

**PREVALENCE AND RISK FACTORS OF COMMON PREGNANCY
COMPLICATIONS AMONG PREGNANT WOMEN IN
OWERRI CAPITAL TERRITORY, IMO STATE.**

BY

**EZE-UFODIAMA STELLA CHIAMA
2011187003P**

OCTOBER, 2016.

TITLE PAGE

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**DISSERTATION REPORT SUBMITTED TO THE DEPARTMENT OF
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FOR THE AWARD OF THE DEGREE OF DOCTOR
OF PHILOSOPHY IN PUBLIC HEALTH EDUCATION**

OCTOBER, 2016.

APPROVAL PAGE

This Dissertation report of Eze-Ufodiama, S.C. (2011187003p) has been read and approved by the undersigned as meeting the requirements of Department of Human Kinetics

and Health Education, NnamdiAzikiwe University, Awka for the award of the degree of Doctor of Philosophy (Ph.D).

.....
Prof. J. O. Okafor
 (Supervisor)

.....
 Date

.....
Prof. O.C. Ogu
 (Head of Department)

.....
 Date

.....
Prof. O.T. Ibeneme
 (Ag, Dean, Faculty of Education)

.....
 Date

.....
Prof. I. Odimegwu
 Dean PGS.

.....
 Date

.....
 External Examiner

.....
 Date

CERTIFICATION PAGE

This is to certify that I am responsible for the work submitted in this dissertation. I also certify that the original work is mine, except as specified in acknowledgements and references. The dissertation has not been submitted to this University or any other institution for the award of any other diploma or degree.

.....
Eze-Ufodiana, Stella Chiamaka

2011187003p

.....
Date

DEDICATION

This work is dedicated to my dear husband, Sir Sylvester Okechukwu Ufodiana; and our children Chidiuto, Sandra, Ositadinma and Obiajulu.

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ABSTRACT

Pregnancy complications are one of the fatal health problems under the umbrella of reproductive health problems which has public health importance. This study was designed to determine the prevalence and risk factors of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014. Eight research questions and eight null hypotheses guided the study. Ex-post facto survey research design was used for the study. The target population consisted of twenty-two thousand, two hundred and fifty-eight (22,258) case files of all pregnant women who attended ante-natal clinics, delivered or referred to the four selected hospitals in Owerri Capital Territory Imo State. Eleven thousand, nine hundred and seventy-five (11,975) case files of pregnant women who had complications during the period were selected from the total attendee. The Data

Collection Guide was designed based on information contained in the case files of the pregnant women of the study. Data collected were analyzed using frequency counts; rates and percentages to answer the research questions, while inferential statistics of Chi-square (χ^2) at 0.05 level of significance was used to test the null hypotheses. The result of the study among others showed that the prevalence rate of common pregnancy complications was high in Owerri Capital Territory over the five-year period. These data revealed that malaria had highest prevalence rate (7.9) followed by haemorrhage (5.8) and sexually transmitted infections (5.6), while gestational diabetes (1.8) and uterine rupture (1.4) recorded the lowest prevalence rate of these complications. Pregnant women aged 35 years and above revealed highest prevalence (35.4%) of common pregnancy complications while those aged 15-24 years had lowest prevalence (31.9%). Prevalence rate of pregnancy complications among pregnant women differed significantly in Owerri Capital Territory based on years ($P < 0.05$). Prevalence based on various ages ($P < 0.05$). However, the study showed that there was no significant difference in the number of maternal deaths that resulted from common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State ($P > 0.05$). Based on the findings, it was recommended among others that adequate comprehensive maternal health services should be provided for all pregnant women by Federal and State governments. The health of pregnant women 35 years and above, as well as the multigravidae and grandmultigravida should be given priority attention through adequate funding of maternal health services.

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CHAPTER ONE

INTRODUCTION

Background to the Study

Globally, pregnant women experience all kinds of common pregnancy complications resulting in maternal morbidity and mortality. Pregnancy is an essential and common feature of human reproduction which every reproductive age woman desires to experience. This is more so in a traditional society especially in Nigeria where tradition places more value on the number of children a woman bears. Thompson (2010) defined pregnancy as the state of having an implanted embryo in the womb until such a time it is terminated spontaneously or through elective abortion or delivery. Pregnancy is also viewed as the time during which one or more offspring(s) develop inside a woman (Owen, 2009). It is a normal life event and a very special period in a woman's life. Pregnancy is not a disease but a natural phenomenon which occurs at a stage in human development when the body is fully matured and ready to procreate offspring of its own (Charles, 2009).

The process involved in the development of pregnancy includes menstruation, ovulation, fertilization, implantation, growth and development; and the women concerned should enjoy adequate health services. During pregnancy, women experience some signs and symptoms that are regarded as normal at different stages of pregnancy. Tamay and Kuscu (2011) enumerated such signs and symptoms as nausea, vomiting, breast enlargement, mild uterine contractions, missed period and frequent urination. These changes are due to temporary increase in hormone levels estrogen and progesterone. However, pregnant mothers sometimes experience conditions in form of illnesses which threaten their well being as well as that of their babies. Under normal circumstance, every pregnant woman should enjoy adequate health without experiencing pregnancy complications which are prevalent in the third world countries, Nigeria inclusive. According to World Health Organization (2008),

globally every year, more than 200 million women become pregnant and out of these people, more than 54 million of them suffer from diseases or complications of different types during pregnancy and childbirth and more than half a million women die of causes related to pregnancy and childbirth. World Health Organization (2008) and United Nations Children's Education Fund (2006) opined that at least nine percent of pregnancies in developing countries such as Nigeria and sub-Saharan African are complicated by a disease which is aggravated by pregnancy complications such as malaria, iron-deficiency anaemia, hepatitis, tuberculosis (TB), or heart diseases.

Pregnancy complications affect maternal health outcome and are illnesses or diseases that impact negatively on the health of the mother and baby. Hornby (2011) referred to complications as health problems that result to negative consequences and that such problems truncate the achievement of the desired goals. Pregnant women often encounter health problems that result to poor pregnancy outcome as a result of pregnancy complications. Common pregnancy complications as defined by James (2009) are those medical conditions that occur during pregnancy, child birth or within 42 days after childbirth which can have adverse effects on the health of the mother or baby.

Common pregnancy complications can also be described as any physical, emotional or psychological conditions suffered by pregnant women that have adverse health effects on the women and their babies (Carroli, Rooney & Viller, 2006). Common pregnancy complications can interrupt the growth of the fetus or affect the birth plan of the mother. These illnesses can cause tension and panic among family members, when pregnancy complications are evident. This results from the fact that pregnant women are susceptible to pregnancy complications which can arise at any point in time during pregnancy or after delivery. It is pertinent that pregnant mothers should embrace positive health behaviour. This may be achieved by ensuring that they attend regular ante-natal care to prevent these common

pregnancy complications for prompt diagnosis and treatment before their situation get worse. In the context of this study, common pregnancy complications are those major medical conditions which occur very often and is life threatening to the mother and baby. Pregnant women experience conditions in form of illnesses which threatened their wellbeing. Some of these common pregnancy complications experienced by pregnant women include; miscarriage, anaemia, pre-eclampsia, eclampsia, haemorrhage, ectopic pregnancy, malaria, sepsis, pre-mature rupture of membrane, obstructed labour, sexually transmitted infections among others.

Pregnancy complications are among the fatal health problems under the umbrella of reproductive health problems. World Health Organization (2008) and United Nations Children's Education Fund (2006) lamented that annually, more than half a million women die of complications related to pregnancy and child birth worldwide. Nigeria continues to have one of the highest maternal mortality rates with 20 per 100,000 live births resulting from pregnancy complications (WHO, 2008). It is not only imperative to improve maternal health for the benefit of mothers, but it is also quite necessary to ensure the well-being and survival of their children. Guimezoglu (2013) lamented that over one million children lose their mothers each year due to pregnancy-related causes and that these children are ten times more vulnerable to fatality within two years of their mother's death. Consequently, the nation and community not only lose the valuable human capital of the mothers, but also a proportion of the next generation as a result of common pregnancy complications experienced by pregnant women.

Pregnant women in Nigeria might be predisposed to pregnancy complications as a result of some identified factors. Onuzulike (2009) classified such factors as: medical factors, health service factors, reproductive and socio-economic factors. Onuzulike stressed that maternal health problems expose women to stress, tension, depression and financial strain.

Several previous pregnancies, teenage pregnancy, pregnancy at advanced age, lack of prenatal care and working very hard all day to provide her family with food, shelter and clothing predispose these women to pregnancy complications. Pregnant women also suffer pregnancy complications which could result from procedural interventions, omissions or incorrect treatment during pregnancy, labour and post delivery. Pregnant women can equally suffer pregnancy complications as a result of previous existing diseases or diseases developed during pregnancy which are aggravated by physiological effects of pregnancy. Furthermore, Ilika (2014) noted that poor and unsatisfactory health services related problems are common in developing countries such as Nigeria, and stressed that this has contributed to increased cases of common pregnancy complications in Nigeria. Ilika enumerated other factors to include health workers' attitude, inequality in distribution and citing of health facilities, non implementation of policies and programmes and incessant industrial actions by health workers. Similarly, there are inadequate manpower and infrastructure, poor referral system, rising issues of quackery among the factors that encourage prevalence of common pregnancy complications among women in Nigeria.

These causes and risk factors can endanger the life of a pregnant woman and the baby. This invariably has negative effect on the economy and overall development of the nation. The benefits of investing in women especially the pregnant ones have become increasingly recognized in recent decades. This is because reproductive age women and pregnant mothers are known to re-invest the proceeds of their development not only on their families, but also on their local communities and their countries as a whole (Abouzahr, 2004).

However, the problem of common pregnancy complications faced by pregnant women has impeded their lives and opportunities. This is because pregnant women and reproductive age women's capabilities for contributing to the labour market are wasted as a

result of common pregnancy complications. Pregnant women are component of the productive segment of any population. They contribute immensely to the Gross National Product (GNP) of any country. Therefore, it is essential to incorporate measures to improve reproductive health. It is estimated that pregnant women's productivity is reduced by as much as 20% (Maine & Rosenfield, 2006). This is largely from preventable reproductive health problems such as common pregnancy complications which account for the primary causes of death and disability for women globally. It is pertinent that every pregnant woman be knowledgeable on various pregnancy complications, their signs and symptoms, and seek for medical advice promptly and adequately to reduce the prevalence of common pregnancy complications.

The prevalence of pregnancy complications poses a disease burden on pregnant women. Waldenstrom and Borgwall (2008) defined prevalence as the number of both old and new cases of disease within a defined period of time in relation to the population at risk. Rothman (2012) explained that period prevalence is a measure of proportion of people in a population who have a disease condition at a particular time such as a particular date. In this study, period prevalence is relevant, as the researcher focused on the proportion of pregnant women in Owerri Capital Territory, who had common pregnancy complications for a specific period of time (2010-2014) which might have affected their reproductive health.

Reproductive health aims at ensuring that no pregnancy complication is experienced by pregnant women. It strives to reduce gynaecological problems and other diseases in order to achieve longevity among child bearing age women. However, in many countries, prevalence of common pregnancy complication is among the greatest health problem of pregnant women and women of reproductive age. The severity of the problem has caused the United Nations General Assembly to focus its attention on maternal health with emphasis on minimizing the occurrence of common pregnancy complications with a view to reducing

mortality. Consequently, Safe Motherhood Initiative was inaugurated in Kenya in 1987. This marked the beginning of concerted international efforts to reduce maternal mortality resulting from pregnancy complications. In addition, improving maternal health was included as the fifth goal in Millennium Development Goals (MDGs). This is another intervention programme which calls for a 75 percent reduction in mortality resulting from pregnancy complications by 2015. Clearly, interventions in reproductive health are necessary if the burden of common pregnancy complications that result in maternal morbidity and mortality is to be reduced or alleviated (WHO, 2005).

Nigeria still has an extremely high maternal mortality ratio-704 per 100,000 live births implying that with about 2.4 million live births annually, some 170,000 Nigerian women die as a result of complications associated with pregnancy and childbirth (WHO, 2008). Nosike (2008) observed that the trends of maternal deaths resulting from prevalence of pregnancy complications are on the increase and warned that if the increase trend continues till 2016, maternal mortality rate (MMR) would increase geometrically with its devastating effect on the economy. The maternal mortality ratio (MMR) is about a hundred times worse in developing countries than in industrialized countries highlighting the widest disparities in international public health (UNICEF, 2006). The most common causes of direct obstetrics death among pregnant women in Nigeria include; haemorrhage, sepsis, anaemia and malaria.

However, to increase the likelihood of achieving a reduction in the prevalence of common pregnancy complications, Ilika (2014) explained that WHO launched the partnership for Maternal, Newborn and Child Health in September, 2005. This collaboration between many academic and research institutions, government and non-governmental health agencies aims at taking immediate action to reduce common pregnancy complications and to help pregnant women to survive. Ilika further noted that WHO intended to prioritize

maternal health with emphasis on the reduction of common pregnancy complications. This is to raise awareness of the fact that common pregnancy complications pose the greatest threats to the health of the pregnant women in developing countries such as Nigeria. Reproductive age, according to WHO (2009) refers to the proportion of women who are within the age of child bearing, between 15 and 49 years. Hamilton and Diana (2011) stressed that the ideal age for efficient reproductive performance is 19-25 years and opined that women below 15 years of age and above 30 years, delivering at the first time, create problems and such women suffer disability and death from pregnancy complications. Some pregnant women may experience pregnancy complications which might be associated with some risk factors.

Risk factors of pregnancy complications contribute to maternal morbidity and mortality. Rothman (2012) noted that pregnant women who are at risk of common pregnancy complications may not achieve successful pregnancy outcome. Katwijk and Peeters (2008) referred to risk factors of pregnancy complications as the increased chances of pregnant women developing common pregnancy complications. Such risk factors that can affect these women include; age, parity, occupation, marital status, literacy status, ante-natal booking status among others. Katwijk and Peeters (2008) argued that pregnant women are predisposed to increased risk of pregnancy complications during childbirth and post delivery. Such risk factors that might affect pregnant women as enumerated by Katwijk and Peeters include age, parity status, literacy status and previous history of any medical condition, as well as occupation, marital status, lifestyle and religion. In this study, the researcher focused on age, parity status, occupation, marital status and ante-natal booking status as risk factors that could affect pregnancy complications among pregnant women in Owerri Capital Territory, Imo State.

Parity status might be associated with pregnancy complications. Bennette and Brown (2006) defined parity as the number of pregnancies carried to viable gestational age by

pregnant women. However Bennette and Brown noted that there are other terms that give more detailed information about a woman's obstetric history. In this study, parity is regarded as the number of childbirth a woman had irrespective of age. Age is conceptualized as the amount of time a person has lived. It can be described as the period during which pregnant women would bear children with increased or less risk factors of common pregnancy complications which will be dependent on the age of these women at pregnancy. WHO (2007) attested that common pregnancy complications vary with the age of the mother. In addition, Baabian (2010) asserted that in developing countries, age at delivery has a positive association with common pregnancy complications and strongly upheld the view that women who are below 17 years and above 35 years are likely to become victims of pregnancy complications. Based on this view, the researcher decided to categorize the ages of the women of this study into three: 15-24, 25-34 and 35 years and above.

Occupation of the mother might be regarded as a risk factor for common pregnancy complications. Occupation may refer to a job, a regular activity performed for a payment that occupies one's time (Adler, 2012). Occupation is what one does for a living. According to Koshiha (2012), certain factors such as strenuous work load can help identify women who may be at risk of pregnancy complications. Work that is physically hard requires lengthy standing positions and exposure to toxic chemicals can adversely affect maternal pregnancy outcome. Due to economic reasons, pregnant women in Owerri Capital Territory engage in work activities to support their families and this may have adverse effect on their health. Pregnant mothers need support to protect their health while working and to ensure their economic security during pregnancy and after child birth especially the unmarried women.

Marital relationship is an aspect of human life that every reproductive age woman in a developing country like Nigeria desires to experience. These women need support from their husbands and other significant persons. In this study, all pregnant women who are not yet

married as well as the separated, widow and divorced are regarded as unmarried and those still in marriage are regarded as married. The unmarried women of the study might lack emotional support and have financial challenges such as cost of transport and payment of hospital bills. These factors might increase the prevalence of pregnancy complications among these women and hinder them from attending ante-natal clinic to receive care.

Ante-natal care is the supervision and care given to a pregnant woman to achieve good health and pleasant child bearing experience and a healthy baby at the end of the pregnancy (Onuzulike, 2009). Ante-natal booking status might be another risk factor of common pregnancy complications. Not all pregnant mothers attend ante-natal clinic. Some pregnant women in Nigeria book late, do not book at all or may have irregular attendance to ante-natal visits due to several reasons. This might range from ignorance, financial challenges and location of the health facilities. According to Akhigbe, Edokha and Owolabi (2008), booked mothers are defined as pregnant women who have had at least three ante-natal visits and unbooked mothers are pregnant women who had less than three ante-natal visits, or have not attended ante-natal visits at all throughout the index pregnancy. These ante-natal visits as well as treatment given are recorded in the folders of these pregnant women. In this study, booked mothers are pregnant women who attended ante-natal clinic at least three times in the index pregnancy while women who booked late or attended ante-natal clinic less than three times or not booked at all are regarded as unbooked mothers. Positive pregnancy outcome is a function of regular ante-natal visits by pregnant women which might be related to their literacy status.

Literacy is traditionally understood as the ability to read and write. Literacy status, a risk factor, might affect pregnancy outcome of pregnant women in Owerri Capital Territory. According to Idowu, Mafiana and Sotiloye (2005), the knowledge acquired as part of the school curriculum is clearly instrumental for informed decision-making which largely shapes

individual's interaction with the surrounding world. With limited education opportunities, pregnant women in developing countries such as Nigeria may experience more common pregnancy complications unlike their counterparts in developed countries of the world (UNICEF, 2006).

These risk factors of common pregnancy complications reported in this context may affect pregnancy outcome as well as prevalence of common pregnancy complications in pregnant women in Owerri Capital Territory of Imo State. In Nigeria, although information on general situation of pregnancy complications causing maternal morbidity and mortality and studies on prevalence of anaemia in pregnant women and pregnancies outcome exist, there is need to carry out this study to determine the prevalence and risk factors of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State between 2010-2014.

Statement of the Problem

Reproductive age women and pregnant mothers constitute a very important segment of the population of any nation because of their number and characteristics. Under normal circumstances, pregnancy is suppose to be a thing of joy to a woman and her family. A pregnant woman is suppose to carry on with her normal duties without undue hindrances. However, some women may be hindered from performing their duties by some pregnancy complications which can have adverse effects on their health and that of their babies.

Several health intervention programmes have been adopted by government and non-Governmental Organizations (NGOs) both within and outside Nigeria to reduce maternal morbidity and mortality resulting from common pregnancy complication. For instance, the safe motherhood conference was held in 1987 in collaboration with the World Bank, WHO, United Nation Population Fund (UNFPA) and the United Nation Development Programme (UNDP) to reduce maternal morbidity and mortality (Starrs, 2009). In Nigeria in particular,

according to Shiffman and Okonufua (2007), free maternity services for pregnant women have been advocated for and in fact, being implemented in 23 out of 36 states of the federation. In spite of all these efforts' United Nations still reports high frequencies of these complications in developed and developing countries globally. Maternal morbidity situation resulting from common pregnancy complications in Nigeria has not changed. Foreman and Murry (2010) reported that Nigeria has the highest rate of maternal mortality resulting from pregnancy complications among the developing countries; and has been ranked as the second country (after India) with highest number of maternal health in the world. Incidentally, to the best of the knowledge of the researcher, there are no known studies that have been carried out in Owerri Capital Territory Imo State, to determine the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State and risk factors associated with this prevalence. Therefore, the present study was designed to investigate prevalence and risk factors associated with them among pregnant women in Owerri Capital Territory of Imo State, Nigeria, from 2010 to 2014.

Purpose of the Study

The main purpose of this study was to determine the prevalence and risk factors of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State Nigeria within the period (2010-2014). Specifically, the study sought to determine the:

1. prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State, Nigeria.
2. prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, based on various ages.
3. prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, based on parity status.

4. prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, based on occupation.
5. prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, based on literacy status.
6. prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, based on marital status.
7. prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, based on ante natal booking status.
8. number of maternal deaths that resulted from common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State.

Significance of the Study

The results of the study will be significant in the determination of the prevalence and risk factors of common pregnancy complications among pregnant women in Owerri Capital Territory. The results of the study will be beneficial to pregnant and all child bearing age women, health workers and medical personnel, health institutions, government and non-governmental organizations, researchers and curriculum planners.

The findings of the study will stimulate and create awareness on pregnancy complications which is most prevalence among pregnant women. When this information is revealed to them, it will enable them take precautionary measures to reduce the occurrence of these complications and the associated risk factors.

The findings of the study will also expose the frequencies of occurrence of common pregnancy complications to the health workers and medical personnel in order to take appropriate action to reduce prevalence of these complications among pregnant women in Owerri Capital Territory, Imo State.

The results generated from the study will guide health institutions in improving their record keeping on pregnancy complications. Subsequently, it will assist the Federal and State government to adopt appropriate policy implementation measurement on maternal health to improve the health of pregnant women.

The findings of this study will make recommendations to enable government organize health education programmes for pregnant women and reproductive age women. It could be achieved through seminars, workshops, health talks and media education to sensitize these women on frequencies and occurrence as well as risk factors of common pregnancy complications. The non-governmental organizations will also benefit from the results of the study because it will make them have accurate information on prevalence of these pregnancy complications. It will also make them establish more hospitals in the area of reproductive health and planning more health programmes such as health screening for the pregnant women. This will help non-governmental organizations stem the tide of prevalence of common pregnancy complications among pregnant women.

The findings of the study will equally be beneficial to researchers. It will open up areas for further research in the aspect of developing health programmes that will assist in reducing prevalence of common pregnancy complications and risk factors associated with them. Similarly, curriculum planners will find the data useful as it will provide the basis for including prevalence and risk factors of common pregnancy complications in the school curriculum of secondary and tertiary institutions in Nigeria.

Scope of the Study

The study was delimited to the four Local Government Areas within Owerri Capital Territory of Imo State, Nigeria, from 2010-2014 which consists of 42 autonomous communities. It was also delimited to independent variables of age, parity status, occupation, marital status, literacy status and ante-natal booking status, dependent variables of pregnancy

complications reported or experienced by these ante-natal attendees, as well as the number of maternal deaths that resulted from common pregnancy complications in Owerri Capital Territory, Imo State.

Finally, the study was delimited to four health facilities in Owerri Capital Territory, Imo state. These are two tertiary health institutions, and two secondary health facilities.

Research Questions

The study was guided by the following research questions:

1. What is the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State, from 2010-2014?
2. What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State based on various ages?
3. What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State based on parity status?
4. What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State based on occupation?
5. What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State based on literacy status?
6. What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State based on marital status?
7. What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State based on ante natal booking status?
8. What is the number of maternal deaths that resulted from common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State?

Hypotheses

The following null hypotheses were postulated for the study, and were tested at 0.05 level of significance:

1. There is no significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State from 2010 to 2014.
2. There is no significant difference in the prevalence of common pregnancy complications among pregnant women of various ages in Owerri Capital Territory of Imo State.
3. There is no significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State based on parity status
4. There is no significant difference in the prevalence of common pregnancy complications among the pregnant women in Owerri Capital Territory of Imo State based on occupation.
5. There is no significant difference in the prevalence of common pregnancy complications between the literate and non literate pregnant women in Owerri Capital Territory of Imo State.
6. There is no significant difference in the prevalence of common pregnancy complications between the married and the unmarried pregnant women in Owerri Capital Territory of Imo State.
7. There is no significant difference in the prevalence of common pregnancy complications between the booked and unbooked pregnant women in Owerri Capital Territory of Imo State.

8. There was no significant difference in the prevalence of common pregnancy complications that resulted to maternal death among pregnant women in Owerri Capital Territory of Imo State from 2010 - 2014.

