors are mostly experienced by pregnant women in the study population. Two interviewees, a gynaecologist and a mentor mother captured the general position of the interviewees' as reported below.

A gynaecologist reported that:
The common risk factors associated with pregnancy in this area is the existing health conditions such as high blood pressure, diabetes, kidney disease, autoimmune disease, thyroid disease, obesity, HIV/AIDS, depression and infections. These are doing more harm on the pregnant women and a lot of complications are as a result of these risk factors

This point was further buttressed through a statement made by a mentor mother who said:
Pregnant women in this village suffer from serious risk factors during pregnancy. This has serious implication on the health of the pregnant women and the unborn child. Mostly, the risk factors are existing health conditions like depression, diabetes, high blood pressure and others.

Table 2: Responses on the determinants of risky pregnancies

Response	Frequency	Percentage (%)
Early marriage	73	27.9
Poverty	38	14.5
Socio-cultural and religious factors	57	21.8
Non-use of contraceptives	39	14.9
Maternal age	22	8.4
Gender power relation	09	3.4
Inadequate comprehensive sexuality education	18	6.8
Others	06	2.3
Total	**262**	**100**

Source: Field Survey, 2022

Table 2 shows the responses on the determinants of risky pregnancies in the study area. The table illustrates that early marriage is a major determinant of risky pregnancies. This was established by 27.9 percent of the total respondents in the sampled population of the study. This denotes that early marriage is a key determinant of risky pregnancies in the area of the study.

During the in-depth interview (IDI) a nurse pointed out that early marriage is a principal determinant of risky pregnancies. Even though, there are other determinants like poverty, maternal age, socio-cultural and religious influence, non-use of contraceptives and inadequate comprehensive sexuality education. The participant explained as thus:
One prime determinant of risky pregnancies in Kokona Local Government Area of Nasarawa State is the issue of early marriage. In this area, many young girls are married before the age of 18 years. Within this age bracket their body system is not well developed. Having pregnancy will come with a lot of complications. This is a serious problem and a major determinant of risky pregnancies.

Table 3: Responses on the effect of risky Pregnancy and Maternal Mortality

Response	Frequency	Percentage (%)
Maternal mortality	145	55.3
Health risks e.g. obstetric fistula	62	23.7
Still born	17	6.5
Premature birth	11	4.2
Complication at birth	06	2.3
Others	21	8.0
Total	**262**	**100**

Source: Field Survey, 2022

Table 3 is a presentation of the effect of risky pregnancy and maternal mortality in the sampled population of the study. Data from the study established that maternal mortality is a strong and leading effect of risky pregnancy among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria. This was affirmed by larger percent of the respondents with 55.3 percent of the response in the area of study.

This attracted strong support from interviewees during an in-depth interview (IDI) conducted in the sampled areas. The overwhelming proportion of the interviewees accepted with one voice that maternal mortality is a major effect of risky pregnancy. An interviewee, a midwife netted the wide-ranging position of the interviewees' as thus:
Not only in Kokona Local Government Area or Nasarawa State but Nigeria in general, maternal mortality has negative effect on pregnant women. Larger proportion of pregnant women is dying on daily basis as a result of complications during pregnancy. Maternal mortality has been on the upsurge in contemporary time with disparaging effects on the pregnant women.

Discussions of Findings

Regarding the risk factors associated with pregnancy in among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria, study findings revealed that the existing health conditions such as high blood pressure, diabetes, kidney disease, autoimmune disease, thyroid disease, obesity, HIV/AIDS, depression and infections are the common risk factors associated with pregnancy in the area of study. This was affirmed by Achama, Emmanuel and Moses (2015) that the significant factors associated with pregnancy is the existing health conditions of the pregnant woman. These factors include high blood pressure, diabetes, kidney disease, autoimmune disease, thyroid disease, obesity, HIV/AIDS, depression and infections. Every pregnancy faces high-risk and low-risk during the childbearing period.

On the determinants of risky pregnancies in among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria, study findings unraveled that early marriage is a prime determinant of risky pregnancies in the study area. This was established by Ezeh, *et al* (2014) that age of pregnancy is considered high-risk when there are potential complications that could affect the mother, the baby, or both. Some of the risk factors associated with 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. 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 -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.

Concerning the effects of risky pregnancy and maternal mortality among Gwandara women in Kokona Local Government Area of Nasarawa State, Nigeria, the study findings discovered that maternal mortality is the main effect of risky pregnancy in the sampled population of the study. This was supported by World Bank (2011), maternal mortality is the most extreme consequence of risky pregnancy. 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 new-borns die in the first week of life every year, mostly due to problems during pregnancy and childbirth.

Conclusion and Recommendations

The rising challenges that come with lack of utilisation of maternal health care services by women pose a great threat to the future generation, this can be attributed to belief model of such an individual or awareness on high risk of pregnancy and maternal mortality, the health benefit for antenatal care utilization, for Nigeria to reduce its maternal mortality and infant mortality there is an urgent needs for more expectant mothers to learned how to utilized the antenatal care service. Nigeria today is saddle with the high rate of risky pregnancies and maternal mortality. This may be due to women not utilising antenatal care despite the fact that antenatal care has been given top priority by government and Non-Governmental Organization (NGOs) and stakeholders. This paper recommends that:

i. There should be more awareness on importance of utilizing maternal health care services during pregnancy since most of the pregnant women are still ignorant of services. Therefore, government should organise monthly seminars, lectures and symposiums aimed at encouraging pregnant women to utilise maternal health care services, where they will be taught on all the activities involved during pregnancy.
ii. There is the need for improving educational opportunities for women to dispel ignorance, thereby empowering them to make independent decisions. This would discourage early marriage which is the major determinant of risky pregnancy
iii. Women should be supported and encouraged to start antenatal care early in pregnancy to allow for sufficient time to identify and treat the problems so that the effect of risky pregnancy and maternal mortality would be prevented.

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