CHAPTER TWO

Review of Related Literature

This chapter dealt on the reviewed related literature under the following headings and sub-headings:

Conceptual Framework

Pregnancy

Reproductive Age

Pregnancy Complications

Ante-natal Care

Maternal Morbidity and Mortality

Prevalence

Risk Factors

Theoretical Framework

Health Belief Model

Self-efficacy

Theoretical Studies

Some Common Pregnancy Complications and Consequences

Risk factors of Pregnancy Complications

Empirical Studies on pregnancy complications

Summary of Related Literature Review

Conceptual Framework

Pregnancy

Pregnancy is an essential and common feature of human reproduction which every reproductive age woman desires to experience. It is the state of having an implanted embryo in the uterus until such a time that it is terminated by spontaneous or elective abortion or

delivery (Thompson, 2010). It is an aspect of reproductive health, the beginning of life which starts with conception of the embryo in the uterus and continues through the development of the fetus and finally ends at birth. It implies the presence of developing offspring in the uterus. Pregnancy brings about changes in the body due to the effect of oestrogen and progesterone (Bennette & Brown, 2011). Bennette and Brown noted that these changes enable women to nurture their fetus, prepare their body for labour, develop their breasts and lay down stores of fat to provide calories for the production of breast milk during peuperium.

In practical terms, the state of pregnancy is known as gravid, and a pregnant female is sometimes referred to as gravida (Dorcas, 2007). Similarly, the term “parity” (abbreviated as “para”) is used for the number of previous successful live births. Hence, during a second pregnancy a woman would be described as “gravida 2, para 1” and upon delivery as “gravida 2, para 2”. Incomplete pregnancies such as abortions/ miscarriages account for parity values being less than the gravida number, whereas a multiple birth will increase the parity value. Women who have never carried a pregnancy, achieving more than twenty weeks of gestation age are referred to as “nulliparous” or gravida 0. A woman who is pregnant for the first time or has been pregnant one time is referred to as “primigravida” or gravida. Again, a multigravida or more specifically a gravida 2, gravida 3, and so on, is a woman who has been pregnant more than once.

Roosevelt and Edger (2009) noted that though pregnancy begins at conception, it is more convenient to date from the first day of the woman’s last menstrual period (L.M.P), or from the date of conception (if known). Starting from one of these dates, the expected date of delivery (E.D.D) can be calculated, counting from the last menstrual period (L.M.P). Pregnancies usually last between 37 weeks and 42 weeks, with the E.D.D at 38 weeks or 40 weeks after conception. Pregnancy is considered as term when gestation attains 37 completed weeks but is less than 42 weeks. Events before the completion of 37 weeks are considered

pre-term, from week 42 (294 days) events are considered post-term. Smith, Fawcus and Holm (2008) noted that when a pregnancy exceeds 42 weeks (294 days), the risk of complication for mother and fetus increases significantly. As such, obstetricians usually prefer to induce labour, in an uncomplicated pregnancy, at some stage between 41 and 42 weeks. According to Godwin (2007), fewer than 5 percent of births occur on the due dates, 50 percent of births occur within a week of due date and almost 90 percent within two weeks.

Thompson (2010) further explained that pregnancy involves processes such as fertilization and development of one or more offsprings, known as an embryo or fetus in a woman's womb. According to Thompson, a pregnancy test is used to detect the human chorionic gonadotropin (HCG) produced by the embryo, eight days after the menstrual period ceases in a reproductive age women and is used to confirm pregnancy. Literally, it means a woman has a baby developing inside the body. Ross and Wilson (2010) further explained that pregnancy is the period when great changes occur in the physiology of the female to give the fetus the nutrients required for growth, and subsequent lactation. This is because, according to Ross and Wilson, the trophoblast is a highly active tissue that removes substances from the maternal blood, converting them to protein and vitamins for the fetus.

Davison (2010) also noted that pregnancy is a time of emotional and physiological changes during which the various systems of the body are fashioned for the role they will have to fulfill in supporting and eventually expelling the fetus. The psychological state of the pregnant women is also affected by hormonal changes (Thompson, 2010). These changes interact with other external factors and influence a female's transition to motherhood. Hamilton and Diana (2011) opined that when pregnancy occurs, menstruation ceases and returns some weeks after delivery. The hormones- oestrogen and progesterone are produced in large quantity and they exert some influence on the various systems and organs of the pregnant woman. Akuruka (2009) added that during pregnancy, the amount of blood in a

woman's body would increase by about 30 percent in order to meet the requirements of the fetus; and noted that more blood flow to the breast making them tender and getting them prepared to feed the expected new born baby and prepares the body for processes involved in development of pregnancy.

Akuruka (2009); Cambill (2011) and Davison (2010) identified the processes involved in the development of pregnancy to include; menstruation, ovulation, fertilization, implantation and growth and development of the fetus. However, at times, abnormalities might occur in some of these processes and these could be regarded as some of those pregnancy complications. Ross and Wilson (2010) reported that the menstrual phase is characterized by vaginal bleeding which lasts for three to five days and occurs every 28 to 30days more or less from puberty to menopause in the normal woman. Ross and Wilson maintained that menstrual phase is the terminal phase of menstrual cycle when the endometrium is shed, to the basal layer along with the blood from capillaries and with the unfertilized ovum. Ross and Wilson pointed out that the length of each period and the amount of bleeding varies from woman to woman. It may also vary in the same woman from time to time which depends largely on the maturity of the ovum for ovulation to occur.

Ovulation as defined by Hamilton and Diana (2011) is the process whereby the graaffian follicle ruptures and the ovum is liberated. Hamilton and Diana maintained that ovulation occurs in the middle of the menstrual cycle or about halfway between periods, that is, 13-15days before a woman's next period. Akomie (2007) further explained that ovulation is the release of a matured egg of a reproductive woman on one of the ovaries each month and that egg once released by the ovary moves into the fallopian tube for fertilization.

Fertilization according to Hamilton and Diana is the fusion of the ovum and the spermatozoa. It initiates the beginning of a new life. Hamilton and Diana explained that it usually occurs at the ampulla of the fallopian tube 36-48hours after ovulation. A zygote is

formed from fertilization and it contains 46 chromosomes in its nucleus. According to Carlson, Karen, Eisienstat, Staphanie, Ziproyn and Tera (2004), the zygote (the new cell) now travels towards the uterus aided by the ciliary and peristaltic movement of the fallopian tube, and the development of the baby continues until birth. Akomie stressed that for fertilization to occur, the sperm must find the egg within one day (24hours), the time the egg leaves the ovary. Implantation, on the other hand, occurs after fertilization which is described by Akomie as the process in which the fertilized egg reaches and attaches itself to the lining of the uterine wall and begins to develop. Akomie (2007) explained that it takes the fertilized egg an average of five days to reach the inside of the womb, the fertilized egg then attaches itself to the lining of the womb, subsequently growth and development of embryo begins. Growth and development of the fetus according to Davison (2010) result in the formation of organs, nerves, muscles and bones that make up the body. It occurs as a result of the division of the fertilized egg immediately after fertilization. Davison pointed out that human beings grow faster while in the womb if there are no complications, than at any other time in life.

During the period, signs and symptoms of pregnancy are those changes experienced by pregnant women that do not have serious negative health effects on the mother or baby. They are routine problems and are normal discomforts and pose no significant danger to either the woman or the baby such as backache, nausea, constipation and varicose veins. Herrings and Polacik (2010) explained that apart from pregnancy test in a professional laboratory, a woman could sometimes recognize early signs. Braxton (2005) and Daler (2006), identified three categories of signs of pregnancy as follows; presumptive signs, probable signs and positive signs. Presumptive signs according to Braxton and Daler include missed periods, nausea, increase in size and tenderness of breasts, darkening of alveolar tissues surrounding the nipple, quickening, bladder irritability, morning sickness and

pigmentation of the skin. These are experienced by pregnant women which progresses to another stage as the pregnancy advances called probable signs.

Probable sign according to Braxton and Daler is characterized by increase in the frequency of urination, increase in size of the abdomen, softening of the cervix at about the sixth week of pregnancy, the violet blue discoloration of vaginal mucous membrane, Braxton-Hick's contraction (mild uterine contraction that occurs in early pregnancy) and positive pregnancy test. Positive signs involve the determination of fetal heartbeat, fetal movement and observation of the fetus by ultrasound. Other signs include progressive enlargement of the uterus and cervix, painless uterine contractions, vaginal engorgement and blueness, as well as the presence of human chorionic gonadotropin (HCG) in the urine which confirms that a woman is pregnant (Ajumaye, 2004; Akuruka, 2009; Cambill, 2011 & Magloire, 2011).

Reproductive Age

The real reproductive age in women according to World Health Organization (2007) is 15-49 years starting from menarche to menopause. Representatives from esteemed organizations including the American Society for Reproductive Medicine (ASRM), the National Institute of Health and the North American Menopause Society pooled their knowledge together and agreed that normal menopause occurs between 42 and 58 years with the average age of 50 years as the pregnant women (UNFPA, 2007). Hamilton and Diana (2011) are of the opinion that the ideal age for efficient reproductive performances is between 19 years and 25 years. Hamilton and Diana stressed that women below 15 years of age and above 30 years delivering at the first time, create problems and they suffer disability and death from pregnancy complications.

However, globally, women are delaying childbearing for various reasons. United States Agency for International Development (2011) listed some of the reasons as; pursuit of career

or financial goals, better contraception, longer life expectancy, and higher education. According to Bianco, Lynch and Stone (2009), traditionally, pregnant women older than 35 years are considered of advanced age and also at increased risk for complications during pregnancy and labour. In this study reproductive age women were those between the ranges of 15 to 50 years.

Pregnancy Complications

Pregnancy complications are health problems that occur during pregnancy. They affect the mother's health, baby's health or both. James (2009) defined common pregnancy complications as those medical conditions that occur during pregnancy, child birth or within 42 days after child birth which can have adverse effects on the health of the mother or baby. James emphasized that some women have health problems before they become pregnant that could lead to complications, while other problems arise during pregnancy. Jowel (2010) added that there are several pre-existing medical conditions that can predispose a woman to pregnancy complications such as high blood pressure, sexually transmitted infection. Jowel however stressed that some pregnancy complications are more common than others; and listed some of the common pregnancy complications as follows; malaria, haemorrhage, anaemia ,high blood pressure, pre-eclampsia and eclampsia, ectopic pregnancy, depression, gestational diabetes, eating disorder, over-weight, sexually transmitted infections (STIs), uterine rupture, uterine fibroids, asthma, blood disorders, and abortions or miscarriages.

Dowey and Elain (2006) also referred to pregnancy complications as symptoms and problems that are caused by pregnancy, and explained that there are both routine problems, serious and even potentially fatal problems suffered by pregnant women. Dowey and Elain also emphasized that the routine problems are normal discomfort and pose no significant danger to either the woman or the fetus. Such routine problems are backache, constipation, haemorrhoids, dehydration and varicose vein and warned that serious problems can cause

both maternal death and fetal death if untreated. These serious and potentially fatal problems are referred to as pregnancy complications which can have negative health consequences on both the mother and baby.

There were an estimated 529 million maternal deaths worldwide in 2000 resulting from common pregnancy complications (WHO, 2008). This results from environmental and personal factors. Pregnancy is always accompanied with illnesses/problems, which sometimes lead to complications. Many women experience some discomfort or report minor complaints during pregnancy, although their discomforts are not dangerous, they can be distressing to pregnant women. However, it is important for women to know which of these complications are dangerous and which ones are not, so as to seek prompt medical care. Dowey and Elain (2006) pointed out that a woman with anaemia, for instance, does not only have a medical problem but may become tired and depressed, she may find herself unable to cope with domestic chores, taking care of the children and she may have to take time off from her employment to rest and seek for medical care. In this study, common pregnancy complications are those medical conditions which occur very often and are life threatening that are associated with pregnancy, were considered.

Pregnancy complications rank among the most pressing reproductive health challenges all over the world. Globally, an annual estimate of 600,000 pregnant women died of pregnancy related causes, approximately, 99 percent come from the developing world with Nigeria accounting for well over 10 percent of these cases (WHO, 2008). Haemorrhage, sepsis, anaemia, malaria, pregnancy induced hypertension and others are the most common causes of obstetric death in Nigeria (Shehu, 2012). Haemorrhage, especially in the post partum period is unpredictable and rapidly leads to loss of life particularly when the mother is anaemic and in the absence of prompt and appropriate life saving care. Sepsis is an infection of the genital tract accompanied with fever, which generally affects the inner lining

of the uterus (endometrium) extending into the blood vessels. Another culprit is pregnancy induced hypertension which occurs in the later part of pregnancy and can be fatal for the expectant mother. Adams (2010) in his view described common pregnancy complications as any physical or psychological conditions that can affect pregnancy and may adversely have effect on the woman's health and that of the fetus. A situation where a woman with pregnancy complications does not receive adequate medical care, can lead her to serious pregnancy problems, which may result to the death of the mother and that of the fetus.

Davison (2010) listed some of these serious and common pregnancy complications that mainly originate from the mother as severe hypertensive states such as pre-eclampsia and eclampsia. Davison further explained that these pregnancy complications can be treated with early diagnosis and regular ante-natal care. Murphy (2008) added that serious pregnancy complications may have serious consequences on the mother and listed these fetal problems as ectopic pregnancy (implantation of embryo outside the uterus), placental abruption and praevia, bleeding, abortions or miscarriages, sexually transmitted infections (STIs), malaria, anaemia, gestational diabetes, hypertension and uterine rupture. However, Ross and Wilson (2010); Dowey and Elain (2006); and Dunn (2012) indicated that common pregnancy complications could worsen and lead to the death of the mother and the fetus. It is in the light of this, that Dowey and Elain (2006) advised that pregnant women with common pregnancy complications should seek for adequate medical care in the ante-natal clinic during pregnancy, to reduce the high prevalence of pregnancy complications. Pregnancy complications that were considered in this study were those medical conditions that the women experienced during pregnancy, child birth or within 42 days after child birth which had adverse effects on the health of their babies. These were identified in their different clinic records.

Ante-natal Care

Ante-natal care is defined by Onuzulike (2011) as the care and advice, supervision and attention that a pregnant woman receives to ensure good health, a pleasant child bearing experience and a healthy baby at the end of pregnancy. Ante-natal care in the context of this study is the care and education given to pregnant women. Ante-natal care should commence (start) from the time pregnancy is diagnosed until the safe delivery of the mother. Moscrop (2013) was of the opinion that ante-natal care is care given to pregnant women immediately after the pregnancy has been confirmed at about the third week of pregnancy. Ante-natal visits start from conception to the delivery of the baby. Shaa and Ahmed (2009) acknowledged that ante-natal care helps to ensure the detection of women at high risk of pregnancy complications and the provision of treatment or referral to facilities with appropriate equipment and trained staff. Shaa and Ahmed added that failure of the pregnant women to seek for ante-natal care might lead to pregnancy complications, death of the fetus or maternal death.

Furthermore, ante-natal care includes screening asymptomatic pregnant women with the aim of detecting health problem in both mother and baby to forestall adverse effects (Garner & Grimes, 2010). Onuzulike (2009) noted that to carry out the above activities, it requires an effective and thorough ante-natal care and close co-operation of all the medical and paramedical personnel. It must also take into consideration the general health, mental outlook, social and economic background of the mother as well as her obstetric condition. According to MacDonald (2011) ante-natal care is provided in ante-natal clinics, which is usually conducted by general duty medical practitioners, obstetricians and gynaecologists. Onuzulike explained that in some developing countries, trained midwives, nurses and traditional birth attendants (TBAs) who have undergone special training also conduct ante-natal care; In support of the above contributions, Shaa and Ahmed (2009) noted that ante-

natal clinics also serve as the avenues for repeat contacts and repeat visits between the woman and her medical attendants until she delivers. Ante-natal visit is very crucial and serves as the meeting point between the woman and the medical attendants, the visit is called booking clinic in many establishments (Garner & Grimes, 2010). The booking visit serves as an occasion for screening or sorting out cases into various groups to ensure expert care in subsequent visits.

Considering the importance of ante-natal visit, Dowey and Elain (2006) were of the opinion that pregnant women should commence ante-natal visit at the confirmation of pregnancy. Carroli, Rooney, Viller (2006) further explained that a complete general medical examination should be undertaken to check whether the pregnant woman has no undetected illness. Magloire (2011) posited that at the time of confirmation of pregnancy, a complete record should be obtained concerning the past medical history with particular attention paid to any past history of tuberculosis, diabetes, heart diseases and any viral infection from which the pregnant woman may have suffered. Commenting on the importance of the first visit at the third week of the first missed menstrual period; Davison (2010) pointed out that the first visit should be early enough, because it is an occasion when a great deal of important advice is elicited and offered. It is ideally the first start of trusting relationship between the pregnant woman and health professionals (Al-shereti, 2011). In support of the above assertion, Berggin (2007) maintained that during such visit, interview, laboratory tests and physical examinations should be conducted; and the findings should be used to assess whether the expectant mother is healthy or not. In addition, potential problems affecting the pregnant woman and the fetus would be identified and given prompt medical attention.

Kwame, Kuo and Ketu (2010) and Ramanjo and Dannis (2007) were of the opinion that during ante-natal visit, a thorough history is usually taken and physical examination is carried out. Such laboratory tests include urine and blood test. The findings, according to Onuzulike

(2009) are used to assess how healthy the pregnant woman is and also to identify her potential problems as well as record the effects of whatever treatment she received. Onuzulike also explained that pregnant women have their urine tested for protein, acetate; sugar and their haemoglobin are checked too. These laboratory results and treatment given are recorded in the folders of these pregnant women. The main purpose of the folder is to organize and cross reference items in such a way that it is easy for the end users to have access to the information required at a particular time. Folder in the context of this study is a file that contains information about a pregnant woman. The folder is usually kept at the medical records office within the ante-natal clinic, located in the health facility. Appropriate filling of these folders ensures easy access for the health workers and medical personnel. This would facilitate adequate and prompt care for the pregnant mother and would help reduce prevalence of pregnancy complications among pregnant women. All these are done to avoid or reduce to the barest minimum, the prevalence of pregnancy complication among these women.

Garner and Grimes (2010); Hamilton and Diana (2011); and Moscrop (2013) identified the issues that are usually explained to the expectant woman during ante-natal visit and counselling sessions as follows; workload, rest and sleep, exercise, diet, environmental hazards, sexual intercourse, recreation, personal hygiene, clothing, travelling and other health matters. Hamilton and Diana; Garner and Grimes, and Moscrop further explained that the body weight and blood pressure are measured and recorded. Garner and Grimes stressed that the woman is also made to understand that there are some factors that can place her at high risk of having common pregnancy complications and their adverse pregnancy outcomes and enumerated such factors or variables as age, parity, level of education, occupation, location, marital status, lifestyle, heredity, and previous history of any medical condition among others. Pregnant women should be informed about these factors during ante-natal visits.

According to Moscrop (2013) pregnant women who visit gynaecologists for medical attention in developed countries of the world have access to text books, or pamphlets that are highly educative which help to reduce death of fetus and other pregnancy complications. This might not be the case among pregnant women in developing countries such as Nigeria. Garner and Grimes (2010) posited that failure of pregnant women to seek and comply with scheduled visits at the antenatal clinic might lead to death of the fetus, and other severe pregnancy complications and even maternal deaths. Thus, it is critically important to identify and manage complications as they arise among all pregnant women. In this study, such pregnancy complications among pregnant women in Owerri Capital Territory will be identified and perhaps make some recommendations on how to prevent and reduce the prevalence of these complication as well as risk factors assoaited with them.

Maternal Morbidity and Mortality

Maternal morbidity has been defined as any illness or injury caused and aggravated by or associated with pregnancy or child birth (Koblinsky, Mosley & Redd, 2011). Maternal mortality is also defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (UNICEF, 2001). The principal indicator of mortality among women is the maternal mortality ratio (MMR), which is the number of maternal deaths per 100,000 live births. Maternal deaths can be direct obstetric deaths, which results from obstetric complications of the pregnant state (pregnancy, labour and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above.

Indirect obstetric deaths, on the other hand are those resulting from previous existing disease or diseases that developed during pregnancy and which was not due to direct

obstetric causes, but which were aggravated by physiologic effects of pregnancy. Furthermore WHO (2010) opined that maternal mortality is a condition where a women dies as a result of complications during and following pregnancy and childbirth. Most of these complications develop during pregnancy. Furthermore, Ilika (2014) noted that environmental factors such as poor and unsatisfactory health services related problems contribute to increase cases of common pregnancy complications and maternal death. In Nigeria, health workers attitudes, inequality in distribution and citing of health facilities, non-implementation of policies and programs on maternal health, incessant industrial actions (strike action) embarked upon by health workers among others have been implicated in the poor state of health care delivery system in Nigeria that contribute to maternal death.

Other complications may exist before pregnancy but are worsened during pregnancy. The major complications that account for nearly 75% of all maternal deaths include: severe bleeding (mostly bleeding after childbirth), infections (usually after childbirth), high blood pressure during pregnancy (pre-eclampsia and eclampsia), complications from delivery and unsafe abortion (USAID, 2011). On the other hand, the maternal mortality ratio is the most commonly used indicator of maternal death. It measures a woman's risk of dying from a given pregnancy as a result of pregnancy complications. It is expressed as the number of maternal deaths per 100,000 live births, in a period (usually a year). The maternal mortality rate correctly refers to the number of maternal deaths in a period (usually a year) per 100,000 women of reproductive age (usually defined as aged 15-44 or 15-49). This indicator takes into account both the risk of becoming pregnant and the risk of dying for reasons related to maternal complications during pregnancy (Gaufberg, 2008).

Nigeria still has an extremely high maternal mortality ratio-704 per 100,000 live births implying that with about 2.4 million live births annually, some 170,000 Nigerian women die as a result of complications associated with pregnancy and childbirth (WHO,

2008). Nosike (2008) observed that the trends of maternal deaths resulting from prevalence of pregnancy complications are on the increase and warned that if the increase trend continues till 2016, maternal mortality rate (MMR) would increase geometrically with its devastating effect on the economy. The maternal mortality ratio (MMR) is about a hundred times worse in developing countries than in industrialized countries highlighting the widest disparities in international public health (UNICEF, 2006). The most common causes of direct obstetrics death among pregnant women in Nigeria include; haemorrhage, sepsis, anaemia and malaria.

These complications can lead to maternal death, many more women may also suffer injuries, infections, and disabilities brought about by pregnancy or childbirth complications, such as obstetric fistula. In addition, WHO (2008) noted that in 2007, the major direct causes of maternal deaths global are: severe bleeding or haemorrhage (27%), infections (11%), unsafe abortion (8%), high blood pressure during pregnancy (pre-eclampsia and eclampsia) (14%), obstructed labour (9%), blood clots/embolism (3%) and pre-existing conditions (28%). WHO (2008) stated that maternal mortality ratio (MMR) (maternal deaths per 100,000 live births) ranged from 9 in developed regions to 900 in sub-Sahara African. WHO (2008) further explained that in 2007, the World wide average lifetime risk (probability of maternal death during a women's reproductive life, usually expressed in terms of odds) of dying from causes related to pregnancy and child birth was 1 in 74, and that a woman in Sweden had only 1 in 29,800 risk death related to pregnancy and child birth in her life time, while the risk for a woman in Sierra Leone or Afghanistan was 1 in 6. Both pregnancy-related deaths and obstetric deaths continue to rise. According to Reproductive Age Mortality Survey (RAMOS) (2010) in Argentina, Egypt, Ghana and Turkey, the proportion of obstetric deaths among pregnancy related deaths varied from 59 percent to 81 percent. RAMOS stressed that in Agincourt, obstetric deaths accounted for 35 percent of all pregnancy related

deaths. In this study, clinic records of these pregnant women were carefully examined and those complications that resulted to death were identified.

Prevalence

Morbidity data gives information and complete description of the burden of a disease within a community than mortality data. This is because morbidity statistics records the amount of illness in the community, while mortality records the number of deaths in a given time and place (Borgwall & Waldenstrom, 2008). In epidemiological studies, the description of morbidity and mortality are expressed in various forms like maternal mortality rates, infant mortality rates, perinatal mortality rates, case fatality rates and incidence rates among others. However, prevalence is the most appropriate means of describing morbidity when the focus is on the study of epidemic of disease or disorders as an expression of the burden of such ailments or related events in the community (Benson, 2004). This is so because, prevalence according to Al-shereti 2011; Wasaran, 2007 and WHO (2008) is the measure of the existing cases (both old and new cases) of a disease or related event occurring in a community either at a particular point in time (point prevalence) or during a given period of time (period prevalence). The researcher studied several common pregnancy related illnesses or complications over a period of five years and therefore utilized the period prevalence to determine the burden of common pregnancy complications on pregnant women in Owerri Capital Territory, Imo State during the period under consideration.

Therefore, the number of prevalent cases is the total number of cases of diseases existing in a population. Lucas and Giles (2003) described prevalence as the total number of cases of a disease existing in a population divided by the total population. Prevalence deals on past records and in this study the past records of pregnant women in Owerri Capital Territory who suffered some common pregnancy complications under study from 2010-2014 were used.

Risk Factors

The term “risk” was originally an expert’s concept; hence individual finds it difficult to conceive of in everyday life. The concept of risk is an outgrowth of our society’s great concern about coping with the dangers of modern life (Nosike, 2008). It is the potential that a chosen action or activity, including the choice of in-action, will lead to a loss or undesirable outcome. According to Shehu (2012), risk is an uncertain event or condition that if it occurs, will have negative or positive effect on health, meaning the natural probability of either positive or negative event occurring. In everyday life a risk is an exposure to loss or injury. A situation has risk if the future state or outcome of the situation is not known for certain. This shows that risky situation has one possible outcome and that for each possible outcome, one can assess the probability that a particular outcome will occur. Risk is the possibility of something bad happening some time in the future, a situation that could be dangerous or have bad result. This means that the individual already has a premonition that something bad will result from something or an action that is going on, although not immediately. It can mean consequences and also a potential adversity or threat e.g prevalence, relative risk, hazard (MacDonald, 2011).

In health, risks in personal health may be reduced by primary prevention action that decreases early causes of illness or by secondary prevention actions after a person has clearly measured clinical signs or symptoms recognized as risk factors (Starrs, 2009). Product of the consequences and probability of a hazardous event or phenomenon, for example, the risk of developing pregnancy complications is estimated as the incremental probability of developing pregnancy complications over a life time as a result of exposure to certain independent variables such as parity status (bearing too many children), literacy status, not booking at ante-natal clinic and others. However, every human endeavour carries some risks, but some are much more likely than others. However, having one or more several risk factors

does not necessarily mean one will develop a particular disease such as common pregnancy complications. Common pregnancy complications may be associated with some socio-demographic factors such as age, parity, marital status, occupation, ante-natal booking status and literacy status (WHO, 2010).

Risk is also described as hazard, or chance of developing a disease or complications during or after treatment (Barbara, 2001). Hornby (2011) opined that risk is hazard, change of or bad consequences, exposure to danger; risk connotes exposure to damage. Furthermore, risk factor according to Barbara is a factor when added to others increases the likelihood of developing diseases or complications. Similarly, Katwijk and Peeters (2008) explained that risk factor of pregnancy complications is the increased chances of pregnant women developing common pregnancy complications. Pregnant women in developing countries such as Nigeria are often at risk of developing common pregnancy complications. Risk factors of pregnancy complications contribute to increased maternal morbidity and mortality resulting from common pregnancy complications.

According to Abanobi (1991), risk factor is part of an aetiological paradigm which posits that disease occurrence never depends on single isolated causes but rather develop as a result of several intricate inter-relationship of several antecedents called risk factors, which may be appropriately conceptualize as a web. Abanobi further explained that these risk factors are derived from the person affected, as well as from the environments of the individuals. Concomitantly, strategies for the amelioration of diseases tend to focus on these multiple factors. Rothman (2012) noted that pregnant women who are at risk of common pregnancy complications may not achieve successful pregnancy outcome. Such risk factors that can affect the pregnant women as enumerated by Katwijk and Peeters include age, birth intervals, literacy status, and previous history of any medical condition, as well as occupation, marital status, lifestyle and religion. In this study, the researcher focused on age,

parity status, occupation, literacy status, marital status and ante-natal booking status as independent variables of interest and risk factors as they affect pregnancy complications among pregnant women in Owerri Capital Territory, Imo State.

Theoretical Framework

Health Belief Model

One of the models associated with healthy decision and health promotion is health belief model. It aims at critically evaluating the factors responsible for human behaviour as it relates to an individual's health. The health belief model (HBM) was developed in the 1950s to explain preventive behaviour to utilization of health services. The tenets of HBM according to ESiet, Philliber and Philliber (1999) was derived from psychological and behavioural theory with the foundation that the two components of health-related behaviour are the desire to avoid illness, or conversely get well if already ill; and the belief that a specific health action will prevent or cure illness. According to Janz and Becker (2000), the health belief model (HBM) was one of the first, and remains one of the best known social cognition models. It is a health behaviour change and psychological model developed by Irwin M. Rosenstock in 1966 for studying and promoting the utilization of health services. The model was revised by Becker and colleagues in the 1970s and 1980s. Subsequent amendments to the model were made in 1988, to accommodate evolving evidence generated within a community about the role knowledge and perceptions play in personal responsibility (Glanz, Lewis & Rimer, 2002).

Originally, the model was designed to predict behavioural response to the treatment received by acutely or chronically ill patients. However, but in more recent years, the model has been used to predict more general health behaviours. Rosenstock, Strecher and Becker, (1994) posited that the HBM suggests that a person's belief in a personal threat together with

his/her belief in the effectiveness of the proposed behaviour will predict the likelihood of that behaviour.

Health Belief Model has been applied to a broad range of health behaviours and subject populations. According to Okafor (2011), health behaviour is the central concern of health education and health promotion and usually the crucial criterion variable in practically all health education intervention assessments. HBM is adequate and appropriate in this study to explain how a pregnant woman can achieve positive health for herself and the unborn baby in order to reduce the prevalence of common pregnancy complications. Broad areas can be identified in Health Belief Model: these are perceived susceptibility, perceived benefits and perceived barriers (Cobb & Kasi, 2006); preventive health behaviours, which include health-promoting (example diet, exercise) and health-risk behaviours (example smoking). There are six constructs of the HBM (Becker, 1999; Cockerham, 2001 & Rosenstock, 1974). The constructs were developed as the original tenets of the HBM.

Perceived susceptibility refers to a person's subjective perception of the risk of acquiring an illness or disease (Becker, Rosenstock, & Stretcher, 1994). There is a wide variation in a person's feelings of personal vulnerability to an illness or diseases. For positive health behaviour of the subjects (pregnant women), efforts should be made to help them not only never to under-estimate their own susceptibility to any common pregnancy complications but also to see themselves in the level of high susceptibility. If this happens, the pregnant women will be in a position to avoid some common pregnancy complications.

Perceived severity refers to a person's feelings on the seriousness of contracting an illness or disease (or leaving the illness or disease untreated). There is wide variation in a person's feelings of severity, and often a person considers the medical consequences (example death, disability) and social consequences (example family life, social relationships) when evaluating the severity. In health education, the individual's perception of the seriousness of

the threat is an important motivator for a positive healthy decision and pattern of healthy behaviour. At this point, the threatened person is most likely to experience a desire to protect himself/herself against the threat. But in order to do something about it, he/she must perceive some actions that he/she believes will provide him/her with such protection and that he/she sees it as one that he/she is able to take. Pregnant women should be encouraged to see the seriousness of threat of common pregnancy complications. If this is achieved, it will be an important motivator for them to develop positive attitude towards achieving good pregnancy outcome through regular antenatal visits, acceptance of family planning and seeking prompt medical attention during emergency situations. Health education of pregnant women on the need for developing positive attitude towards preventive measures of pregnancy complications will be used by health educators. Such areas of emphasis include regular antenatal visits, good nutrition, prevention of malaria through the use of long lasting insecticide bed treated net (LLITN), acceptance of family planning and others. Health education of pregnant women by health workers will ensure that pregnant women regard any threat to health such as pregnancy complications as urgent and one that requires immediate and adequate attention.

Perceived benefits refer to a person's perception of the effectiveness of various actions available to reduce the threat of illness or disease (or to cure illness or disease). The course of action a person takes in preventing (or curing) illness or disease relies on consideration and evaluation of both perceived susceptibility and perceived benefit, such that the person would accept the recommended health action if it was perceived as beneficial. Health education in form of health talks and practical demonstration will therefore be used to help the subjects develop positive health attitude towards achieving good pregnancy outcome. Sometimes, the action that the person perceives as effective and available may be easy and convenient. But on the other hand, it may be inconvenient,

unpleasant, expensive, painful or otherwise very undesirable. If such negative traits seem to outweigh the presumed benefits to his health, he/she may choose some other less unpleasant actions or may not do anything. Adopting health education, some communication skills and strategies in health education would help pregnant mothers to regard any pregnancy complications as threat to health, urgent and one that requires immediate attention to reduce maternal morbidity and mortality resulting from common pregnancy complications.

Perceived barriers refer to a person's feelings on the obstacles to performing a recommended health action. There is wide variation in a person's feelings of barriers, or impediments, which lead to a cost/benefit analysis. The person weighs the effectiveness of the actions against the perceptions that it may be expensive, dangerous (example, side effects), unpleasant (example, painful, time-consuming), or inconvenient. In health education, according to Cooke and Romweber (2002), efforts are made to help recipients make healthy decisions through some form of persuasive communications directed towards increasing the salience of beliefs about severity of and susceptibility to health problems and the benefits of the recommended treatment or actions while minimizing barriers. Health education adopted by health workers to create awareness and enlighten pregnant women on occurrence of common pregnancy complications, will try as much as possible to help pregnant women understand the severity of common pregnancy complications and see themselves as highly susceptible to such health problems.

Self-efficacy is one of the original constructs that was developed as the original tenets of Health Belief Model. It was propounded by Ajzen and Fishbein in 1974. Bandura (1994) defined Self-efficacy as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy explains how person's beliefs, personal competence and effectiveness make him or her accomplish a given task or how competent one feels to do something. It is a person's sense of

being able to deal effectively with a particular task (Woolfolk, 2010). Bandura (1986) suggests that predictions about possible outcomes of behaviour are critical for learning because they affect goals, efforts, persistence, strategies and resilience.

Furthermore, Rosenstock, et al. (1994) described self-efficacy as the level of a person's confidence in his or her ability to successfully perform a specific behaviour. It directly relates to whether a person performs the desired behaviour.

In health education, one of the goals is to make people to be competent in taking care of their health. Self-efficacy has been developed to take care of confounding variables that will help make people take effective and healthy decisions and promote their health. The aim of self-efficacy is the people's belief in their abilities to perform a specific behaviour which, according to Lawrence and Mcleory (1986), influence the following:

(a) The choice of behaviour and the situations that will be avoided or attempted, such as attempts to reduce common pregnancy complications through regular antenatal visits by pregnant women.

(b) The effort to spend time attempting a specific task such as regular antenatal visits. More energy is often devoted to a task when it is perceived that it will be successful, such as adequate rest, responding quickly to medical emergencies by seeking urgent medical care in of emergency situation.

(c) How long a pregnant woman will persist even when facing difficulties such as maintaining normal blood pressure through regular blood pressure checks and taking prescribed medications regularly. In this study, pregnant women will be encouraged to know how to do behaviour and want to do it. If pregnant women are encouraged to know how to do behaviour and want to do it, this will encourage them to practice positive health behaviour such as eating balanced diet, observing adequate rest and sleep, avoiding strenuous work and

reporting to the doctor any abnormal signs observed during regular antenatal care during pregnancy.

Theoretical Studies

Some Pregnancy Complications and Consequences

According to United Nation Fund Population Agency-UNFPA (2007), maternal morbidity remains abysmally high in the developing world. It is estimated that approximately 40 percent of all women who give birth annually develop complications, and 15 percent of pregnant women worldwide develop serious complications that could be potentially fatal. One in every four pregnant women in developing world experience acute or chronic symptoms related to pregnancy (World Bank, 1999). Fortney and Smith (1996) stressed that even larger number, 58-80 percent of pregnant women in Bangladesh, Egypt, India, and Indonesia were found to suffer acute morbidity, while 8-29 percent experienced chronic morbidities related to mortality. Thus, acute or chronic morbidity related to pregnancy complications is common among women in developing countries such as Nigeria. United Nations (2002) stated that every year, over half a million women die in pregnancy and childbirth around the world.

Equally distressing is the fact that worldwide, the ratio of maternal deaths to live births (the maternal mortality ratio) has remained essentially static during this period. Moreover, the regions with the poorest maternal health 30 years ago - sub-Saharan Africa and South-Central Asia - have progressed the least. Unfortunately, Ezechi, Fasuba and Ogunniyi (2009); Otoide, Okonta, Okali, and Twomey (2008) have stated that in Nigeria, estimates of maternal mortality resulting from common pregnancy complications exceed 1,000 per 100,000 live births, with evidence of a rising trend over the last decade. The high maternal and perinatal mortality rates in Nigeria continue to be issues of concern as they are indicators of the poor state of health services with the implication that relevant health-related Millennium Development Goals may not be achieved in the country. Nonetheless, there are

success stories where poor maternal health has been turned around. Egypt, Honduras, Malaysia, Sri Lanka, Thailand, and parts of Bangladesh all halved their maternal mortality ratios over the last several decades (Graham & Ronsmans, 2006), suggesting that MDG 5, which targets a 75 percent reduction in maternal mortality, is achievable, provided that there is political will and financial investment.

Furthermore, pregnancy and childbirth-related complications according to UNICEF (1993) are the leading causes of maternal mortality and morbidity in Bangladesh. The five major causes of maternal deaths are haemorrhage, eclampsia, unsafe abortion, sepsis, and obstructed labour. In addition to the high risk of death associated with pregnancy and childbirth, women in Bangladesh are at even greater risk because of the high-fertility norm. Poverty, social and cultural prejudices, gender-based violence, lack of education and less access to essential health-care facilities also contribute to poor maternal health.

Also obstetric death accounted for about 76% of maternal death between 1976 and 2005 (Chowdhury, 2009 & Shahidulla, 1995). Chowdhury and Shahidulla noted that the proportion of obstetric death varies from other causes, in particular, infectious diseases (HIV and AIDS and Pulmonary Tuberculosis), non communicable diseases and external causes such as accident and violence. From the foregoing, it is obvious that pregnancies present numerous physiological changes which can affect a pregnant woman. Some of these health conditions that existed before the onset of pregnancy are made worse by pregnancy and is life threatening. It requires that women and their families should know which ones are dangerous. They should also know what to expect and the appropriate action to take in such situations. The common pregnancy complications discussed in this study are only those identified in the women's clinic records and they include:

Haemorrhage

Haemorrhage or bleeding in pregnancy is a serious complication where pregnant women lose 500mls of blood or more during pregnancy or child birth. Pregnant women sometimes observe slight bleeding from the vagina in early pregnancy (before 26 weeks). Sabaratan and Wasaran (2009), explained that typical causes of bleeding include implantation bleeding (when the fertilized egg attaches itself to the lining of the womb), an infection in the vagina and threatened miscarriage. Bleeding can also occur in late pregnancy after thirty-six (36) weeks and any slight bleeding occurring during pregnancy must be taken seriously. Sabaratan and Wasaran (2009) advised that such women who have slight bleeding to adopt complete bed rest and also consult a doctor. Such bleeding in pregnancy is called ante partum haemorrhage (Dashe, Mcinter, Ramus & Twiikler, 2009). It is a sign of two possible problems; placenta praevia and abruptio placenta.

Placenta praevia

Placenta praevia according to Sabaratan and Wasaran (2009) is an obstetric complication in which the placenta is partially or wholly attached in lower uterine segment. The placenta is an organ that provides nourishment for the fetus while it is still in the uterus (Francois & Foley, 2007). Amatha and Faiz (2008) explained that placenta praevia occurs approximately one in every 250 births and that one-third of all ante-partum haemorrhage occurs due to placenta praevia. Albert, Hobbins and John (2006) added that in placenta praevia, the placenta becomes abnormally situated when it attaches itself in the lower segment of the uterus (towards the neck of the uterus). Sabaratan and Wasaran, also noted that ante-partum haemorrhage, post-partum haemorrhage and puerperal sepsis are serious maternal complications. However, Bloom, Cunningham and Leveno (2010) stressed that intra-uterine growth retardation (IUGR), premature delivery are fatal complications of pregnancy resulting from haemorrhage during pregnancy.

Anatomically, a normal placenta should be situated in the upper segment of the uterus. This ensures that when the fetus grows and uterus expands, it does not allow the detachment of the placenta. Invariably when the placenta is abnormally situated, as the fetus grows and the uterus begins to expand, it causes the abnormal detachment of the placenta resulting to antepartum haemorrhage. According to Sabaratan and Wasaran (2009), this type of placental implantation occurs one in every 200 deliveries and occurs more often in women who have scarring of the uterine wall from previous pregnancies, such as multiparous women, fibroids or other abnormalities of the uterus, or previous uterine surgeries. Sabaratan and Wasaran identified some of the symptoms of placenta praevia to include vaginal bleeding that is bright red and not associated with abdominal tenderness or pain. Diagnosis is confirmed by performing a physical examination and an ultra sound. Depending on the severity of the condition and the stage of pregnancy, modification of activities or bed rest may be ordered. The baby usually has to be delivered by caesarian section, to prevent the placenta from detaching early and depriving the baby of oxygen during delivery that may result to the death of the baby.

Placenta Abruptio

Bleeding that occurs during pregnancy is a dangerous sign that is commonly experienced by pregnant women. The abnormal attachment of the placenta results to bleeding which might lead to maternal deaths. This abnormal detachment might be placenta abruptio. Sabaratan and Wasaran (2009) posited that Placenta abruptio is referred to as an abnormal placenta and causes bleeding in pregnancy. It occurs when the placenta normally, situated at the upper cavity of the uterus, separates from the uterus before the fetus is delivered. In a normal pregnancy, the placenta remains attached to the uterine wall until after the fetus is delivered. Francois and Foley (2007) explained that this abnormal condition affects about one in every 150 births in very severe forms and can cause the death of the fetus. This

according to Houry and Salhi (2009) occurs in approximately one in every 500-750 deliveries. Death of the mother from placental abruption is very rare and infants who survive a birth with the condition have a 40-50 percent chance of experiencing complications.

The cause of placental abruption, according to Francois and Foley, is often unknown and difficult to diagnose. Some common causes of the condition include injury to the abdomen from an accident or a fall, sudden decrease in the volume of the uterus from significant loss of amniotic fluid or from the delivery of a first twin, abnormally short umbilical cord and acute development of high blood pressure. However, Blackwell and Malden (2006) identified a number of risk factors to include pregnancy, high blood pressure, diabetes, multiple previous deliveries (twins, triplets), cigarette smoking, heavy alcohol use, cocaine use, and malformations of the uterus and placenta. Blackwell and Malden noted that some of the symptoms of placental abruption include bleeding from the vagina, severe pain in the abdomen or back, rapid contractions and tenderness of the uterus. According to Houry and Salhi (2009), the consequences of abruption placenta depends on the severity of the bleeding, the mother may experience a drop in blood pressure, followed by symptoms of organ failure as the organs are deprived of oxygen as a result of shock. Houry and Salhi emphasized that sometimes, there is no visible vaginal bleeding, instead, the bleeding is trapped behind the placenta, or there may be bleeding into the muscles of the uterus.

In terms of prevention of placental abruption, Francois and Foley (2007) stressed that some of the causes of placental abruption are preventable. These include avoidance of drugs especially cocaine, alcohol and smoking during pregnancy, receiving proper and regular prenatal care throughout the pregnancy. Francois and Foley further stressed that pregnant women with conditions known to increase the risk of placental abruption should be carefully monitored for signs and symptoms of the complication. This can only be achieved through regular ante-natal visits to make early diagnosis so that appropriate medical intervention can

be instituted. In this study placenta praevia and abruptio placenta are regarded as placenta problems.

Hypertension

High blood pressure is a common pregnancy complication that can have adverse effect on the health of the mother and baby. According to Wilson and Royle (2002), it is an elevation of blood pressure over 140/90mmHg present on two or more occasions. It occurs when pressure exerted by blood on the walls of arteries is elevated and sustained in an individual. It is also referred to as hypertension (Magloire, 2011). Magloire categorized hypertension into two; essential hypertension and secondary hypertension.

Essential hypertension is an existing medical condition experienced by pregnant women. Ross and Wilson (2010) opined that it is an elevation of blood pressure of over 140/90 mmHg present on two or more occasions prior to the 20th week of pregnancy and which is not due to any apparent pathological condition. Magloire (2011) and Ross and Wilson, maintained that the disease is of hereditary origin and is influenced by emotional and environmental factors. Magloire explained that essential hypertension is common among women over the age of 30 years and more severe in younger women below 17 years of age and emphasized that in essential hypertension, the blood pressure is raised much above the normal level before the onset of pregnancy. Essential hypertension is characterized by high blood pressure with no known identifiable causes and it can result to an increase in maternal morbidity. Furthermore, Diana and Hamilton (2011) pointed out that when the blood pressure is very high, such as 160/100mmHg or more, the woman may develop albuminuria and frank pre-eclampsia may set in.

Hamilton and Diana further explained that in some cases a very high level of blood pressure causes cerebral haemorrhage, concealed abruptio placenta and acute heart failure. Hamilton & Diana noted that the effect of essential hypertension on the fetus may be serious,

leading to incidence of abortion, intra-uterine death and pre-mature onset of labour. Abbound (2008) and Clayton (2009) added that maternal risks associated with essential hypertension include: superimposed pre-eclampsia, deterioration of renal function, cerebrovascular accidents, congestive heart failure and haemorrhage secondary to abruptio placenta. This might increase maternal morbidity and mortality among pregnant women in Owerri Capital Territory, Imo State.

According to Abbound (2008), secondary hypertension is described as a disease whose causes are identifiable. Abound explained that secondary hypertension can be caused by kidney diseases, birth control pills and can be pregnancy induced, that is, occurring during pregnancy. Secondary hypertension can occur before or during pregnancy. Blackwell and Malden (2011) noted that gestational hypertension occurs during pregnancy, and that if a woman develops hypertension after 12 weeks of pregnancy, it is called gestational hypertension, such hypertension usually resolves after delivery. Hypertension can develop before 20 weeks of pregnancy or even last for 12weeks after delivery. This is known as chronic hypertension. Blackwell and Malden emphasized that if in addition to hypertension, a pregnant woman passes excess protein in urine after 20weeks of pregnancy it can be referred to as pre-eclampsia which can be fatal.

According to Magliore (2011), complications of hypertension during pregnancy are numerous and life threatening. Magliore listed the complications to include retardation of growth of the baby in the womb that leads to low birth weight. Magliore explained that the placenta may separate from the uterus prematurely, leading to heavy bleeding and also drastic drop in oxygen supply to the baby. Premature delivery and other life threatening complications can also occur. In agreement with the above explanations, Garner and Grimes (2009) emphasized that if the blood pressure becomes normal after pregnancy, the woman is still at increased risk of hypertension and cardiovascular diseases during subsequent

pregnancy. In line with adopting good antenatal and regular medical checkup as stressed by Magliore (2011), once a woman is pregnant, it is important that she undergoes regular medical check-up to make sure that she keeps the blood pressure checks. This can be achieved through early ante-natal registration, prompt diagnosis, adhering strictly to anti-hypertensive drugs that are not harmful to the fetus. This ensures prevention of pre-eclampsia among pregnant women. Early delivery by caesarian section may be indicated if there are dangerous complications to save the life of the women and the baby.

Obstructed Labour

Obstructed labour is one of the major common pregnancy complications in developing countries that results to maternal morbidity and mortality. Obstructed labour, also known as dystocia is when, even though the uterus is contracting normally, the baby does not exit the pelvis during child birth due to the fact that the birth canal has been physically blocked (WHO, 2008). In other words, it is inability of the pelvis to accommodate and allow the baby to pass through, to the exterior (outside) as a result of physical blockage. Shawqi, Ohkuch and Tsul (2014) opined that labour is obstructed when the presenting part of the fetus cannot descend into the birth canal, despite strong uterine contractions. Shawqi, et al further explained that the most frequent cause of obstructed labour is a mismatch between the fetal head and the mother's pelvic brim. (cephalo-pelvic disproportion) and lamented that neglected obstructed labour is a major cause of both maternal and new born morbidity and mortality. In Africa and Asia, obstructed labour affects between two and five percent of deliveries, and in 1990, it resulted in 29,000 maternal deaths while in 2013, 19,000 deaths were recorded (about 80%) of all deaths related to pregnancy (WHO, 2008). WHO emphasized that most deaths due to obstructed labour occur in developing world such as Nigeria and it was estimated to be the most disabling of all maternal conditions.

A large or abnormally positioned baby, a small pelvis (contracted pelvis), locked twins, pelvic tumours, have been enumerated by WHO as the main causes of obstructed labour. WHO also listed some of the determinants of obstructed labour and explained that the likelihood of obstructed labour can be anticipated if the mother is short and /or has had prior difficult labour, small stature, previous caesarean section, nulliparity and it is also common in adolescence as the pelvis may not have developed adequately during this stage of development.

Obstructed labour can result in maternal complications as well as affect the baby. Shawqi, et al. (2014) mentioned maternal complications to include intra-uterine infection following prolonged rupture of membranes, trauma to the bladder and rectum (vesico-vaginal fistula and recto-vaginal fistula), ruptured uterus with consequent haemorrhage, shock and even death. Shawqi, et al. stressed that in the infant, neglected obstructed labour may cause asphyxia (severe respiratory distress) leading to still birth, brain damage, low apgar score or neonatal death.

However, obstructed labour may require caesarean section or instrumental delivery and keeping the women hydrated (WHO, 2008). From the above scenario, preventive measures can save the life of both the mother and baby through regular ante-natal care, prompt medical attention and easy access to health facilities. According to WHO, labour must be monitored carefully and systems to manage or refer complications must be available.

Gestational Diabetes

Gestational diabetes is a temporary (in most cases) form of diabetes, a common pregnancy complication in which the body does not produce adequate amounts of insulin to deal with sugar during pregnancy. It is one of the major complications that affect pregnant women. According to Metzger and Coustan (2010), gestational diabetes is defined as any degree of glucose intolerance with onset or first recognition during pregnancy. The frequency

of gestational diabetes varies widely. It occurs in between 5 and 10 percent of all pregnancies (between 1-14% in various studies) (American Diabetes Association, 2004). It usually begins in the 6th or 7th month of pregnancy (weeks 24 & 28) and usually disappears shortly after delivery. This can be developed by any woman during pregnancy. However, there are certain factors that can put a woman more at risk, such as; maternal age - a woman's risk factors increase as she gets older (especially for women over 35 years of age,) obesity, family history of diabetes, having previously given birth to a very large child (over 4.5kg), having previously given birth to a stillborn child or a child with a birth defect, having too much amniotic fluid, history of gestational diabetes in a previous pregnancy and high blood pressure (Ross, 2006). In addition to this, statistics show a double risk of gestational diabetes in smokers.

Furthermore, Ajukoye (2010) noted that women with gestational diabetes exhibit no symptoms, and enumerated possible symptoms to include increased thirst, increased urination, fatigue, nausea and vomiting, others are bladder infection, yeast infections and blurred vision. Complications of gestational diabetes, if untreated or poorly controlled, according to Hyperglycemia and Adverse Pregnancy Outcome (2008) can cause the baby to have macrosomia (excessive weight at birth exceeding 4.5 kilograms), develop hypoglycemia (low blood sugar) at birth, jaundice (yellow skin), respiratory distress syndrome (breathing difficulties), die after week 28 of pregnancy (called a stillbirth) and die in infancy. Boldwein (2007) suggested that a woman with diabetes needs careful supervision throughout pregnancy to check the amount of sugar in her blood. Finally, Boldwein emphasized that with correct diet and proper care, regular attendance of antenatal visits by pregnant women, serious complications can be avoided or treated.

Ectopic Pregnancy

Ectopic pregnancy is another pregnancy complication. The word ectopic is derived from the Greek word *ektopos*, meaning out of place, and refers to the implantation of a fertilized egg in a location outside of the uterine cavity, including the fallopian tubes, cervix, ovary, cornual region of the uterus, and the abdominal cavity (Okenwa, 2012). This abnormally implanted gestation grows and draws its blood supply from the site of abnormal implantation. As the gestation enlarges, it creates the potential for organ rupture because only the uterine cavity is designed to expand and accommodate fetal development. Ectopic pregnancy can lead to massive haemorrhage, infertility, or death.

Ectopic pregnancy is also known as tubal pregnancy, cervical pregnancy or abdominal pregnancy (Sepilian & Wood, 2007). The symptoms include lower abdominal or pelvic pain, mild cramping on one side of the pelvis, amenorrhea (missed period), abnormal vaginal bleeding (usually spotting), breast tenderness, nausea and low back pain (Smith, 2012). If the area of the abnormal pregnancy ruptures and bleeds, symptoms may get worse. There may be severe, sharp and sudden pain in the lower abdominal area, feeling faint or actually fainting, referred pain to the shoulder area and the most common complication is rupture with internal bleeding that leads to shock.

According to Smith, infertility occurs in 10-15 percent of women who have had an ectopic pregnancy. Katwijk and Peeters (2008) noted that this complication can be prevented by avoiding conditions that might scar the fallopian tubes. The risk of ectopic pregnancy may be reduced through avoiding risk factors for pelvic inflammatory disease (PID), such as multiple sexual partners, intercourse without a condom, and sexually transmitted diseases (STDs), but early diagnosis and treatment of STDs and early diagnosis and treatment of salpingitis (inflammation of the fallopian tube) and pelvic inflammatory disease prevent later problems during the reproductive period of child bearing women.

Anaemia

Anaemia in pregnancy, according to World Health Organization (WHO, 2008) is an important public health problem worldwide, WHO estimates that more than half of pregnant women in the world have a haemoglobin level indicative of anaemia (< 11.0gm/dl). The prevalence according to WHO may however be as high as 56-61 percent in developing countries. Women often become anaemic during pregnancy because the demand for iron and other vitamins is increased due to physiological burden of pregnancy. The inability to meet the required level for these substances either as a result of dietary deficiencies or infection gives rise to anaemia (Broek, 2009).

Unfortunately, many women, according to WHO, start pregnancy with some degree of anaemia. Anaemia can be caused by a diet that is low in iron-rich foods such as liver, egg and leafy green vegetables. Foods with vitamin C (oranges, paw-paw, and mangoes) help the body absorb iron from other foods. Other causes include presence of some parasites like malaria parasite, hookworm, or schistosome in the blood or body, which may reduce the amount of iron in the body. Lack of child spacing which does not allow the mother recover physically from previous pregnancy before getting pregnant again has a negative effect such as anaemia. Bennette and Brown (2009) explained that sickle cell disease and heavy menstrual periods may also lead to anaemia over time, since women lose iron during menstruation each month.

Bennette and Brown highlighted some of the signs of anaemia to include; feeling tired and weak most of the time, unusual pale skin on the inside of the eyelids (conjunctivae), gums and tongue, as well as the palms of the hands and the soles of the feet. According to Bennette and Brown, if anaemia is not identified and properly treated early, it can result to heart failure, miscarriage, or premature labour and that the ways to prevent this disease is by eating diet rich in iron and vitamin, and allowing enough time between pregnancies (two or

three years). WHO (2008) added that prevention of malaria and other diseases will also help these mothers reduce cases of pregnancy complications and maternal death.

Malaria

Malaria is an endemic disease in the tropics and another common pregnancy complications that affect the pregnant women (Ikeogu, 2012). It is a common disease in many parts of African that is transmitted through mosquito bites. Malaria infection during pregnancy can have adverse effects on mother and fetus, resulting in maternal anaemia, fetal loss, premature delivery, intrauterine growth retardation, and delivery of low birth-weight infants (<2.5kg). It is a common health problem for women in their first and second pregnancies and for women who are HIV-positive in Nigeria. In sub-Saharan Africa region, malaria infection is estimated to cause 400,000 cases of severe maternal anaemia and 75,000-200,000 infant deaths annually. Malaria contributes significantly to maternal mortality and causes an estimated 10,000 deaths per year (Center for Disease Control & Prevention, 2010). The problems that malaria infections cause differ somewhat by the type of malaria transmission area: stable (high) or unstable (low) transmission areas. Owerri Capital Territory can be regarded as a high transmission area because of the topography of the areas, densely populated nature of the place, as well as poor drainage of flood in the area. For this reason, pregnant women in Owerri Capital Territory may suffer malaria with its adverse health effects on the mother and baby.

According to Dunn (2011), in high transmission areas, women have gained a level of immunity to malaria, that notwithstanding, during pregnancy, malaria infection is more likely to result in severe maternal anaemia and delivery of low birth-weight infants. Dunn further explained that in low transmission areas, women generally do not develop immunity to malaria. Murphy (2010) enumerated some of the symptoms of malaria as high fever, severe headaches and sometimes vomiting, and recommended intermittent preventive treatment

(IPT) with antimalarial drugs (prophylaxis) and use of long lasting insecticide-treated bed nets (LLITN) for prevention and control of malaria.

Pre-eclampsia

Pre-eclampsia according to Kluffo (2010) is a disorder of pregnancy characterized by hypertension (high blood pressure) and proteinuria (excessive protein in the urine), often including oedema (accumulation of water) or swelling of the feet and the face occasionally involving thrombocytopenia (low platelets) or liver function abnormalities. It is also known as toxæmia in pregnancy. Kluffo explained that pre-eclampsia occurs in as many as 10 percent of pregnancies, usually in the second or third trimester, after 32 weeks gestation. Kluffo stressed that pre-eclampsia can occur any time after 20 weeks of gestation and up to six to eight weeks postpartum (after delivery).

Pre-eclampsia is more common in women who are pregnant for the first time and it frequently drops significantly in second pregnancies (Cotran, Collins, & Kumar, 2009). If the condition is not properly treated, the patient may develop eclampsia, a potentially fatal condition involving coma and convulsions. According to Adams (2010), five percent of all patients with pre-eclampsia progress to eclampsia. Adams further explained that pre-eclampsia can range from mild to severe, and it can progress slowly or rapidly; in mild cases, a woman may not complain of any sign of sickness, apart from swelling of the feet, ankles, hands and face. If pre-eclampsia is not treated properly and promptly, it can result in kidney damage. WHO (2010) noted that the baby may not receive enough oxygen and food, and may be small and weak. WHO enumerated the symptoms of severe pre-eclampsia that can develop during the last weeks of pregnancy as headache, blurred intolerance for bright light, nausea and vomiting, and salt and water retention. WHO stressed that it may progress to eclampsia, the symptoms of which are convulsions (seizures) and sometimes unconsciousness. WHO concluded by recommending management strategies of pre-

eclampsia to include fetal assessment and earliest safe delivery. According to CDC (2010), frequent monitoring of maternal blood pressure, urinary protein excretion, weight change, and other symptoms are mandatory during antenatal visits among the pregnant women.

Pre-mature Rupture of Membranes

Premature rupture of membranes (PROM) is the rupture of the fetal membranes that signifies the onset of labour. In most cases, this occurs near term (due for delivery), but when membrane rupture occurs before 37 weeks gestation, it is known as preterm premature rupture of membranes (PPROM) (Meis, Ernest & Moore, 2009). Meis, et al., noted that PPROM complicates 3 percent of pregnancies and leads to one third of preterm births. It increases the risk of prematurity and leads to a number of other perinatal and neonatal complications such as respiratory distress syndrome, neonatal sepsis, umbilical cord prolapse, placental abruption, including 1 to 2 percent risk of death. Meis, et al. further noted that PPROM is not a contraindication to vaginal delivery. Appropriate evaluation and management are important for improving neonatal outcomes. Therefore, health professionals caring for pregnant women should be versed in the management of PPROM because rapid diagnosis and appropriate management can result in improved outcomes.

Preterm Labour

Premature or preterm labour according to Ross and Wilson (2010) is defined as the presence of uterine contractions of sufficient frequency and intensity to effect progressive effacement and dilation of the cervix when a woman goes into labour before 37 weeks of pregnancy, or three weeks before her due date. Ross and Wilson explained that infants born as a result of premature labour suffer significant morbidity as a result of immaturity and that babies born after 28 weeks gestation have a higher chance of survival (95-98%). On the other hand, Ross and Wilson noted that babies born after 24 weeks of gestation have a 55-57 percent chance of survival and stressed that accurate diagnosis of pre-term labour can allow

for the prevention or delay of pre-term birth where possible, and where this is not possible, early provision can be made to provide optimal support for the immature infant.

Macdonald (2011) listed the symptoms to include four or more contractions per hour, strong uterine contractions, constant menstrual-like cramping, low back pain, pelvic pressure, watery mucous or bloody vaginal discharge, or bleeding or spotting after 3 months into the pregnancy. Macdonald added that worldwide, the greatest risk factor is infection, mainly from malaria and HIV and AIDS. Steer and Flint (2008) mentioned other factors to include multiple pregnancy, intrauterine growth retardation, maternal stress, heavy physical work, and previous premature labour, prolonged bleeding in early pregnancy, maternal cardiac disease, maternal age less than fifteen, lower socio-economic status, cigarette smoking during pregnancy and cervical incompetence. In terms of prevention, Steer and Flint (2008) suggested that addressing social factors such as poverty and lifestyle issues like smoking would help to promote a significant reduction in the incidence of premature labour. Also the detection and treatment of asymptomatic infections such as bacterial vaginosis has been known to be effective in preventing pre-term labour.

Sexually Transmitted Infections

Sexually transmitted infections and diseases are some of the common pregnancy complications pregnant women experience worldwide. Michaelabrams, Jordan and Small (2008) lamented that each year, about 2.5million pregnant women suffer from sexually transmitted infections (STIs). Human immuno virus HIV and AIDS is one of the sexually transmitted infections that can pass from the mother to the child and can result to the death of the mother and the baby unless treatment is commenced during pregnancy. Andrews (2008) opined that sexually transmitted infections (STIs) sometimes referred to as a sexually transmitted disease(STDs) is a bacterial or viral illness that one can get from having genital, oral or anal sex with an infected partner. Andrews emphasized that sexually transmitted

diseases can have serious health consequences on pregnant women and the unborn baby. Andrews explained that sex is not the only way some of these infections are transmitted, for example, somebody can also become infected with hepatitis B virus, a virus that causes Hepatitis B infection, a sexually transmitted infection in which the causative organism can survive outside the body for at least a week. Hepatitis B virus infection, HIV and AIDs can infect individuals through contacts with contaminated needles or other sharp instruments contaminated with the blood or open sores of an infected person, or even by sharing household items like toothbrush or razor blade.

Naidu, Madhav and Mackay (2007) revealed that sexually transmitted infections during pregnancy can pass to a baby through the placenta or be transmitted during labour and delivery or when the membrane ruptures. Naidu, et al. stressed that these infections can affect the new born and can be life threatening. Naidu, et al. further explained that some of these sexually transmitted diseases and infections may lead to long-term irreversible health problems on the baby and emphasized that these infections increase the risk of miscarriage, preterm premature rupture of membranes (PPROM), preterm birth, uterine infection and still birth.

Ramjee, Rutherford, Tholandi and Wilkinson (2009) listed some of the most common sexually transmitted infections as follows; syphilis, human papilloma virus (HPV), Chlamydia, Genital herpes, Gonorrhoea, HIV and AIDS, Trichomoniasis which have ravaging effects on reproductive age women. Williams in Butler (2008) suggested ways to detect and treat STIs during pregnancy. Williams advocated screening by the medical practitioner for these infections during the first ante-natal visit. Williams emphasized that this can be achieved through history taking, finding out whether the woman has multiple sexual partners, shared needles for drug use or tattooing; if a woman is at high risk, and ensuring that pregnant woman will be screened again in third trimester.

MacDonald (2011) enumerated some of the symptoms of sexually transmitted diseases as bumps, sores, or warts near the mouth, anus, penis or vagina, skin rash with or without pain, painful micturition, painful sexual intercourse, itching near the penis or vagina, discharge from the penis or vagina among others. However, Centre for Disease Control and Prevention (2008) recommended that all pregnant women be screened for HIV, hepatitis B-virus disease (HBV), Syphilis and Chlamydia even if the pregnant woman is not in a high risk relationship as some of them can be asymptomatic. CDC further suggested that women be screened for HIV and AIDS, gonorrhoea and hepatitis (if they have risk factors) to avert common pregnancy complications and institute prompt medical care.

Michaelabrams, Jordan and Small (2008) highlighted some adverse effects of sexually transmitted infections on the baby as; blindness, joint infections, or a life threatening blood infection, eye infection, pneumonia and prematurity. Michaelabrams, et al. concluded that the brain, eyes, ears, heart, skin, teeth, and bones are affected. Goldenberg (2008) observed that pregnancy can be joyous but stressful and confusing sometimes, with many new health concerns to occupy a woman's thought. However, Williams (2008) in his contributions emphasized the need to follow certain steps to secure effective and safe treatment for a sexually transmitted infection or disease during pregnancy. According to Williams, pregnant women should adopt screening test for STIs, follow the instructions of a health care professional for medication or treatment regimen, maintain an overall good health status such as attending regular prenatal care visits and protecting oneself with safe sex practices.

Risk Factors of Common Pregnancy Complications

There are many risk factors that can be associated with common pregnancy complications. Ahmed and Shaa (2009), Magloire (2011) and Moscrop (2013) identified age, parity, heredity, location, level of education, occupation, birth interval and marital status as well as religion as factors associated with common pregnancy complications. In support of the above assertions, Ramany (2008) mentioned age, obesity, location and lifestyle as risk-factors to common pregnancy complications. Life style, hormonal imbalance, birth intervals, marital status, previous history of any medical condition, biological and physical factors predispose women to common pregnancy complications (Garner & Grimes, 2010; MacDonald, 2011 & Moscrop, 2013).

Age as Risk Factor for Pregnancy Complication

Age of a woman during pregnancy is one of the risk factors that might be associated with common pregnancy complications. Bradford, David and Seifer (2009) asserted that human reproduction is profoundly influenced by age. Bradford, et al. maintained that the effect of age on human reproduction is complicated by the numerous physiological changes occurring in women as they age, coupled with powerful environmental and socio-economic conditions exerting external influences on them. Magloire (2011) opined that a disease like essential hypertension is common among mothers who are above 35years of age. Furthermore, WHO (2008) attested that common pregnancy complications vary with age of mothers. Baabian (2010) posited that in the developing countries of the world, age at delivery has a positive association with common pregnancy complications and strongly upheld that women who are below 17years and above 35years are likely to become victims of common pregnancy complications such as gestational diabetes, hypertension and bleeding in pregnancy.

Moscrop (2013) observed that the risk of common pregnancy complications is highest in certain pregnancies in relation to the age of the mother. In support of Baabian, Moscrop affirmed that two specific types of pregnancies that are at risk of common pregnancy complications include pregnancy below 17years and pregnancy at 35years and above. Moscrop observed that pregnant women 35years and above and below 15 years of age have significantly high rate of pregnancy complications. Based on this, the researcher categorized the age of child bearing women in Owerri Capital Territory into three groups 15- 24 years, 25-34 years and 35 years and above.

Kwame, et al. (2010) explained that the age of the mother during pregnancy is a very strong factor that can predispose her to common pregnancy complications, especially when ante natal visits are neglected. Kwame, et al. noted that not all pregnant women run an equal risk of common pregnancy complications within a given social setting and emphasized that some women are more likely to suffer illnesses during pregnancy than others. However, pregnant women are susceptible to malaria infection. Kwame, et al. stressed that the universally significant factor is the woman's age at pregnancy.

Hamilton and Diana (2011) explained that the ideal age for efficient reproductive performances is between 19years and 25years and that woman below 15years and above 30years delivering for the first time, creates problems such as disability and death. Dowey (2008) reported that maternal age of 40years and above is a strong factor to gestational diabetes. Isdor and Rayatu (2011) further stressed that the age risk factor for common pregnancy complications is high among adolescent mothers and those mothers older than 35years; and increases with mothers older than 40years.

Parity

Parity status might be associated with pregnancy complications. Bennette and Brown (2006) defined parity as the number of pregnancies carried to viable gestational age. Parity

status has sub-divisions which have been defined by several authors. In this study, parity is regarded as the number of child birth a woman had, nulliparity means a women who has not been pregnant for the first time, primigravida indicates a women who has given birth to one child, multigravida refers to a woman who has delivered two to four (2-4) children while grand-multigravida is a woman who has given birth to five or more children. Bennette and Brown noted that parity status is a term used to give detailed information about a woman's obstetric history. In Nigeria, many pregnant women have many children due to culture and non-acceptance of family planning. These predispose the pregnant women to common pregnancy complications such as pre-eclampsia, eclampsia, still birth and anaemia. Bennette and Brown agreed with the above assertion and stressed that multi-parous women are at high risk of developing common pregnancy complications such as haemorrhage which can result to the death of the mother.

Bennette and Brown affirmed that the dangers parity pose to child bearing increases with age and after the fourth child irrespective of age. Mothers that are poorly nourished over worked, multiparous with weak muscles and ligaments suffer pregnancy complications. Benneth and Brown concluded by asserting that the younger the better and the fewer the parity, the better. In his contribution, Ogbonna (2005) emphasized that women with first or second pregnancies are not prone to ante partum-haemorrhage but multiparous women are likely to have ante-partum and postpartum haemorrhage which endangers the life of the mother and the baby. WHO (2008) agreed with the above and stressed that multigraividae are at high risk of developing common pregnancy complications such as abnormal attachment of the placenta like placenta praevia, abruptio and other types of abnormal placenta attachment that predispose the woman to excessive bleeding.

Onuzulike (2009) further noted that parity status is associated with level of education, level of income and other socio-demographic factors. Isdore and Rayatu (2011) explained

that parity is associated with social class and that families with high parities do not take common pregnancy complications seriously. Generally, Koshiha (2009) pointed out that families with high parity do not seek for prompt medical care from orthodox health care services because of cost; that grand-multiparous expectant mothers rarely visit health facilities for antenatal care for various reasons ranging from cost of medical care and the belief that they are experienced in child bearing. Garner and Grimes (2010) and Moscrop (2013) reported that epidemic impacts on the general population had greater effects on families whose parity status were higher than in low parity status families.

Other Risk Factors of common Pregnancy Complications.

Occupation

Occupation of the pregnant women might be a significant risk factor that might influence common pregnancy complications. Occupation may refer to a job, a regular activity performed for a payment that occupies one's time (Adler, 2012). Occupation is what one does for a living. According to Koshiha (2009), certain factors such as strenuous work load can help identify women who may be at risk for pregnancy complications. Work that is physically hard requires lengthy standing positions and exposure to toxic chemicals can adversely affect maternal pregnancy outcome. Due to economic reasons pregnant women in Owerri Capital Territory over work themselves to support the family as the cost of living in the area is high and this has adverse effect on their health. Many of these occupations these women engage in do not safeguard them against vulnerability and do not provide access to health care (International Labour Organization, 2010). ILO concluded that there was a significant difference ($P < 0.05$) in the proportion of women who were not gainfully employed (artisans and housewives) when compared with their counterparts who had good jobs that resulted to pregnancy complications. Child bearing age women and pregnant mothers who work in factories are mostly part time workers. The nature of their jobs is such

that these women work longer hours for less pay. Indeed, poor working conditions such as long working hours and lack of adequate weekly and annual rest, in addition to unhealthy, hazardous workplaces as well as lack of social protection, can have negative effects on maternal health (ILO, 2010).

Being gainfully employed is an important factor in earning enough income for the sustenance of households and individuals. Unfortunately, many Nigeria women especially, the childbearing women and pregnant women are not gainfully employed. Many of them work in their husbands' farms and in their homes and are not paid for these services. According to Food and Agriculture Organization (2010), women account for 75 percent of farm labour in sub-Saharan Africa. Many Nigerian women work in the informal sector, work for long hours and earn so little for their labour. According to World Bank (2005), majority of Nigerian women work in agriculture and related activities. They provide well over half of all labour in agricultural production and processing. They also perform much of the rural transport work, carrying on their heads over long distances farm produce, fuel wood and water. These women also work in the informal sector which has been rendered unprofitable due to inflation, lack of patronage from customers and lack of credit facilities due to poverty and patriarchal values. Wherever women work, they earn less than men even when they are doing exactly the same work (Eboiyehi & Muoghalu, 2008). This might be applicable to pregnant women in Owerri Capital Territory, Imo State, Nigeria.

In Nigeria, very few women work in the formal labour force. According to Koshiha (2009), 30 percent of those working in the formal labour force are women and most of these women are in lower positions. In situations where employment positions are few such as in Nigeria, the few vacant positions are given to men. As such, many educated women find it difficult to secure employment (Eboiyehi & Muoghalu, 2008). Furthermore, with the introduction of Structural Adjustment Programmes in the middle 1980s in Nigeria, many

Nigerian women lost their jobs because of the unskilled nature of their jobs and low positions because they do not have the educational qualifications to benefit from globalization. The effect of globalization on the Nigerian women has intensified the involvement of Nigerian women in international prostitution.

From the foregoing, it is very clear that poverty, to a great extent influence common pregnancy complications, pregnancy outcomes and maternal mortality in Nigeria. Pregnant women are the majority of the poor and as many families have fallen into poverty due to distressed economy, it becomes difficult for these women to have money for hospital bills. Therefore, instead of going to hospitals, they resort to faith clinic and herbal homes, corroborating Okonufua (2009) and Onwudiegwu (2011) that user charges reduced the number of women that attend antenatal care and delivery of their babies resulting in many complications and avoidable deaths. They are only brought to hospital by the faith clinic attendants when they are at the point of death and at that time, it would have been late for the hospitals to render any meaningful help. This means that, if these women could afford hospital bills, many of them would have been alive today. This brings to question the role of government in prevalence of common pregnancy and its risk factors in the country. The women especially poor women have not felt any impact of government efforts to curb the menace. Having babies who would later become workers and leaders of the country should be seen as a national service, which cannot even be quantified in monetary terms.

Literacy Status

Literacy is traditionally understood as the ability to read and write. Literacy status as a risk factor of common pregnancy complications can affect pregnancy outcome of a pregnant women in Owerri Capital Territory. According to Okenwa (2012), literacy is an intellectual process of gaining meaning from a critical interpretation of written or printed text.

Women's lack of education has been shown to be one of the causes of increase cases of common pregnancy complications in Nigeria. From all indications, Nigerian women have been denied equal educational opportunities. This has brought about the issue of many of them being complete illiterates. Pregnant mothers are often discriminated against in terms of education due to male 'syndrome' preferences. In many families in Nigeria, males are encouraged to go to school to acquire knowledge rather than girls. Hence, with little or no education opportunities, pregnant women suffer common pregnancy complications unlike their counterparts in developed countries of the world. In this study, the researcher adopted literate and non literate to categorize the literacy status of pregnant mothers. Heinz (2009) opined that education was found to be related to socio-economic status, in that, well educated persons usually in the upper income group tend to have more knowledge of diseases and are also more sensitive to the symptoms than illiterate ones. Research also revealed that persons with high levels of education use preventive and curative approaches to avert health-related complications more than those with low levels of education (Apter 2009; Carl, 2007; Hall, 2007; Hamilton & Diana, 2011 & Leridon, 2005). This is an important observation since common pregnancy complications is a health problem that requires preventive health care approach.

Furthermore, UNICEF (2006) reported that out of the estimated 885 million adults who are functionally illiterates throughout the world, two-thirds are women. According to UNICEF (2001), the educational access of girls who have historically been disadvantaged relative to boys and the closely related problem of female illiteracy which has been far more prevalent than illiteracy among men, has serious implications both for women themselves particularly the child bearing women and for the care of their children. This makes missionary education train women to occupy subordinate positions. Furthermore, many cultures in Nigeria do not encourage the education of the girl child. Where resources are

limited, the family will rather send the boy child to school at the expense of the girl child (UNICEF, 2001). All over Nigeria, the gender disparity in education exists at all levels of education but it is especially glaring at the tertiary level and this trend reflects even at the teaching level. According to Federal Office of Statistics (FOS, 2007), the trend is that the higher the level of educational institutions and cadre within the professions, the less the proportion of females.

The low access of the girl child to education in Nigeria contributes to women's poverty in Nigeria in the sense that education is a pre-requisite for getting a good job and a good income. Education also enhances a woman's participation in decision making at home, which has a lot of implications for prevalence of common pregnancy complications and maternal mortality. Bankole and Eboiyehi (2003) argued that if education stands as the most powerful lever to improve the capacity of any individual, it means that the Nigeria women cannot benefit from development and globalization. The fact that many Nigerian women are still illiterates has negative implications for maternal mortality resulting from pregnancy complications, because lack of education limits the extent to which women can help themselves including fighting for their own lives. Educated women may have more understanding of the physiology of reproduction and be less disposed to accept the complications and risks of pregnancy as inevitable, than illiterate or un-educated women. Lack of education limits young women's knowledge about nutrition, birth spacing and contraception. AbouZahr (2004) asserted that lack of education opportunities might lead to poor understanding of health related matters. This implies that many women may not be familiar with different diseases and their presentation especially common pregnancy complications.

Warren (2007) explained that women deprived of education and decision-making power face serious constraints in rearing healthy productive children and they tend to have more

children than they wish, compounding the pressures on themselves and their families. Educated women are able to communicate better with their spouses about family decisions, use contraceptive more effectively and have higher aspirations for their children (World Bank, 1999). Education and autonomy re-enforce each other. Low education and low autonomy make it difficult for women to obtain medical care particularly the pregnant women.

Marital Status

Maternal morbidity and mortality resulting from pregnancy complications might be reduced among pregnant women through social support and significant persons. According to Idowu, Onsinaike and Ajayi (2011), pregnant women who have a great deal of social support from their husbands suffer a lower risk of common pregnancy complications than otherwise. Marital status is a risk factor of common pregnancy complications and an aspect of human life that refers to conjugal relation that involves intimacy between spouses. Conjugal relations have bearing on some aspects of a woman's life in particular and on the wellbeing of the family in general. Marital status connotes whether a woman is married or single. Recently, findings from India showed that women who experience violence from their husbands are less likely to have control over sexual activities or to be able to make decision about the timing of child-bearing particularly in such highly gender-stratified settings (Stephenson, 2008). Stephenson emphasized that feelings and fear experienced during pregnancy by women are intense and varied. These feelings and concerns are normal aspect of pregnancy. Each woman comes to term with the changes in her own way, with support of her partner or family. Stephenson stressed that husbands can influence pregnant women's decision to visit ante-natal clinic to seek for medical advice to avert pregnancy complications. In this study, all pregnant women who are not yet married, separated, widow, divorced, are regarded as unmarried and might not access ante-natal care as a result of

financial challenges, cost of transport, hospital bills and location of the hospital. Furthermore, due to attitudinal problems, some unmarried pregnant women would want to conceal the pregnancy and sometimes might attempt to get rid of the pregnancy, since it is not an accepted norm in Nigerian culture, particularly in Owerri, Imo State.

Ante-natal Booking Status

Ante-natal booking status might be a risk factor of common pregnancy complications. Ante-natal care is the supervision and care given to a pregnant woman to achieve good health and pleasant child bearing experience and a healthy baby at the end of pregnancy. Ante-natal care raises awareness about the need for care at delivery, and also gives women and their families familiarity with health facilities that enable them to seek help during crises. Pregnant women need to recognize the importance of ante-natal care and ensure they receive such care as they are booked during pregnancy (Baabian, 2003). Not all pregnant women in Owerri Capital Territory attend ante-natal clinic. According to Akhigbe, Edokha and Owolabi (2008) booked mothers are defined as pregnant women who have had at least three ante-natal visits while unbooked mothers are pregnant women who had less than three ante-natal visits, or have not attended ante-natal visits at all throughout the index pregnancy. In this study, booked mothers are pregnant women who attended ante-natal clinic at least three times in the index pregnancy while women who booked late or attended ante-natal clinic less than three times or not booked at all and referral cases are regarded as unbooked mothers. Akhigbe, et al. observed that unbooked pregnant mothers were found to have a significantly increased incidence of common pregnancy complications ($P < 0.001$).

Empirical Studies on Common Pregnancy Complications

Researches have been conducted on prevalence and risk factors of common pregnancy complications among pregnant women. Those related to the study are reviewed and presented below.

Khaskheli, Baloch and Sheeba (2013) carried out an observational prospective cohort study from January to December 2011 on risk factors and complications of puerperal sepsis at a tertiary healthcare centre. The variables studied were demographic variables of parity, booking status (booked or unbooked), onset of labour, status of membranes, place of delivery, clinical spectrum and maternal morbidity and mortality. The objective of the study was to determine the risk factors and complications of puerperal sepsis among women who delivered or were referred to the obstetric and gynaecology Medical Centre, Liaquat University Hospital, Jamshoro/ Hyderabad, Sindh Pakistan. Ex-post- facto research design was used and simple random sampling technique was adopted to select the case files used for the study. The above study used purposive sampling technique to select a referral obstetric and gynecology Medical Centre. This is similar to the present study, where the researcher used the same sampling technique to select the four hospitals used for the study. On the contrary, in the present study, the entire target population (case files or folders of the attendees) were studied, but the researchers in the above empirical study used random sampling technique. Data collection format was used in collection of data by researchers and also inferential statistic of chi-square was used for analysis of data.

The result of the above study revealed that puerperal sepsis was highly reported in women above 31 years of age and unbooked grand multiparous women which confirms that advanced maternal age influence the prevalence of common pregnancy complications ($P < 0.05$). Most of the cases were referral from outside and had unnecessary labour induction

with improper sterilization by unskilled personnel. Majority had prolonged rupture of membranes at the time of admission. High morbidities seen were septicaemia and mortality rate was high. The study concluded that the frequency of common preventable risk factor was high such as low standard of personal hygiene, lack of obstetric care, poverty, lack of knowledge of utilization of healthcare facilities available, unplanned pregnancies, unnecessary induction and delivery by unskilled personnel. All these according to Khaskheli, et al. (2013) resulted in severe life threatening complications such as septicaemia, disseminated intravascular coagulation as well as maternal death. The study recommended that adequate obstetric care and health education on family planning to all pregnant women should be considered as a priority. Delivery of babies by unskilled personnel should be discouraged by training and employment of qualified trained healthcare personnel.

Beckette, John, Stephen and Schueler (2010) carried out a study to assess the prevalence of anaemia in pregnancy in Jima town, South Western Ethiopia. The purpose of the study was to determine the prevalence of anaemia in pregnancy among pregnant women who were first time attendants of the ante-natal clinic in Jima health care centre, Jima, Ethiopia, from August 20th to December 15th 2010. It was a retrospective study, ex-post-facto research design and purposive sampling technique were adopted. Instrument for data collection was self developed data collection format. The population of study was 2,279 pregnant women who were first time attendants in health centres mentioned above. Data were analysed using inferential statistics of chi-square (χ^2).

The findings showed that mean haemoglobin level was 1.9mldl for the whole group. Anaemia was higher among the illiterate pregnant mothers and those who did not practice family planning (high parity) as well as those in their third trimesters who were not attending regular ante-natal visit and those with increased parity. These mothers were at risk of pregnancy complications such as anaemia and heart failure ($P < 0.05$). They also had the

chances of delivering low birth weight babies or experiencing inter-uterine deaths and other pregnancy complications with poor pregnancy outcome. The study recommended that efforts should be geared towards ensuring that intensive health education is given to pregnant mothers. Health care professionals should also discourage high parity among reproductive age women by encouraging women to adopt family planning. Nutrition education should also be given to pregnant mothers to reduce cases of anaemia and maternal mortality. The above study adopted the same research design, sampling technique and instrument for data collection but differ in the target population where the researchers used only first time attendants in the antenatal clinics.

Sarode (2010) conducted a study on the influence of illiteracy on pregnancy complications among women in the Slum of greater Mumbai. The purpose of the study was to determine the influence of literacy status on pregnancy complications among pregnant women in Mumbai. The study was a descriptive survey research conducted from June to August 2005. Population of study was (3,500) three thousand five hundred. Two stage sampling procedure was adopted to select (349) three hundred and forty-nine households. Self structured interview schedule form was the instrument used for collection of data. Sample size was 349 pregnant women in slums representing slum population in greater Mumbai. Logistic regression analysis was used to analyze the data generated.

Result of the study showed that about 47 percent of pregnant women in the study area reported that they had at least one problem during pregnancy. The major ante-natal problem reported were swelling of the legs (31 percent), vaginal bleeding (9 percent), blurred vision (10 percent), convulsion not from fever (7 percent) and anaemia (4 percent). This indicates that the reproductive health condition of study women remains poor. Probably these women do not adopt promotive health. The result also shows that the attendance to ante-natal clinic increased with rise in position of women with respect to socio-economic factors such as

literacy status. Poor attendance to ante-natal clinic decreased with rise in the birth order of children and rise in the mother's age, whereas it increases with improvement in the position of women with respect to education and standard of living. The result also revealed that study women who have not gone for ante-natal care develop complications during delivery such as excessive bleeding.

Conclusion drawn was that maternal deaths resulting from pregnancy complications clustered around labour, delivery and the immediate post-partum period with obstetric bleeding being the main cause of death, poor attendance to ante-natal clinic pertaining to ante-natal period is excellent for those other than illiterate women ($P < 0.05$). It clearly shows that as education level increases, regular attendance to ante-natal clinic (ANC) also increases. Excellent ante-natal care seeking behaviour of women towards antenatal measurement was evident but moderate towards ante-natal advice. Illiteracy and poverty prevent pregnant women from achieving good pregnancy outcome. The study therefore recommended that effective awareness campaign through urban health centres should be seen as a priority and committed health workers should be employed to work in health facilities. Easy access to health services, better health care delivery system, quality healthcare, awareness about appropriate birth intervals and proper diet during pregnancy as well as follow-up care should be adopted for the betterment of reproductive health of women, particularly the illiterate. The above study differs from the present study by using descriptive survey research design and two stage sampling technique to select the simple size. The above study was conducted in a slum Greater Mumbai while the present study was carried out in a capital city, Owerri Capital Territory.

Damaru (2009) conducted a cross-sectional study in Napel on the prevalence and risk factors associated with reproductive Tract Infection (RTIs) among women during reproductive age. The population of study was two thousand, two hundred and eighty-two

(2,282) pregnant women attending the seven health care centres and health posts of Kaski District of Nepal, in West Africa. The sampling technique used was simple random sampling technique conducted in 7 randomly selected primary healthcare centres and health posts of Kaski District of Nepal. The sample size was 282 pregnant women. The participants attending the seven randomly selected primary health centres and health posts were probed for RTI symptoms according to World Health Organization Syndromic case Management Guideline. The data were collected using data collection schedule form and analysed using inferential statistic of chi-square (χ^2).

Results revealed that prevalence of RTI symptoms was estimated to be 78.9 percent. Common reported symptoms were backache (71%), low abdominal pain (67%), watery vaginal discharge (56%), genital itching (51%), burning urination (44%) and curd discharge per vagina (26%). Most pregnant women with RTI were ≥ 30 year's age, ≤ 19 year's age at first pregnancy, and parity ≥ 2 , did not clean genitalia after sex. Consistently, more than nine out of every ten illiterates, high parity (≥ 4), abnormal bleeding had more RTIs as compared to their counterparts respectively ($P < 0.05$). Illiterates who do not clean genitalia after sexual act were significantly more at risk (OR 3.11) of having RTIs than those who did not have these attributes correspondingly when compared with literate mothers. In conclusion, burden of the RTIs among pregnant women is unexpectedly high, indicating the women's vulnerability to reproductive morbidities, limited service accessibility and their reproductive fates. Furthermore, majority was modifiable factors, reflecting the needs of information, empowerment and behavior changes for the effective prevention and management of RTIs. The above study used random sampling technique to select the health care centres and health posts. On the other hand, the present study used tertiary and secondary levels of health care to conduct the study. Both studies are similar with regards to statistical tool used in analyzing the data.

In another study, Adam, Khamis and Elbashir (2005) conducted a cross-section survey to ascertain the prevalence and risk factors of plasmodium falciparum malaria in pregnant women in three hospitals in Eastern Sudan using ex-post facto design. The population of study was 744 pregnant women. Purposive sampling technique was used in selecting three hospitals in Eastern Sudan. Instrument for data collection was data collection proforma. The data were analysed using inferential statistic of chi-square (χ^2). The findings showed that age and parity were not associated with malaria. The study recommended that effort should be made by health workers, media houses, government and non-governmental organization to educate the pregnant mothers on preventive measures of malaria. Donor agencies should be encouraged to provide free long lasting insecticide treated net (LLITN) and prophylaxis to reduce the burden of malaria on pregnant women. The above study was similar to the present study because in both studies, hospital records, ex-post facto research design and purposive sampling technique were adopted.

Idowu, et al. (2005), conducted a study on prevalence of anaemia among pregnant women receiving ante-natal care in two hospitals and a traditional birth home in Abeokuta, Nigeria. The design was ex-post-facto research design. The population of study was four hundred and forty-seven (447) pregnant women. Self developed data collection schedule format was the instrument used for the study and purposive sampling technique was adopted. Data were analysed using inferential statistic of chi-square at 0.05 level of significance. The result showed that out of four hundred and seventy-seven women used for the study, anaemia was recorded in 365 (76.5%) of the enrolled women at one trimester of pregnancy or the other. Of these, 125 were primigravidae and 240 multigravidae, constituting a prevalence rate of 80.6 and 74.5 percent respectively. This is an indication that primigravidae are more at risk of maternal death as a result of severe anaemia Two hundred and eleven women (57.8%) had moderate anaemia, while 147 (40.3%) had mild anaemia and 7(1.9%) were severely

anaemic. Anaemia in pregnancy is still a major health problem in Nigeria identifying primigravidae as being more at risk than multigravidae. The study therefore recommended that nutrition education should be an important area of focus by health workers to ensure that pregnant women know and practice preventive measures of anaemia. The above study differs from the present study; the researchers used pregnant women receiving antenatal care as the target population. Traditional birth home was used as one of the health facilities by the researchers in the above study. On the other hand, the present study used all pregnant women who attend ante-natal clinic or delivered or were referred as the target population.

Ayuba and Gani (2012) conducted a study on outcome of teenage pregnancy in the Niger Delta, Nigeria. The purpose of the study was to evaluate risk factors associated with teenage pregnancy and compare the obstetric and fetal outcome to older parturient. The study was a retrospective cross-sectional study carried out over a period of four years (January 1, 2007 to December 31, 2010) in Niger Delta University Teaching Hospital, Bayelsa State, Nigeria. Population of study was one thousand three hundred and forty-one (1,341) deliveries among teenage and non-teenage mothers. Systematic sampling technique was adopted. Sample size was eighty-three (83) teenage pregnancies identified. Statistical analysis was performed with statistical package of social sciences (SPSS Version 10) using chi-square (χ^2) statistic.

The findings showed that teenage pregnancy in Niger Delta was concentrated among women with less formal education, who were unemployed, unmarried and with inadequate ante-natal care and obstetric risks for poor pregnancy outcome ($P < 0.05$). The study recommended that there should be provision of an appropriate contraceptive methods and placing priority on any pregnancy occurring in this age group in terms of obstetric care. The design and the method of data collection for this study were exactly the same with the present

study, but the target population consisted of all deliveries among teenage and non-teenage mothers which differed from the target population of the present study.

Aghamohammadi and Nooritajer (2011) conducted a descriptive and comparative study on maternal age as a risk factor for pregnancy outcomes, maternal, fetal and neonatal complications in Punjab, India. The objective of the study was to compare the pregnancy outcomes of women aged below and over 35 years. Ex-post facto research design was adopted. The population of study was one thousand and twenty one pregnant, primiparous and multiparous women aged below and above 35 years. Simple random sampling technique was used. Data were analysed using SPSS software, χ^2 statistic, fisher and Od-ratio. Self developed data collection format used was based on the information on the mother's hospital's case file. The design and the methods of data collection for this study were exactly the same with the present study.

The findings showed that in the primiparous women, there is statistically significant relation between the age over 35 years and pre-clampsia, gestational diabetes, preterm labour, mal-presentation, caesarean section and low birth weight; ($P < 0.05$); while in multiparous women, there is a significant relation between the age over 35 years and pre-elampsia and low birth weight. In women 35 years and above, parity is effective on the measure of pre-eclampsia and caesarean delivery, only.

Conclusion drawn was that, the mother's high age could be an independent factor for pregnancy outcomes, in that multiparous women are exposed to effectivity of age. Although most women that were over-aged could have a normal labour with a term infant and without adverse pregnancy outcomes, nonetheless, over-age must not be a contraindication for pregnancy. The study recommended that efforts should be geared towards preventing pregnancy complications to ensure that adequate obstetric care is available to all reproductive age women; the over-age pregnant women should be on top priority list in rendering obstetric

care. The design and the method of data collection for this study were exactly the same with present study, but there are differences in the use of sampling technique.

Muataz and Shawqi (2006) compared obstetrical outcome of 267 adolescent pregnancies to 500 adult women pregnancies attending a hospital in Jordan from 1991-2000. The researchers adopted ex-post-facto research design and purposive sampling technique. The instrument used was data collection format. The inferential statistic of chi-square (χ^2) was used to analyse the data, using SPSS V .16.0.

The result showed that medical and obstetric complications, including pregnancy-induced hypertension, diabetes mellitus, anaemia, placenta praevia, abruptio placenta and multiple pregnancies were not different in both groups. There was however, a significant increase of pre-mature rupture of membrane leading to preterm labour in adolescent pregnancies compared to adult pregnancies (14.6% and 8% respectively). Conclusion drawn was that adolescent pregnancies were associated with a significantly higher incidence of forceps delivery (4.5% and 1.4%, respectively), neonatal intensive care unit admission (22.7% and 13.5%, respectively) and a lower incidence of caesarean section (7.1% and 16.8%, respectively). Therefore, the study recommended that the adolescents should be discouraged from engaging in early marriage through sex education. The health workers, parents and the larger society should intensify effort to discourage those practices that predispose the adolescent to early marriage. The above empirical study compared the obstetric outcome of adolescent to adult women pregnancies but the research design of the study was similar with the design adopted in the present study.

Jolly, Sebire, Harris, Robinson and Regan (2000) conducted a study on the risks associated with pregnancy in women aged 35 years and older. The objective of the study was to determine the obstetric risks of adverse outcome during pregnancy in women aged 35 years and above in singleton pregnancies in North West Thames Region, UK between 1988

and 1997. Ex-post-facto research design was adopted and population of study was 385 of singleton pregnancies in 18 hospitals in North West Thames Region, UK, that had data of all deliveries in the region. Purposive sampling technique was used. Instrument for data collection was self developed data collection format (DCF). Inferential statistics of chi-square χ^2 was used to analyse the data. The design, sampling technique and method of data analysis of this study were the same with the present study, but differ in the age group studied, 35 years and above while the present study used the age group 15 years and above for the study.

Results showed that older women were less likely to book late, but were more likely to have a history of diabetes mellitus and hypertension at booking. A higher proportion of the women aged 35 years and above had gestational diabetes, placenta praevia but there was no increased likelihood of anaemia in the older women. This confirms that advanced maternal age is an independent risk factor for certain pregnancy complications and adverse outcomes in pregnancy. The result also showed that older women were significantly more likely to breast-feed than younger women and this may reflect more positive attitudes to breast-feeding in older women. This result also showed that delayed child birth has advantages. Older women are also likely to have greater financial resources, social stability, age-related attributes such as emotional maturity, wisdom and experience of life. Jolly, et al. (2000) concluded that pregnant women aged > 35 years were at increased risk of complications in pregnancy compared with younger women ($P < 0.05$). The study recommended that obstetrician should have higher threshold for intervention in older women.

Kaur and Kaur (2012) carried out a retrospective study on obstetric complications among primiparity and multiparity. The objective of the survey research study was to determine the association of parity status with neonatal outcome among pregnant women in Punjab, India, between April 2012 to June 2012. A questionnaire was predesigned to meet

the requirements of the study. Population of study was one hundred (100) pregnant women which were made up of two groups based on parity status: primiparous (52) and multiparous (48). Random sampling technique was used, unlike the present study that used purposive sampling technique to ensure that accurate data were obtained, but both studies used inferential statistics of chi-square (χ^2) to analyse the data.

Results showed that demographic variable in relation to booking status showed that unbooked primiparous mothers were statistically higher in number than unbooked multiparous mothers. Pregnancy outcome in unbooked mothers were significantly poorer than in booked mothers due to high rate of obstetric complications, low birth weight and high incidence rate of emergency caesarean sections. There was no significance difference in the prevalence of common pregnancy complications among primiparous women when compared with other parity groups. The rate of obstetric complications was higher in primiparous women as compared to multiparous mothers. There was not significance difference in the prevalence of common pregnancy complications among primiparous women when compared with other parity groups ($P < 0.05$). The prevalence of various obstetrical complications like pregnancy induced hypertension, uterine rupture, premature rupture of membrane/pre-term labour, fetal distress, type of delivery and fetal weight loss were high. The study recommended that comprehensive antenatal care should be provided for this group of women to have a better maternal and fetal outcome.

Saba, Sultama and Mahsud (2008) conducted a study on outcome and complications of malaria in pregnancy. The objective of the study was to determine the complications and outcome of malaria during pregnancy. It was a prospective study carried out from 1st April 2005 to 31st December 2006 at District Headquarters Teacher Hospital, D.I. Khan which serves as tertiary level for the local population and referral hospital of adjoining district. Population of study was one thousand and twenty nine pregnant women. Ex-post-facto

research design was adopted. Sample size was one hundred and twenty-nine pregnant women with diagnosis of malaria. Self developed data collection format was the instrument used for the study. Data were analysed using chi-square χ^2 statistic.

The findings showed that malaria infestation was more common in multipara and majority of the patients were in second trimester of pregnancy. The result also showed cases of cerebral malaria, puerperal pyrexia, spontaneous abortion, babies of infected mothers died in neonatal periods and patients also had pre-term labour. Conclusion drawn was that complications were more in primip than multigravida. Also maternal malaria not only affected immediate infant health but can also result in high susceptibility of the child to parasite during the first year of life. Maternal malaria adversely affected the pregnancy outcome. The study recommended that all patients with fever in pregnancy must be screened for malaria parasite during antenatal care to prevent pregnancy complication and its negative consequences. The above study was on outcome and complications of malaria in pregnancy only which differs from the present study where several pregnancy complications were studied. Interestingly, both studies adopted similar research design, instrument for data collection and inferential statistics of chi-square (χ^2) for data analysis as well as independent variable of parity status.

Hoque, Hoque and Kader (2008) conducted a study to assess pregnancy complications of grand multiparity at a rural setting of Kwazulu-Natal in South African. The objective of the study was to evaluate the complications during pregnancy and delivery of grand- multiparity and to compare it with other parity groups, (multipara between 1-5 children and nullipara women). Retrospective case control study covered the period between April and December 2004. The population of study was three thousand and three hundred and fifty two (3,352). Grandmultiparity women (who had 5 or more previous deliveries) were compared with three thousand three hundred and twenty-six (3,326) nulliparous women (had no experience of previous delivery) and 3,772 women who had 1-5 previous deliveries

(multiparous women). Data collected from labour ward maternity register were analysed using chi-square (χ^2) to test the null hypotheses. The variables included in the study were anaemia, pregnancy induced hypertension, gestational diabetes, mal-presentation, pre-eclampsia, dysfunction labour (induction of labour using oxytonia), post partum haemorrhage, operative and assisted deliveries.

The findings of the study showed that grandmultiparous were significantly older than women with lower parity. Ante-natal medical disorder such as prevalence of anaemia (4.3%), gestational diabetes, hypertension (6.5%), diabetes and eclampsia were not significantly different compared to nulliparas and multiparas ($P < 0.05$). Grandmultiparous women were significantly not more likely to have ante partum haemorrhage than nulliparous women. Post term delivery and normal vaginal delivery rates were significantly higher in grandmultiparous women compared to multiparous women. Grandmultiparity was not a risk factor for preterm birth, intra-uterine foetal deaths and low birth weight. Hoque, et al. concluded that grandmultiparity was not safer compared to lower parity groups. Therefore, the study recommended that strategies are needed to guide women to seek proper care during pregnancy and if possible to avoid pregnancy in cases of grandmultiparous women. When compared with the present study, the above study was conducted in a rural setting and studied pregnancy complications among grandmultiparity. On the other hand, the present study determined the common pregnancy complications of all the parity groups (Primiparity, multiparity and grandmultiparity) however, both studies adopted similar research design and data were analysed using chi-square (χ^2) statistic.

Blondel and Marshall (2007) conducted a study on poor antenatal care, risk factors and pregnancy outcome in 20 French districts. The purposes of the study were to identify risk factors and to analyse their association with adverse pregnancy outcome in French women. The population of study was eighty-five thousand and six (85,006) women under 20 years of

age including French and foreigners in all the maternity units of 2 districts in France from January to June, 1993. Ex-post-facto research design was used. Simple random sampling was adopted to get a total of nine hundred and three (903) of poor attendees and seven hundred and fifty nine good attendees. Data collection format was the instrument used for the study and chi-square χ^2 test was used to compare the poor and good attendees. SAS statistical package for univariate analysis and BMDP package for logistic regressions were used to analyse the data collected. This study was conducted in a developed country France, unlike the present study which was carried out in developing country, Nigeria.

The findings showed that poor attendees were younger than good attendees, and that poor attendees were of higher parity than good attendees. Poor attendees were also more often single and without health insurance than good attendees in all the groups. Risk factors for poor attendance were young age, single status and lack of health insurance. Risk of poor attendance decreased with age and increased with parity among the French women of the study. Conclusion drawn by Blondel and Marshall was that poor attendance was not associated with poor pregnancy outcome in the French group and among the foreigners, both groups had high rates of preterm delivery and low birth weight. The study recommended therefore that health insurance and adequate funding should be of priority by the government to improve pregnancy outcome through regular attendance of antenatal care by pregnant mothers. In the above study, variables of poor antenatal care, risk factors and pregnancy outcome were studied but only variables of common pregnancy complications and risk factors were considered in the present study.

Harrison (1985) conducted a study to determine the influence of socio-demographic variables on maternal morbidity and mortality in Zaria. The research design adopted for the study was descriptive survey research design. Population of study was 22,774 consecutive births in Ahmadu Bello University, Zaria. Purposive sampling technique was used to select

the hospital used for the study. Instrument for data collection was data collection format. Data collected were analysed using inferential statistics of chi-square (χ^2).

The findings showed that education was a strong determinant of maternal morbidity and mortality in our environment ($P < 0.05$). Marital status was an important variable. Unmarried mothers were largely associated with unwanted and unplanned pregnancies with associated high incidence of efforts to conceal the pregnancy and, thus a tendency to avoid pre-natal care. The findings further showed that the unmarried pregnant women might be poorer, as they might lack the social support of husbands (partners) and others. Conclusion drawn was that poor economic status may make it difficult for women to make informed decisions about using health preventive measures and promotion services such as ante-natal care, particularly in an environment where the national poverty level is as high as 70 percent, as in the case of Nigeria. It was also observed that the most common causes of maternal death at Ahmadu Bello University were bacteria infection, anaemia, haemorrhage, pregnancy-induced hypertension and its consequences, severe pre-eclampsia and eclampsia and obstructed labour. The study recommended that efforts should be made by government by empowering women to curb poverty so that women can make informed decision about using health preventive measures and promotion services such as ante-natal care to reduce common pregnancy complications and mortality. Both studies adopted similar research design, independent variables of marital status and dependent variables of pregnancy complications that resulted to maternal death. Equally both studies differ; the present study did not include economic status as one of the variables of interest.

Bonizini, Coggon, Godfrey, Inskip, Crozier and Palmer (2009) conducted a study on occupational physical activities, working hours and outcome of pregnancy among women in Southampton, England from 1998-2002. Ex-post-facto survey research design was adopted and population of study was twelve thousand five hundred and eighty-three (12,583) women

aged 20-34 years. Purposive sampling technique was used. Self developed data collection format was used in data collection. Inferential statistic of chi-square (χ^2) was used in data analysis. The above empirical study is similar to the present study which studied similar population but differ in the characteristics of the population of study, the above empirical study used only women within the age bracket of 20-34 years while in the present study, pregnant women within the age bracket 15-50 years bracket were studied.

The findings showed that almost all women who were in paid work 797 (60%) were working at 34 weeks gestation, preterm delivery occurred in 46 (3%) and 89(7%) babies were small-for-gestational age. In determining the relationship between birth outcomes and non-occupational risk factors, the result showed that there was a strong association for primiparity with small for gestational age. In this study, it was found that trunk bending in late pregnancy (in occupations such as nursing, child minders (work with small children) nannies, teachers, catering, cleaning and shop work) carried a nearly three-fold-elevation in risk for miscarriage and preterm delivery ($P < 0.05$). The study therefore recommended that pregnant mothers should be allowed to have adequate rest, and be given annual/ maternity leave to improve birth outcome, and that more research should be carried out on effect of physical activity on pregnancy.

Ronda, Garcia, Sanchez-paya, Moen and Baste (2009) conducted a study on effect of occupational activities on the reproductive health of hairdressers and office employees in Bangladesh. The purpose of the study was to determine the pregnancy outcomes of hair dressers and the office employees. Descriptive survey research design was used for the study. The population of study was 9,500 hair dressers and office employees and sample size was 950. Self structured questionnaire was used for the study while inferential statistic of chi-square (χ^2) was used for data analysis.

The findings showed that increase risk was found to be spontaneous abortion, mainly associated with work-related stress but no differences were observed between the two groups for low birth weight (LBW) and preterm birth ($P > 0.05$). In analysis of these data, it was observed that, poor pregnancy outcome was common among hairdressers. Increased risk was found for spontaneous abortion, mainly associated with work-related stress ($P < 0.05$); but this result did not reach statistical significance. No differences between the two study groups for low birth weight (LBW) and preterm birth were observed. The study recommended that efforts should be made to enact laws through legislation to ensure that the health of women and pregnant mothers who are engaged in different occupations are protected. This can be achieved by safeguarding the health of pregnant mothers through reducing long working hours and giving them adequate weekly and annual rest. The women should be allowed to have access to decent work, and efforts should be made by relevant authorities to safeguard the environment where they work. The above empirical study differs from the present study; whereas the above study used self structured questionnaire as the instrument, the present study adopted data collection guide developed by the researcher for collection of data.

Talamenca (2006) carried out a study to determine the relationship between occupational exposures and negative reproductive outcome among women workers. It was an ex-post-facto retrospective study based primarily on the studies conducted in the past 15 years at Mexico City. Population of study was four thousand (4,000) women of reproductive age. Purposive sampling technique was used for the study. The instrument used was the review published in international scientific literature since 1999 through relevant data banks. Inferential statistic of chi-square was used in analyzing the data.

The findings showed that high stress at work was associated with increased risk of spontaneous abortion or miscarriage among women with more job stress ($P < 0.05$). When high job stress was combined with other risk factors such as older mother, smoking and high

parity, and stress increased the risk for spontaneous abortion. The study therefore recommended that the workplace should be safe for all workers including pregnant women. Furthermore, for the protection of women workers and pregnant mothers, all chemicals that cause reproductive toxicity should be labelled. Protection of reproductive health of women and men should be adopted by taking necessary precautions. Adopting rules to safe guard the health of working women in developing countries should be a priority.

Akhigbe, Edokha and Owolobi (2008) conducted a study in Edo Estate, Nigeria to assess the maternal complications and perinatal outcome of booked and unbooked pregnant mothers. The research design adopted for the study was ex-post-facto design. The population of the study was eight hundred and ninety-four (894) booked and unbooked singleton pregnant mothers (one baby in the womb). Purposive sampling technique was used for the study. The instrument used for data collection was self-developed data collection schedule format (proforma). Method of data analysis was inferential statistic of chi-square (χ^2). This study used South West Nigeria while the present study was carried out in South East, Nigeria.

From the results, the unbooked mothers were found to have a significantly increased incidence of antepartum haemorrhage, anaemia and pre-eclampsia/eclampsia. Maternal characteristics of the unbooked mothers were significantly different from those of the booked mothers. Compared to booked mothers, unbooked mothers were younger in age (29.3 ± 6.08 vs. 31.12 ± 4.80 - $p < 0.001$), had a higher tendency of being unmarried and had a lower educational status. Also, unbooked mothers were of lower social class (25.0% in upper class vs. 52.3%; $p < 0.001$) and had a higher proportion of (multipara vs. 5.5%; $p < 0.02$). In terms of mode of delivery, unbooked mothers were twice as likely to deliver by spontaneous vaginal delivery compared with booked mothers. On the other hand, unbooked mothers were twice as likely as booked mothers to deliver preterm babies. The study

therefore recommended that efforts should be made by health care professionals to carry out enlightenment campaigns in form of health risk, to educate all reproductive age women on the benefits of attending regular ante-natal clinic to reduce pregnancy complications and maternal mortality.

Ekwempu (1998) conducted a descriptive survey study on influence of antenatal care on pregnancy in Jalingo, Taraba State, Nigeria. The main purpose of the study was to determine the influence of antenatal care on pregnancy among pregnant women. Descriptive survey research design was used. The population of study was 7,201; simple random sampling technique was used to select the sample size of 450 pregnant mothers. The instrument used for data collection was self structured questionnaire. Data were analysed using inferential statistic of chi-square (χ^2).

The results showed that ante-natal care was associated with a three-fold reduction in perinatal (ie the period shortly before and seven days after birth) loss and virtual elimination of fetal loss from stillbirth. Ekwempu concluded that health-seeking behaviours, may be related to health knowledge and consciousness of the individuals, and may have implications for health status and pregnancy outcomes. The study recommended that intensive health education should be carried out in health institutions and beyond for women to ensure that health seeking behaviours of pregnant women improves to achieve good health status and better pregnancy outcome. Government should provide free maternity services to encourage women to attend ante-natal clinic. Descriptive research design, simple random sampling technique were adopted by the researcher in the above study, while in the present study ex-post facto research design and purposive sampling technique were used by the researcher.

Bauserman, Lokangaka, and Thorsten (2014)) conducted a study on risk factors for maternal deaths and trends in maternal mortality in low and middle income countries, in Kenya (Lusaka), Nagpur (India) Guatemala and Santiago in Pakistan from 2010-2013. The

purpose of the study was to identify factors associated with maternal mortality and to determine maternal, pregnancy related problems, delivery and postpartum characteristics that are associated with maternal mortality. The population of study was (277,736) two hundred and seventy-seven thousand, seven hundred and thirty-six pregnancies and data were collected from Maternal and Neonatal Health Registry site (MNHR), a Global Network (G.N) and series of interviews. It was a prospective longitudinal cohort analysis. Multivariable regression was used to determine the maternal, pregnancy-related, delivery and postpartum factors that were associated with maternal deaths such as maternal age, education, parity, ante-natal care, obstructed labour, delivery mode, haemorrhage and hypertensive disorder. Data analyses were performed using SAS, Inc (Version 9.3) and chi-square statistic was adopted.

The findings showed that, during the study period, 277,736 deliveries, 262,887 live births and 402 maternal deaths (145 maternal deaths/100,000 deliveries) were recorded. This resulted in a MMR of 153/100,000 live births. MMR ranged from 72 in Argentina to 321 in Pakistan. MMR in Latin American sites (91) was lower than the MMR in Asia (178) and African site (125). It was also observed that an overall decrease in the total MMR over a four-year period was 166 in 2010 to 126 in 2013. In some sites, there were reductions in MMR in the four-year period such as Kenya (169-87), Nagpur (132 to 123 and Guatemala (157-68), while Santiago had the highest MMR each year compared to other sites and the MMR increased to (227 to 348) from 2010 to 2013.

Conclusion drawn was that mothers who were > 35 years old, had no formal education, had > 2 children, had a previous pregnancy loss, inadequate antenatal care, operative or assisted vaginal deliveries, obstructed labour, ante-partum, haemorrhage, hypertensive disorders (pre-eclampsia/eclampsia) are predisposed to maternal death. Post-partum characteristics that were associated with maternal death included seizures or

convulsions, haemorrhage and anaemia. Haemorrhage and hypertensive disorders are treatable factors that are most highly associated with maternal deaths. It indicated that sites in the population-based multinational registry had a combined MMR of 153, a number which is higher than the WHO global target for 2030 supplementary goal that no country should have an MMR greater than 140. This observation highlights the continued challenge of maternal mortality. Therefore, the researchers recommended that there is need to improve the health and medical care of pregnant women to reduce maternal mortality. The above study used data from maternal and neonatal registry site a global network and interviews, study was over four-year period while in the present the researcher used records of common pregnancy complications from medical record departments of the hospitals used for the study. The period under study in the present research work was 2010-2014 (five-year period). However, data from both studies were analysed using chi-square (χ^2) statistic.

Mojekwu and Ibekwe (2014) carried out a study on maternal mortality data: a case study of Lagos state from January 2012 to December 2012. The purpose of the study was specifically to identify the leading cause of maternal deaths in Nigeria, and examine the trends of maternal deaths in Nigeria. It was a retrospective study and descriptive survey research design was adapted. Purposive sampling technique was used to select three hospitals and one maternity home located in eight chosen local government areas. The population of study was 2,088 pregnancy complications reported within the period of study in Lagos State. Instrument for data collection was structured questionnaires through personal interviews. Data were also obtained from the medical record units of the selected hospitals and maternity home. Though the instrument used for data collection in the above study was similar to the instrument used in the present study, but the researchers in the above empirical study included personal interviews from hospital personnel and pregnant women who came for ante-natal visit. However, data collected in both studies were analyzed using chi-square (χ^2) statistics.

The result of the study showed that haemorrhage (ante partum, intra-partum and post partum haemorrhage), (53.8%) is the commonest cause of maternal death, while eclampsia (4.3%) is the least among the identified major causes. Other pregnancy complications such as infection (sepsis), retained placenta, tears and others are also confronting women during labour and require certain control measures to reduce the effect. Prolonged labour (38.4%) and bleeding after birth (45.2%) were among the highest problems facing women during and after child birth. From the findings, the number of women, who attended ante-natal clinic, number of live birth delivery (1995-1996, 2009-2010) and the number of maternal deaths within the period and age of the respondents, show that in Lagos state, more live birth deliveries are taking place than maternal deaths within these periods which is the reason for rapid population growth in Lagos metropolitan city irrespective of the migration activities going on. The study also revealed that a large number of respondent's staff refused to supply hospital information about maternal deaths in their hospitals.

Conclusion drawn was that the leading cause of maternal death in Lagos state is haemorrhage and the trend of maternal mortality in Nigeria follows the same pattern with that of the entire African countries. The study therefore recommended that women should be educated on the importance of ante-natal and post-natal clinics as most of the mothers-to-be lack total awareness of existence of such services. This will enable them identify the possible symptoms of major causes of maternal deaths. Equally, more effort should be made by government and health sector to create more awareness on the need to have a total coverage on recording of data related to reproductive activities. Effort should also be made to use proper standard registers and centralized database to record reproductive health data so as to assist the health sector in making appropriate policies on health services.

Okonko, Akinpelu and Okerentugba (2012) conducted a study to ascertain the prevalence of sexually transmitted infections (STIs) among attendees at Association for

Reproductive Family and Health (AFRH) Centre in Ibadan, Southwestern Nigeria, from August 2011 to October 2011. The purpose of the study was to determine the prevalence of STIs among them, using conventional methods. Random sampling method was adopted and 200 patients were the population of study. Experimental research design was adopted and data were analyzed using chi-square, frequencies and percentages. The above empirical study differs from the present study, the researchers in the above study adopted experimental research design and simple random sampling technique while in the present study ex-post facto research design and purposive sampling procedure were used. However, both studies have similarities in the statistical tools used for data analysis.

The result shows that out of 200 patients, 151 females and 49 males tested, 110(55.0%) were infected with various STI agents ($P < 0.05$) and 21 (10.5%) had growth of staphylococcus aureus, E.coli, coli forms and normal genital flora. Candida albican 54(27.0%), Gardnerralla vaginalis 21(10.5%) and Trachomoniasis vaginalis 3(1.5%). However, Trepanema palladium (syphilis), Neisseria gonorrhoea and Chlamydia trachomonas were not detected. Risk factors associated with STI were young age, sex and marital status. Conclusion drawn was that fungal STIs constitute the major burden of the STI clinic and enhance the susceptibility of an individual to acquire or transmit HIV through sexual contact. The study recommended that routine STI screening in sexually active patients especially the young and singles should be advocated. Routine screening for STIs should be incorporated into hospital care which will help curb the spread of HIV infection in Nigeria.

Aboyegi and Nwabuisi (2003) carried out a cross-sectional study to determine the prevalence of common STDs among pregnant women attending antenatal clinic of University of Illorin Teaching Hospital (UITH), Nigeria from January 2000 to December 2000. Random sampling technique was used to screen 230 asymptomatic pregnant women using

conventional method. Instrument used for the study was self-structured questionnaire. Data were analyzed using chi-square test statistic.

The findings of the study showed that out of 230 asymptomatic pregnant women screened, 114(49.6%) pathogenic agents were recorded; indicating a high prevalence of sexually transmitted diseases STDs among pregnant women of the study ($P < 0.05$). The age of the subjects varied between 19 and 24 years (60.5%) were most affected, while the age group 38-43 years (5.2%) were least affected. The result also showed that STDs are associated significantly with young age and a low level of education ($P < 0.05$). Conclusion drawn was that STD is a public health concern. The study therefore recommended that in order to decrease the prevalence of STDs, routine screening for STDs should be advocated for all pregnant women. In addition, promotion of primary prevention, improved treatment seeking behaviour and establishment of effective control activities in high risk groups should be accorded an utmost priority. In the above empirical study, only STDs were studied and the research was carried out in Northern Nigeria, while the present study was carried out on several common pregnancy complications including STDs/ STIs. Studies also differ in the sampling technique adopted, though chi-square test statistics were used in both studies.

Chukwuocha, Dozie and Chukwuocha (2012) carried out a descriptive survey research to determine the epidemiology and burden of malaria among pregnant women in Adoni Local Government Area in Rivers State, Niger Delta Area of Nigeria. About 140 pregnant women were selected for the study using random sampling technique while structured pre-tested copies of questionnaire were used to elicit information from the respondents. Chi-square (χ^2) test statistic was used to analyze data and probability value p-value of $P < 0.05$ was regarded as significant.

Result of the study showed that 80(57.1%) of the study subjects were positive for malaria while 60(42.9%) were negative. A total of 35.0 percent were 15-20 years while age

bracket 36 years and above recorded only 5%. Also women in their 1st trimester recorded 38.75% incidence, 32.50% in the 2nd trimester while 28.75 percent in the 3rd trimester. Pregnant women were mostly predisposed to infection by presence of stagnant water around the residence and workplace. The result also showed that high incidence of malaria recorded is traceable to the terrain/topography of the area, poor environmental sanitation, younger pregnant women, adolescent and young adult women have higher incidence of malaria. Educational levels, occupation, stage of pregnancy (trimesters) were also observed to be risk factors of incidence of malaria. Conclusion drawn was that the incidence of malaria varied significantly according to the trimesters of pregnant women, locations, level of education and occupation ($P < 0.05$). Malaria continues to exert significant public health and economic burden among pregnant women, and this will continue unless urgent and proactive steps are taken. Pregnant women should be encouraged to attend ante-natal care where health education on malaria should be carried out frequently. Early detection and prompt appropriate case management of pregnant women with symptoms of malaria should also be improved. The study recommended that concerted effort should be made to scale up and sustain control strategies especially intermittent preventive treatment and health education during ante-natal visits. The above study was conducted in south-south region of Nigeria while the present study was conducted in Eastern region of Nigeria. Both studies differ in the use of research design but used similar statistical tool and probability value $P < 0.05$ which was regarded as significant.

Olowokere, Adekeye, Ogunfowokan, Olagunju and Irinoye (2013) carried out a retrospective analysis of cases of post partum haemorrhage (PPH) in selected health care facilities from primary, secondary and tertiary health care levels in Ile-Ife, Nigeria between 2004 to 2008. Ex-post-facto research design was adopted. The purpose of the study was to determine the prevalence and risk factors with occurrence of primary PPH and management

and outcome of post-partum haemorrhage in three healthcares facilities in Ile-Ife. These study settings were selected using purposive sampling technique, and to compare different variables under study at different levels of healthcare. A structured study proforma was used for data collection. Association between variables was determined using χ^2 at significance level of $P < 0.05$.

Results showed that the prevalence of PPH during the period of study was 1.6, 3.9 and 3.4 percent in tertiary, secondary and primary healthcare institutions respectively. Chi-square showed a significant association between booking status and occurrence of PPH and ($P = .000$), parity status and PPH ($P = .000$) major risk factors identified were multiple gestation (2%) antepartum haemorrhage (15%) and previous PPH (12.5%). The study also showed that many women affected by PPH were from lower occupational status and higher parity ($P < 5$ deliveries). Most of the cases of bleeding were referred from primary healthcare centres, state hospitals, private hospitals and mission/faith homes, traditional birth attendants and patients who had delivery at home or on their way to the hospital.

Conclusion drawn was that prior booking of pregnant women for antenatal care was associated with lower prevalence of PPH as higher prevalence was recorded among unbooked clients. Therefore the study recommended that midwives and other healthcare providers most especially at the rural area must ensure that women are mobilized and encouraged to register for ante-natal care as early as possible for appropriate maternity care, early identification of risk and preparation to reduce untoward effect. Evolving mechanism for supervisory and facilitator monitoring of maternity service delivery points by independent experts could help provide information on capacity gaps that must be filled consistently for community based care providers. In the above study, the researchers selected health facilities from primary, secondary and tertiary health care while in the present study, secondary and

tertiary health facilities were used for the study. However, the research designs adopted in both studies were similar.

Multahir and Utoo (2011) conducted a prospective observational study at Jos, University Teaching Hospital Jos, Plateau State, Nigeria from 2005 to 2008. The purpose of the study was to determine the incidence, pattern and associated factors of post partum maternal morbidity in Jos (JUTH) in all patients who delivered or were treated in the hospital for post partum morbidity. Nine thousand and fifty-six (9,056) pregnant women were used for the study. Data were collected directly from the subjects (oral interview) and were analyzed using chi-square test statistic at statistical significant level at < 0.05 .

Result showed that 246 (2.7%) of the women were treated for post partum morbidity, (32.9%) were in the age bracket 25 and 29 years and the majority of the women 5(58.5%) were of parity 2 to 4 deliveries. Socio-demographic characteristics showed that most of the patients (32.9%) were aged 25 and 29 years, and (19.9%) of the patients did not have a formal education.

Results also showed that 72.0 percent were unbooked patients (two-thirds) and had no regular ante-natal care while the rest (28.0%) were booked. The most common post partum maternal morbidity was primary post partum haemorrhage (35.4%), followed by hypertensive disorder (24.8%) and genital tract sepsis (16.7%). There was a statistically significant relationship between deliveries conducted by an obstetrician (occoucher) and post partum maternal morbidity ($P < 0.05$). Conclusion drawn was that the incidence of post partum morbidity was high with haemorrhage, hypertensive disorders and genital tract sepsis being common problems. The study therefore recommended that supervision of deliveries by skilled medical personnel and active management of third stage of labour will reduce the incidence of post partum haemorrhage. In the above study, data were directly collected from the respondents (oral intervidw) using questionnaire while in the present study, casefiles of

the pregnant women were used to extract information that were used to produce data collection guide used for the study.

Adefioye, Adeyeba, Hassan and Oyeniran (2007) carried out a study to determine the prevalence of malaria parasite infection among pregnant women at Ladoke Akintola University of Technology Teaching Hospital Osogbo, Nigeria (April to June, 2004). It was a descriptive survey research, where 250 pregnant women were randomly selected using random sampling technique for the study. Questionnaire was the instrument used to collect data on socio-demographic factors; drug use, gestation period, gravidae and attitude towards the use of mosquito net. Chi-square and Duncan rule range test were used in data analysis in the above empirical study, but the present study used only chi-square for data analysis.

The result showed that out of the 250 samples examined, 180 (72%) had malaria parasite in their blood. The age group 36-39 years recorded the highest prevalence (88.2%), followed by the age groups 32-35 years (76%). The illiterate pregnant women had the highest prevalence of (78.3%) and the least prevalence was recorded among educated patients (54.4%). Prevalence of malaria was also higher among primigravidae than multi-gravida. The study concluded that malaria disease is dangerous, especially an infection with plasmodium falciparum and is more hazardous during pregnancy. In endemic areas, the prevalence of clinical malaria is higher and its severity greater in pregnant than in non pregnant women. The study recommended that adequate control measures to prevent mortality and reduce social and economic loss by reducing morbidity should be tackled through progressive improvement. The use of regular chemoprophylaxis and insecticide treated net should be encouraged while stagnant pools and poor environmental condition that encourage breeding of mosquito should be avoided.

Summary of Reviewed Literature

The purpose of this study was to determine the prevalence and risk factors of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State. To achieve the stated purpose, review of literature was carried out. Relevant literature was reviewed in relation to variables of interest. Reviewed literature covered the following sub areas: the conceptual framework, theoretical framework, theoretical studies, and empirical studies.

Pregnant women are usually vulnerable to several health problems, which if not promptly detected and managed result to maternal morbidity and mortality, and poor pregnancy outcome. Pregnancy has been conceptualized as the state of carrying an unborn baby in the womb which starts from conception until birth (Hamilton & Diana, 2011). From the review, it was observed that pregnancy is the state of having an implanted embryo in the womb until such a time it is terminated spontaneously or through elective abortion or delivery. Pregnant women sometimes experience conditions in form of illnesses which threaten their well being and that of the babies. These are called common pregnancy complications (Tamay & Kuscu, 2011). Pregnancy complications it was noted are those medical conditions that occur during pregnancy, child birth or within 42 days after birth which can have adverse effects on the health of the mother or the baby or both.

Certain risk factors that influence prevalence of common pregnancy complications among pregnant women were elaborately discussed (Baabian, 2010; Bennette, et al., 2006; ILO, 2010; Koshiha, 2009; Rothman, 2012 & WHO, 2007). Literacy status, ante-natal

booking status, age, occupation, marital status and parity status were some of the risk factors that influenced prevalence of common pregnancy complications. Older women it was observed, face higher risks of common pregnancy complications and death, especially women 35 years and above (Jolly, et al., 2000). Structural and family support influence the prevalence of common pregnancy complications, pregnant women who have a great deal of social support from their husbands suffer a lower risk of common pregnancy complications than those who have little social support (Stephenson, 2008).

Theories related to the research topic were reviewed namely; the health belief model and self-efficacy. The health belief model and self-efficacy have been utilized in this study to explain irrationalities apparent in human behaviours which are largely responsible for the difficulties inherent in controlling and preventing common pregnancy complications resulting in maternal morbidity and mortality. Health Belief Model was used to explain how a pregnant woman can achieve positive health for herself and unborn baby to reduce prevalence of common pregnancy complications among pregnant women. Self-efficacy focused on whether a person performs the desired behaviour.

Several empirical studies were reviewed on prevalence and risk factors of common pregnancy complications both in developed and developing countries by researchers. Some of the studies (Ajukoye, 2010; Houry & Salhi, 2009; Ross & Wilson, 2011; Sabaratan & Wasara, 2009; UNFPA, 2007 & Wilson & Royle, 2002) showed that there were some common pregnancy complications among the women they studied. Others (Akhigbe, et al. 2008; Jolly, et al., 2000; Ronda, et al., 2009 & Talamenca, 2006), revealed that certain risk factors were associated with these common complications.

Several of these empirical studies on common pregnancy complications and their associated risk factors were done outside Nigeria without Nigerian background. Those that were done in Nigeria were done outside Imo State, especially with pregnant women as their subjects. To the best knowledge of the researcher, no studies on the prevalence and risk

factors of common pregnancy complications have been conducted in Owerri Capital Territory of Imo State using pregnant women as their subjects. It is against this background that the present study was designed to determine the prevalence and risk factors of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State, from 2010 to 2014.

CHAPTER THREE

METHOD

This chapter describes the method used by the researcher in ascertaining the prevalence and risk factors of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State, Nigeria, from 2010 to 2014. It covers the following: Research Design, Area of the Study, Population of the Study, Sample and Sampling Technique, Instrument for Data Collection, Validation of the Instrument, Reliability of the Instrument, Method of Data Collection, and Method of Data Analysis.

Research Design

The researcher adopted an ex-post facto research design. This design seeks to find out the factors that are associated with certain occurrences, outcomes, conditions or types of behaviour by analysis of past events (Akuezuilo & Agu, 2002). According to Nwogu (2006), ex-post facto design is appropriate for purpose of retrospective study where it is not possible for the researcher to directly manipulate the variables.

In this study, clinical records of pregnant women were studied retrospectively from 2010-2014 in order to determine the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State, Nigeria during the period. The adoption of this design was based on the success of similar studies conducted by Idowu, Mafiana and Sotiloye (2005), who utilized ex-post facto research design to determine the prevalence of anaemia among pregnant women receiving ante-natal care in two hospitals and

a traditional birth home in Abeokuta, Nigeria from 2002 to 2006. Arit (2008), also used this design in studying the reported nutritional problems of pregnant women in Uruan Local Government Area of Akwa Ibom State, Nigeria from 2004-2007. The above views substantiated the appropriateness of this research design.

Area of the Study

The area of study was Owerri Capital Territory of Imo State, Nigeria. Owerri Capital Territory consists of four Local Government Areas including Owerri Municipal Council Area, Owerri West Local Government Area, Owerri North Local Government Area and Mbaitoli L.G.A. It approximately occupies 10km² radius in Area (Owerri Capital Development Authority, 1977). Owerri Capital Territory has 42 autonomous communities.

It is bounded in the North by Aboh Mbaise Local Government Area, in the West by Ohaji-Egbema Local Government Area, in the East by Ngor Okpala Local Government Area and in the South by Ikeduru Local Government Area. Owerri Capital Territory is inhabited by both indigenes and non-indigenes. It has a total of 64 health facilities. This includes 2 tertiary hospitals, 21 general hospitals (secondary level of health care), 42 Primary Health Care Centres, mobile clinics and health posts (Imo State Ministry of Health, 2004). The hospitals in Owerri Capital Territory include among others, Federal Medical Centre Owerri, in Owerri North, Imo State Specialist Hospital Umuguma, in Owerri West, International Christian Community Hospital and Life Spring Hospital, Ikenegbu in Owerri Municipal Council Area and Holy Rosary Hospital, Emekuku in Owerri North LGA. The inhabitants are made up of Christians and few Muslims and pagans. There are also artisans and civil servants. Subsistence farmers that live in the area are predominantly natives and tend to bear more children who help them in farming activities. This exposes them to health problems such as common pregnancy complications.

The rationale for the choice of this area was based on the fact that some of the pregnant women in Owerri Capital Territory appear to be ignorant of the complications associated with pregnancy, thereby neglecting the importance of ante-natal care. According to Onyekwere (2002) this could be due to non-acceptance of family planning as these women believe in having many children due to their cultural belief that their husbands celebrate such feat, and the women are rewarded accordingly. The type of job these women engage in could also be a barrier as long waiting period is spent to see a doctor which makes them to patronize herbal homes, chemist/ medicine shop, and quack healthcare personnel (Umuokoro, 2002). Umuokoro stressed that some of them also indulge in self-medication to avert high cost of hospital bill which Umuokoro stressed contributed in prevalent cases of common pregnancy complications in the state. The pattern of seeking medical advice by pregnant women in Owerri Capital Territory makes it necessary for this study to be done to determine the prevalence and risk factors of common pregnancy complications among these women.

Population of the Study

The target population of this study consisted of 22,258 all the pregnant women who attended ante-natal clinics or delivered in the four selected hospitals located in Owerri Capital Territory of Imo State, from 2010 to 2014. Data were collected using 22,258 case files of the women. The break down was as follows: Federal Medical Centre Owerri, 8,193 folders; Imo State Specialist Hospital Owerri, 4,461 folders; Holy Rosary Hospital Emekuku 5,573 folders; and International Christian Community Hospital Ikenegbu, 4,031 folders. Justification for the use of these hospitals was based on the fact that they had large population of attendees of pregnant women. They were also referral centres strategically located within Owerri Capital Territory to serve the inhabitants of the Capital Territory and beyond. Furthermore, these hospitals kept accurate records, were well equipped with modern

medical equipment, had better qualified medical and paramedical personnel as well as specialists of different cadres in obstetrics and gynaecology. Referral cases from Primary and Secondary Health Care Centres from in and outside Imo State were attended to by specialists in these hospitals.

Sample and Sampling Technique

The sample size consisted of 11,975 casefiles, purposively drawn were used for the study, out of the entire target population consisting of 22,258 case files or folders of the attendees were studied. According to Akuezuilo and Agu (2002), when it is necessary to make a complete count or record of all the elements of the entire population in a study, it becomes imperative to study the entire population. In this study, a complete count or record of all the attendees in the four chosen hospitals were necessary for the determination of the prevalence of common pregnancy complications and risk factors associated with them.

Instrument for Data Collection

The instrument for data collection was Data Collection Guide (DCG) (Appendix A), produced by the researcher based on the information on the attendees' hospital records case files/ folders (Appendix B). The Data Collection Guide consisted of sub-sections, each comprising the common pregnancy complications under study. It also contained all the independent variables or the risk factors considered in the study such as age, literacy status, parity status, occupation, marital status and ante-natal booking status of the women. Data Collection Guide (DCG) was found convenient and used for the study, because the hospital folders could not be taken out of the hospitals, as they were confidential documents of the hospitals.

Validation of the Instrument

Face validity of the Data Collection Guide was established based on the objectives and research questions that guided the study were submitted to the dissertation supervisor for approval. Thereafter, five other experts, two lecturers in the Department of Human Kinetics and Health Education, Nnamdi Azikiwe University, Awka, a medical record officer and a statistician both of Federal Medical Centre, Owerri, as well as a Measurement and Evaluation expert validated the instrument. The validators were requested to assess the contents of the Data Collection Guide to determine whether it could be used to collect data from the hospital folders in line with the purpose, research questions and hypotheses of the study. The validator's suggestions and observations were used to produce the final data collection guide which was used for the study.

Reliability of the Instrument

The instrument (DCG) was designed to extract information from the records in the case files or folders of the pregnant women. These folders/case files are considered quite authentic for the study. Therefore, there was no reliability test.

Method of Data Collection

The data collection processes were carried out in three stages;

Sensitization visits to the hospitals.

Letters of introduction from the Head of Department were presented to the Medical Directors in charge of the four selected hospitals (Appendix C). The purpose of the visit was to sensitize the personnel about the intended research work and data collection process involved in order to gain their co-operations. The cooperation and support of all the staff, especially those working in the medical record units and obstetric and gynaecology departments of each of the hospitals was solicited. They were requested to assist in

identifying the patient's folders used between 2010 to 2014. Approval for the study was given by Ethical Committee of the hospitals used for the study (Appendix D). The sorting and retrieval of the required documents by health record officers lasted for three weeks in these hospitals.

Briefing of Research Assistants

The researcher guided eight research assistants who helped in the data collection. The research assistants were briefed on how to extract the required data or clinical information from folders of all pregnant women in which diagnosis of common pregnancy complications were made, for each of the years under reference and to enter same accurately into the self developed Data Collection Guide (DCG). The briefing was conducted in a hospital setting so as to enable the research assistants get familiar with and adapt easily to such environments. Practical group demonstrations were carried out and the trainees were allowed to perform several of such tasks under supervision until each of them was certified to be competent in handling the tasks of data collection. Incentives given included free snacks and lunch, free transport to and fro and allowance for the three days the instruction lasted.

Data Collection Proper

The researcher and the research assistants, constituted a data collection team. The team visited the four hospitals one after the other for the data collection exercise, sorted out and retrieved 11,975 case files that showed common pregnancy complications. These were used for the study. The team handled the data collection for all the years under study for all folders that contained common pregnancy complications such as; anaemia, miscarriage, haemorrhage, placenta problems, gestational diabetes, hypertension, pre-eclampsia/eclampsia, sexually transmitted infections, sepsis, malaria and others; and these pregnancy common complications that resulted to maternal death, that were identified in the folders in line with independent variables of age, parity, occupation, literacy status, marital status and

ante-natal booking status. Eight weeks were therefore used to complete the entire data collection process. The research assistants were given similar incentive as was done during the briefing, though the cash reward was increased to make them more committed and diligent.

Method of Data Analysis

Data collected were analyzed using descriptive statistic of frequency counts, percentages and charts to answer the research questions. Hypotheses for the study were tested at 0.05 level of significance, using inferential statistic of chi-square (χ^2). The statistical analysis was performed with Statistical Package for Social Sciences (SPSS version 21). The tables, graphic illustrations were constructed using the Microsoft office excel software version to make the answers to the questions clearer.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

This chapter presents the analysis of data generated for this study and the summary of major findings. The analyses are presented in tables and charts according to research questions and hypotheses which guided the study.

Research Question1: What is the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014?

Hypothesis 1: There is no significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State, from 2010 to 2014.

Data answering research question one and hypothesis one are contained in Table 1.

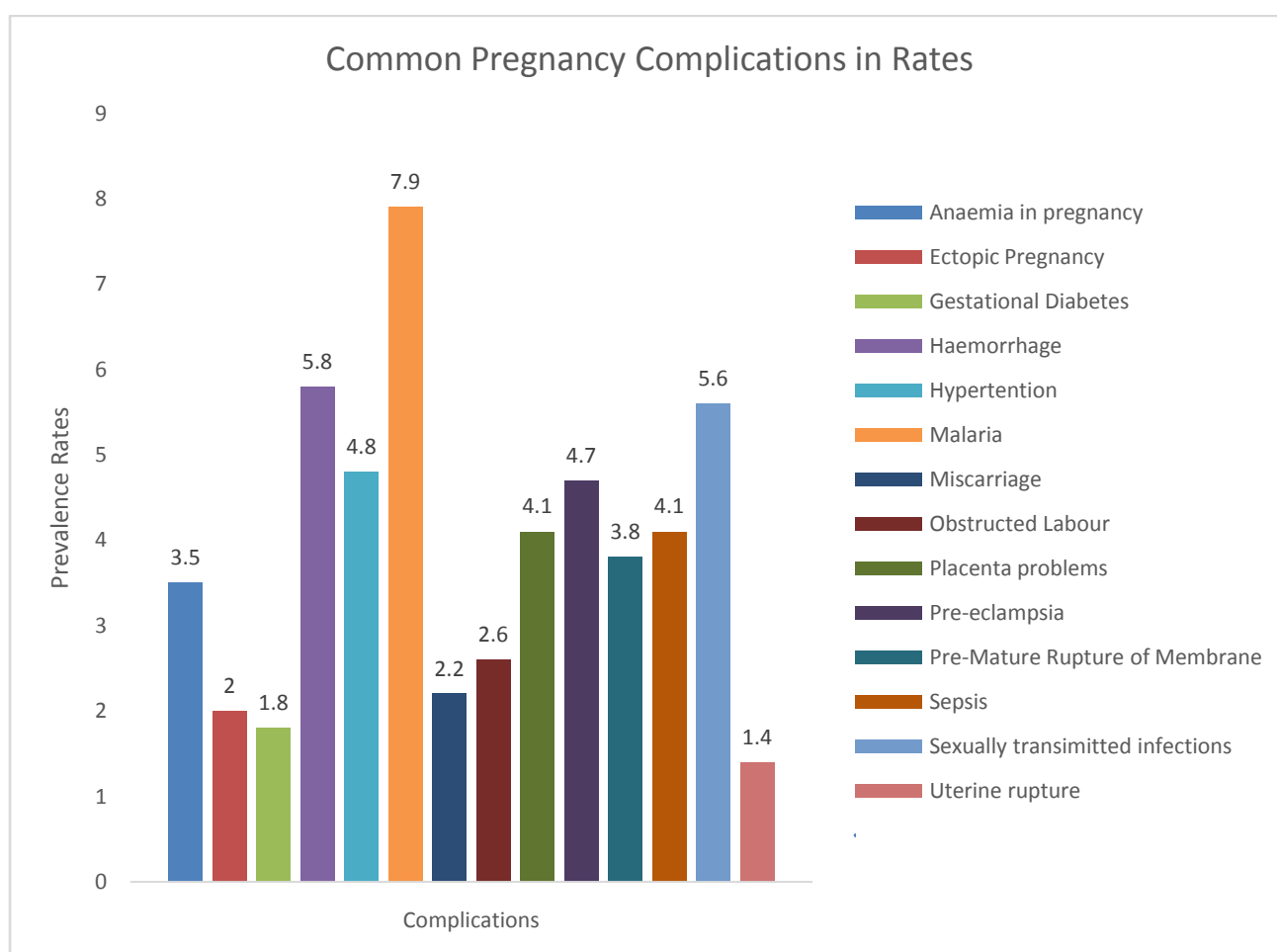
Table 1: Prevalence of Common Pregnancy Complications among Pregnant Women in Owerri Capital Territory, Imo State from 2010 – 2014 based on years.

Common pregnancy complications	Year 2010 to 2014 n = 11,975	Prevalence rate
	F	
Anaemia	776	3.5
Ectopic pregnancy	434	2.0
Gestational diabetes	398	1.8
Haemorrhage	1300	5.8
Hypertension	1062	4.8
Malaria	1761	7.9
Miscarriage	478	2.2
Obstructed labour	577	2.6
**Placenta problems	915	4.1
Pre-eclampsia/eclampsia	1040	4.7
Pre-mature rupture of membrane	836	3.8
Sepsis	911	4.1
Sexually transmitted infection	1241	5.6
Uterine rupture	317	1.4
Total	12046	54.1

$\chi^2 = 154.48$, critical value 19.81, df = 13, P < 0.05

** Placenta praevia and abruptio placenta = placenta problems

Table 1 shows the prevalence rate of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014 based on years. The table shows that malaria (7.9) had the highest prevalence rate within the period from 2010 to 2014; followed by haemorrhage (5.8), sexually transmitted infections (5.6), hypertension (4.8), and pre-eclampsia / eclampsia (4.7), sepsis (4.1) and premature rupture of membrane (3.8) in their descending order of magnitude. However, ectopic pregnancy (2.0), gestational diabetes (1.8) and uterine rupture (1.4) disclosed lowest prevalence rates of common pregnancy complications respectively. (Figure 1)



Bar Chart Showing the Overall Prevalence Rates of Common Pregnancy Complications among Pregnant Women in Owerri Capital Territory over the five –year period (2010 to 2014).

From this analysis, it was evident that common pregnancy complications were on the increase and still poses a disease burden on pregnant women in Owerri Capital Territory, Imo State.

When the data in table 1 were subjected to χ^2 analysis to test the null hypothesis; the χ^2 statistic result showed that the χ^2 calculated value = 154.48 were greater than table value of

19.81 at 13 degree of freedom (df) and 0.05 level of significance. Therefore the null hypothesis was rejected and the conclusion drawn was that the prevalence rates of common pregnancy complication differ significantly based on the years among pregnant women in Owerri Capital Territory from 2010 to 2014. (Appendix E).

Research Question 2: What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014 based on age?

Hypothesis 2: There is no significant difference in the prevalence of common pregnancy complications among pregnant women of various ages in Owerri Capital Territory of Imo State from 2010 to 2014.

Data answering research question two and hypothesis two are shown in Table 2.

Table 2: Prevalence of Common Pregnancy Complications in Owerri Capital Territory from 2010 to 2014 Based on Age Distribution of the Subjects.

Common pregnancy complications	Age (years)				Total			
	15-24year		25-34year		35yrs &above			
	f	%	F	%	F	%		
Anaemia in pregnancy	315	(2.6)	211	(1.8)	250	(2.1)	776	(6.4)
Ectopic pregnancy	133	(1.1)	201	(1.7)	100	(0.8)	434	(3.6)
Gestational diabetes	88	(0.7)	120	(1.0)	190	(1.6)	398	(3.3)
Haemorrhage	199	(1.7)	717	(6.0)	384	(3.2)	1300	(10.8)
Hypertension	88	(0.7)	393	(3.3)	581	(4.8)	1062	(8.8)
Malaria	997	(8.3)	391	(3.2)	373	(3.1)	1761	(14.6)
Miscarriage	104	(0.9)	213	(1.8)	161	(1.3)	478	(4.0)
Obstructed labour	134	(1.1)	160	(1.3)	283	(2.3)	577	(4.8)
Placenta praevia and abruptio placenta	214	(1.8)	198	(1.6)	503	(4.2)	915	(7.6)
Pre-eclampsia/eclampsia	403	(3.3)	219	(1.8)	418	(3.5)	1040	(8.6)
Pre-mature rupture of membrane	223	(1.9)	312	(2.6)	301	(2.5)	836	(6.9)
Sepsis	326	(2.7)	283	(2.3)	302	(2.5)	911	(7.6)
Sexual transmitted infections	520	(4.3)	417	(3.5)	304	(2.5)	1241	(10.3)
Uterine rupture	102	(0.8)	97	(0.8)	118	(1.0)	317	(2.6)
Total	3846	(31.9)	3932	(32.6)	4268	(35.4)	12046	(100.0)

χ^2 cal. =163.32, Critical value 38.88, df = 26, p-value < 0.05

Table 2 above presents the frequency distribution of the prevalence of common pregnancy complications from 2010 to 2014 based on the various age groups of the women in Owerri Capital Territory, Imo state. The table reveals that the subjects within the age

bracket of 15–24 years had the highest occurrence of malaria (8.3%) within the period of study and highest prevalence of sexually transmitted infections (retroviral disease) (4.3%). However, sexually transmitted infections had the lowest prevalence among the age group 35 years and above (3.1%). Furthermore, the table reveals that the following common pregnancy complications; hypertension (4.8%), placenta problems (4.2%), pre-eclampsia/eclampsia (3.5%), obstructed labour (2.3%) and gestational diabetes (1.6%), had the highest prevalence of these complications among the age group 35 years and above.

The overall prevalence of common pregnancy complications from 2010 to 2014 indicates that the age group 35 years and above recorded highest prevalence of 35.4 percent over the five-year period. The age bracket 25-34 years was the next (32.6%) and age group 15-24 years recorded the lowest overall prevalence of (31.9%) within the same period of study (see figure 2).

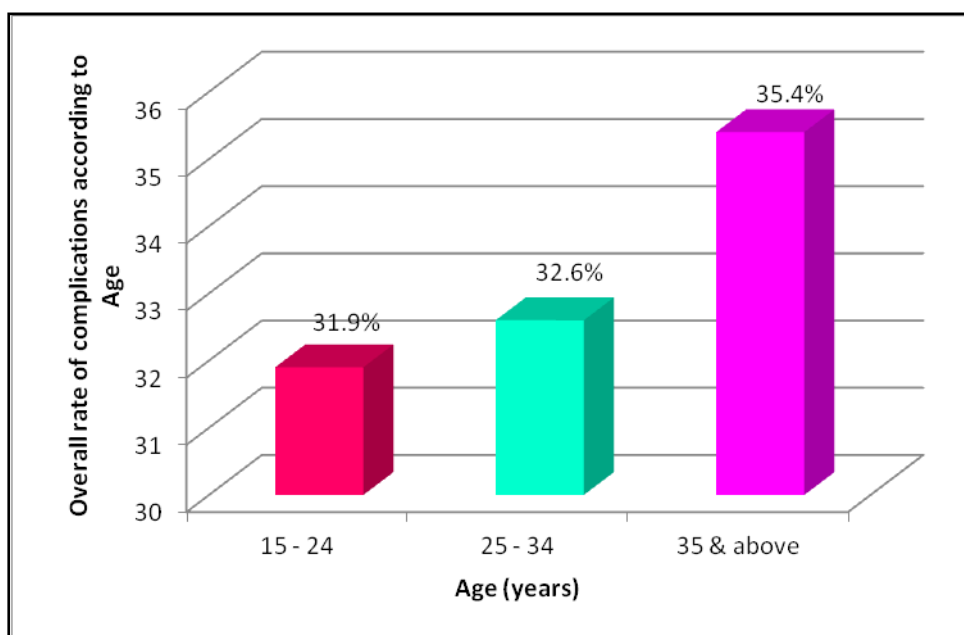


Figure 2: Bar Chart Showing the Overall Prevalence of Common Pregnancy Complications in Owerri Capital Territory, from 2010 to 2014 Based on Age Distribution of the Subjects

The chi-square (χ^2) analysis showed that the calculated χ^2 value of 163.32 was greater than the critical χ^2 table value of 38.88 at 26 degrees of freedom at 0.05 levels of significance. Therefore, the null hypothesis that there was a significant difference in the prevalence of common pregnancy complications among pregnant women of various ages in

Owerri Capital Territory of Imo State was rejected. This implies that there was significant difference in the prevalence of common pregnancy complications among pregnant women of various ages in Owerri Capital Territory from 2010 to 2014. Respondents aged 35years and above revealed highest prevalence of all the complications put together, while those 15-24years disclosed lowest prevalence (Appendix F).

Research Question 3: What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014 Based on Parity Status?

Hypothesis 3: There is no significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State from 2010 to 2014 Based on Parity Status.

Data answering research question three and hypothesis three are contained in Table 3.

Table 3: Prevalence of Common Pregnancy Complications in Owerri Capital Territory From 2010 to 2014 based on Parity Status of the Subjects.

Common pregnancy complications	Parity status					
	Primipgravida (1 delivery)		Multigravida (2-4 deliveries)		Grandmultigravida (5deliveries&above)	Total
	F	%	F	%		
Anaemia in pregnancy	203	(1.7)	216	(1.8)	357 (3.0)	776 (8.4)
Ectopic pregnancy	197	(1.6)	122	(1.0)	115 (1.0)	434 (3.6)
Gestational diabetes	110	(0.9)	138	(1.1)	150 (1.2)	398 (3.3)
Haemorrhage	439	(3.6)	387	(3.2)	474 (3.9)	1300 (10.8)
Hypertension	221	(1.8)	330	(2.7)	511 (4.2)	1062 (8.8)
Malaria	689	(5.7)	567	(4.7)	505 (4.2)	1761 (14.6)
Miscarriage	101	(0.8)	233	(1.9)	144 (1.2)	478 (4.0)
Obstructed labour	189	(1.6)	171	(1.4)	217 (1.8)	577 (4.8)
**Placenta problems	297	(2.5)	306	(2.5)	312 (2.6)	915 (7.6)
Pre-eclampsia/eclampsia	200	(1.7)	309	(2.6)	531 (4.4)	1040 (8.6)
Pre-mature rupture of membrane	307	(2.5)	331	(2.7)	198 (1.6)	836 (6.9)
Sepsis	280	(2.3)	311	(2.6)	320 (2.7)	911 (7.6)
Sexual transmitted	443	(3.7)	415	(3.4)	383 (3.2)	1241 (10.3)
Uterine rupture	101	(0.8)	89	(0.7)	127 (1.1)	317 (2.6)
Total	3777	(31.4)	3925	(32.6)	4344 (36.1)	12046 (100.0)

χ^2 cal. =480.58, critical value = 38.88, df = 26, p-value < 0.05

Table 3 shows the common pregnancy complications of the pregnant women of the study based on their parity status. The table indicates that pre-eclampsia/eclampsia (4.4%), hypertension (4.2%), haemorrhage (3.9%), obstructed labour (1.8%), had the highest prevalence among the grand multigravida, followed by multigravida and lowest among primigravida. However, primigravida had the highest prevalence of ectopic pregnancy (1.6%), malaria (5.7%) and sexually transmitted infections (3.7%). Furthermore, premature rupture of membranes (2.7%) and miscarriage (1.9%) had the highest prevalence among multigravida. Generally, Table 3 here shows that apart from malaria (5.7%) and ectopic pregnancy (1.6%) which had the highest prevalence among primigravida, the rest indicated highest prevalence among grand multigravida.

The overall prevalence of common pregnancy complications within the period of study indicated that grand multigravida had the highest prevalence (36.1%) followed by multigravida (32.6%) while the primigravida recorded the lowest prevalence of (31.4%) (Figure 3).

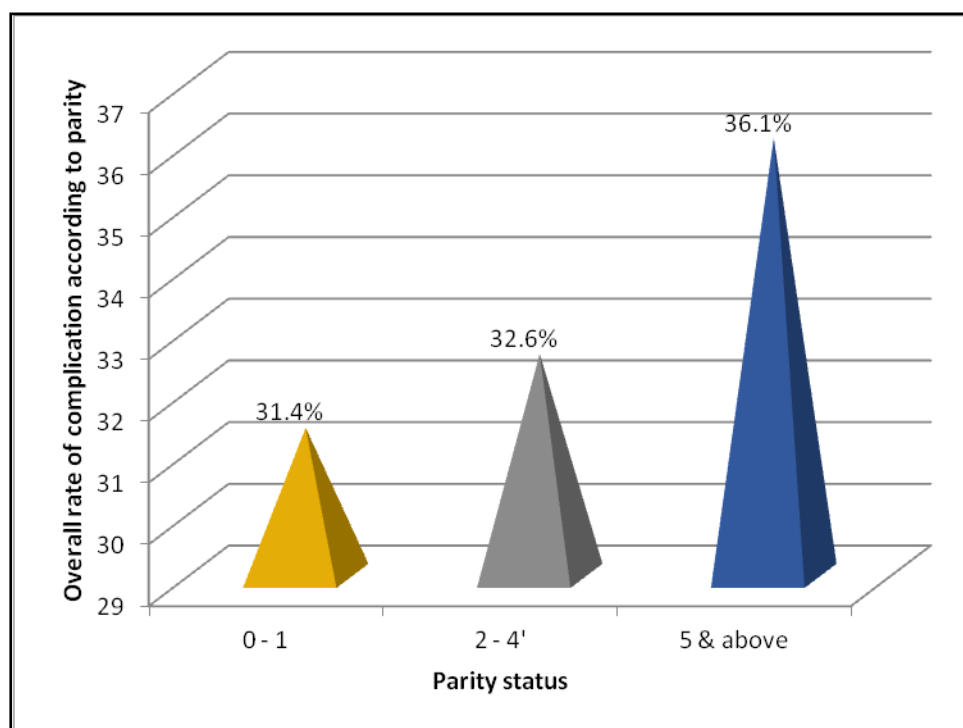


Figure 3: Pyramid Chart Showing the Overall Prevalence of Common Pregnancy Complications in Owerri Capital Territory from 2010 to 2014 Based on Parity Status of the Subjects

When the data in table 3 were subjected to chi-square (χ^2) statistic to test the null hypothesis, that there was no significant difference in the prevalence of common pregnancy complications among pregnant women of various parity status in Owerri Capital Territory of Imo State from 2010 to 2014; the result showed that the calculated χ^2 value of 480.58 was greater than the table value of 38.88 at 26 degrees of freedom and 0.05 level of significance. Therefore, the null hypothesis was rejected. Conclusion drawn was that there was a significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory from 2010 to 2014 with regards to various parity status. Women with parity status of five deliverires and above revealed highest prevalence while those who have delivered only a child revealed the lowest prevalence. (Appendix G).

Research Question 4: What is the diference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014 Based on Occupation?

Hypothesis 4: There is no significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State from 2010 to 2014 Based on Occupation.

Data answering research question four and hypothesis four are shown in Table 4 below.

Table 4: Prevalence of Common Pregnancy Complications in Owerri Capital Territory From 2010 to 2014 based on the Occupations of the Subjects.

Common pregnancy complications	Occupation		Occupation		Occupation		Total	
	Housewife	Civil servant	Artisan	Housewife	Civil servant	Artisan	Total	Total
	f	%	f	%	f	%	f	%
Anaemia in pregnancy	341	(2.8)	123	(1.0)	312	(2.6)	776	(6.4)
Ectopic pregnancy	117	(1.0)	106	(0.9)	211	(1.8)	434	(3.6)
Gestational diabetes	96	(0.8)	104	(0.9)	198	(1.6)	398	(3.3)
Haemorrhage	292	(2.4)	597	(5.0)	411	(3.4)	1300	(10.8)
Hypertension	142	(1.2)	419	(3.5)	501	(4.2)	1062	(8.8)
Malaria	431	(3.6)	543	(4.5)	787	(6.5)	1761	(14.6)
Miscarriage	125	(1.0)	131	(1.1)	222	(1.8)	478	(4.0)
Obstructed labour	327	(2.7)	111	(0.9)	139	(1.2)	577	(4.8)
Placenta praevia and abruptio	341	(2.8)	243	(2.0)	331	(2.7)	915	(7.6)
Pre-eclampsia/eclampsia	398	(3.3)	401	(3.3)	241	(2.0)	1040	(8.6)
Pre-mature rupture of membrane	333	(2.8)	76	(0.6)	427	(3.5)	836	(6.9)
Sepsis	270	(2.2)	0	(0)	641	(5.3)	911	(7.6)
Sexual transmitted infections	113	(0.9)	415	(3.4)	713	(5.9)	1241	(10.3)
Uterine rupture	117	(1.0)	87	(0.7)	113	(0.9)	317	(2.6)
	3443	(28.6)	3356	(27.9)	5247	(43.6)	12046	(100.0)

χ^2 cal. =1729.42, critical value = 38.88, df = 26, p-value < 0.

Table 4 shows the prevalence of common pregnancy complications among the pregnant women of the study. The table shows that artisans had the highest prevalence of malaria (6.5%), sexually transmitted infections (5.9%), sepsis (5.3%) hypertension (4.2%), premature rupture of membrane (3.5%), miscarriage and ectopic pregnancy (1.8%) respectively and gestational diabetes (1.6%). However, housewives had the highest prevalence of the following common pregnancy complications; anaemia and placenta problems (2.8%) each, obstructed labour (2.7%), and uterine rupture (1.8%) while civil servants had the lowest prevalence but had only highest prevalence of haemorrhage (5.0%) as common pregnancy complications.

The overall prevalence of common pregnancy complications based on occupation within the period of study, indicated that the highest prevalence was recorded among artisans, (43.6%) followed by housewives (28.6%) then, the civil servants (27.9%) (Figure 4).

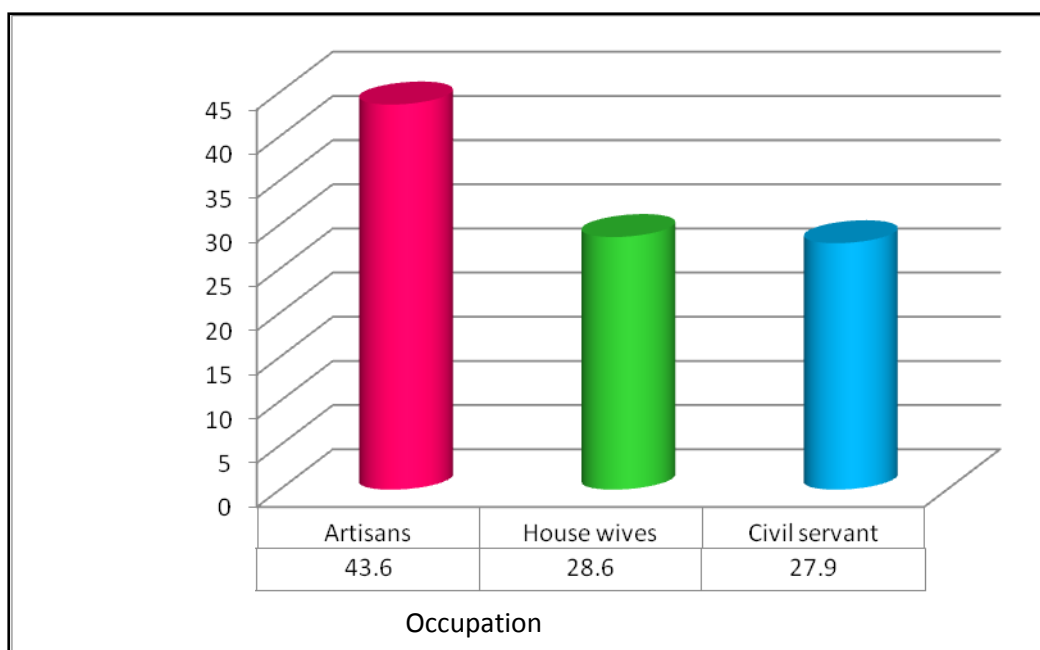


Figure 4: Bar Chart Showing the Overall Prevalence of Common Pregnancy Complications in Owerri Capital Territory from 2010 to 2014 Based on Occupations of the Subjects.

When the data in table 4 were subjected to chi-square (χ^2) statistic to test the null hypothesis, the result showed that the calculated χ^2 value of 1729.42 was greater than the table value of 38.88 at 26 degree of freedom and 0.05 level of significance. Hence, the null hypothesis which said that there was no significant difference in the prevalence of common pregnancy complications among pregnant women based on various occupations in Owerri Capital Territory of Imo State from 2010 to 2014 was rejected. Conclusion drawn was that prevalence of common pregnancy complications among pregnant women differ significantly in Owerri Capital Territory from 2010 to 2014 based on their various occupations (Appendix H).

Research Question 5: What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State, from 2010 to 2014 based on literacy status?

Hypothesis 5: There is no significant difference in the prevalence of common pregnancy complications between the literate and non literate pregnant women in Owerri Capital Territory of Imo State.

Data answering research question five and hypothesis five are shown in Table 5.

Table 5: Prevalence of Common Pregnancy Complications in Owerri Capital Territory from 2010 to 2014 based on Literacy Status of the Subjects.

Common pregnancy complications	Literacy status				Total	
	Literate		Non-literate		f	%
	f	%	f	%		
Anaemia in pregnancy	385	(3*.2)	391	(3*.2)	776	(6*.4)
Ectopic pregnancy	195	(1.6)	239	(2.0)	434	(3.6)
Gestational diabetes	119	(1.0)	279	(2.3)	398	(3.3)
Haemorrhage	589	(4.9)	711	(5.9)	1300	(10.8)
Hypertension	623	(5.2)	439	(3.6)	1062	(8.8)
Malaria	811	(6.7)	950	(7.0)	1761	(14.6)
Miscarriage	231	(1.9)	247	(2.1)	478	(4.0)
Obstructed labour	190	(1.6)	387	(3.2)	577	(4.8)
Placenta praevia and abruptio placenta	513	(4.3)	402	(3.3)	915	(7.6)
Pre-eclampsia/eclampsia	611	(5.1)	429	(3.6)	1040	(8.6)
Pre-mature rupture of membrane	519	(4.3)	317	(2.6)	836	(6.9)
Sepsis	401	(3.3)	510	(4.2)	911	(7.6)
Sexual transmitted infections	526	(4.4)	715	(5.9)	1241	(10.3)
Uterine rupture	155	(1.3)	162	(1.3)	317	(2.6)
Total	5868	(48.7)	6178	(51.3)	12046	(100.0)

χ^2 cal =319.26, critical value = 22.36, df = 13, p-value < 0.05

Table 5 shows the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory from 2010 to 2014 based on literacy status. The analysis showed that among the non-literate women; highest prevalence was recorded in these pregnancy complications; malaria (7.0%), haemorrhage (5.9%), sexually transmitted infections (5.9%) respectively, sepsis (4.2%), gestational diabetes (2.3%), miscarriage (2.1%) and ectopic pregnancy (2.0%). Furthermore, the analysis indicated that obstructed labour and anaemia each showed prevalence of 3.2 percent. However, literate women of the study had lower prevalence of these common pregnancy complications but showed highest prevalence of pre-eclampsia/eclampsia (5.1%) and hypertension (5.2%). The overall prevalence of common pregnancy complications based on literacy status of the women within the period of study indicated that the non-literate pregnant women had the higher prevalence of common

pregnancy complications of 51.3 percent compared with their literate counterparts who had 48.7 percent (Figure 5).

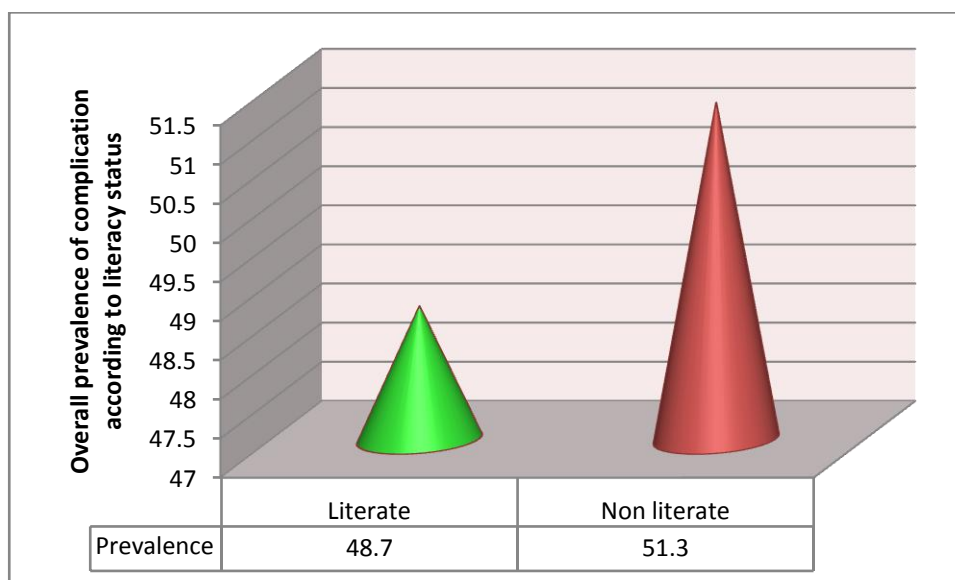


Figure 5: Cone Chart Showing the Overall Prevalence of Common Pregnancy Complications in Owerri Capital Territory from 2010 to 2014 Based on Literacy Status of the Subjects

When the data were subjected to chi-square (χ^2) to test the null hypothesis, the χ^2 statistic result showed that the calculated χ^2 of 319.26 was greater than the table value of 22.36 at 13 degree of freedom and 0.05 level of significance. Therefore the null hypothesis that there was no significant difference in the prevalence of common pregnancy complications of the literate and non literate pregnant women in Owerri Capital Territory of Imo State was rejected. This indicated that there was a significant difference in the prevalence of common pregnancy complications between literate and non literate pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014. (Appendix I).

Research Question 6: What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014 Based on marital status?

Hypothesis 6: There is no significance difference in the prevalence of common pregnancy complications between the married and the unmarried pregnant women in Owerri Capital Territory of Imo State from 2010 to 2014.

To answer the above research question and hypothesis, data generated are displayed in Table 6 below.

Table 6: Prevalence of Common Pregnancy Complications among Pregnant Women in Owerri Capital Territory from 2010 to 2014 Based on Marital Status of the Subjects.

Common pregnancy complications	Marital status		Total	
	Married f %	Unmarried f %	f %	
Anaemia in pregnancy	339 (2.8)	437 (3.6)	776(6.4)	
Ectopic pregnancy	213 (1.8)	221 (1.8)	434(3.6)	
Gestational diabetes	155 (1.3)	243 (2.0)	398(3.3)	
Haemorrhage	717 (6.0)	583 (4.8)	1300(10.8)	
Hypertension	313 (2.6)	749 (6.2)	1062(8.8)	
Malaria	878 (7.2)	883 (7.3)	1761(14.6)	
Miscarriage	165 (1.4)	313 (2.6)	478(4.0)	
Obstructed labour	280 (2.3)	297 (2.5)	577(4.8)	
Placenta praevia and abruptio placenta	513 (4.3)	402 (3.3)	915(7.6)	
Preeclampsia/eclampsia	647 (5.4)	393(3.3)	1040(8.6)	
Pre-mature rupture of membrane	499 (4.3)	337 (2.8)	836(6.9)	
Sepsis	304 (2.5)	607 (5.0)	911(7.6)	
Sexual transmitted infections	529 (4.4)	712 (5.9)	1241(10.3)	
Uterine rupture	147 (1.2)	170 (1.4)	317(2.6)	
Total	5699 (47.3)	6347 (52.7)	12046(100.0)	

χ^2 cal = 473.97, critical value = 22.36, df = 13, p-value < 0.05

Table 6 presents the prevalence of common pregnancy complications of the pregnant women of the study in relation to their marital status. The table shows that unmarried women of the study had the higher prevalence of the following common pregnancy complications, malaria (7.3), hypertension (6.2%), sexually transmitted infections (5.9%), sepsis (5.0%), anaemia (3.6%), miscarriage (2.6%), obstructed labour (2.5%), gestational diabetes (2.0%) and uterine rupture (1.4%). However, married women showed highest prevalence only in haemorrhage (6.0%), pre- eclampsia/ eclampsia (5.4%), placenta problems and premature rupture of membranes (4.3%). Further analysis of the data revealed that the overall prevalence of common pregnancy complications from 2010 to 2014 indicated that unmarried women had the higher prevalence of (52.7%) when compared with married women (47.3%) as shown in Figure 6.

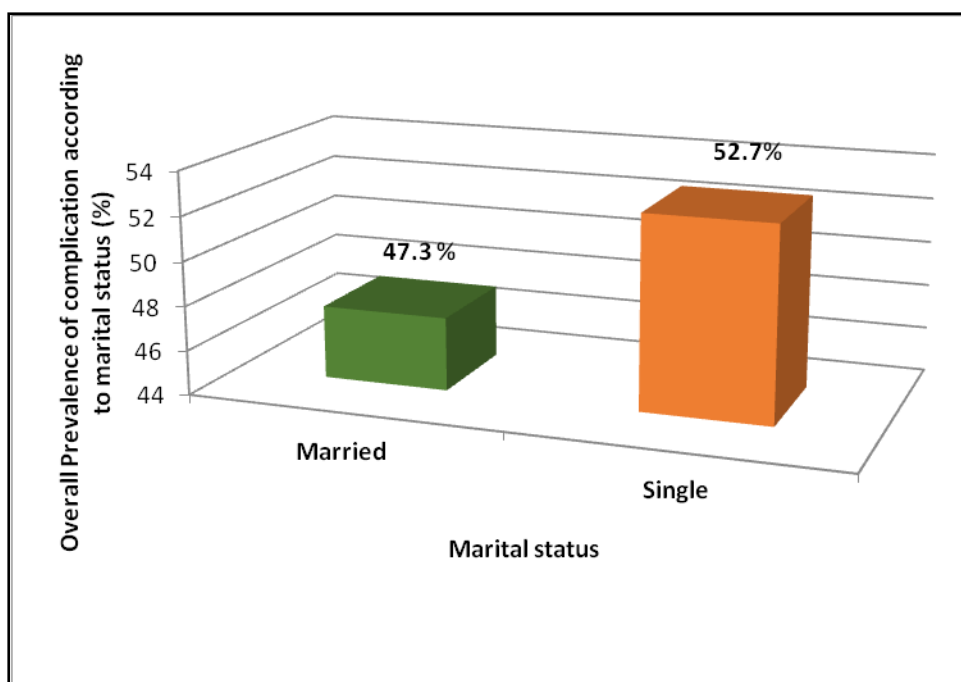


Figure 6: Bar Chart Showing the Overall Prevalence of Common Pregnancy Complications from 2010 to 2014 Based on Marital Status

The chi-square statistic result showed that calculated χ^2 value of 473.97 was greater than critical value of 22.36 at 13 degree of freedom and 0.05 level of significance. Therefore, the null hypothesis that there was no significant difference in the prevalence of common pregnancy complications between the married and the unmarried pregnant women in Owerri Capital Territory of Imo State from 2010 to 2014 was rejected. Conclusion drawn was that there was a significant difference in the prevalence of common pregnancy complications between married and the unmarried pregnant women in Owerri Capital Territory, from 2010 to 2014 (Appendix J).

Research Question 7: What is the difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014 Based on antenatal booking status?

Hypothesis 7: There is no significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, from 2010 to 2014 in relation to their antenatal booking status.

Data answering the above research question and hypothesis are shown in Table 7.

Table 7: Prevalence of Common Pregnancy Complications in Owerri Capital Territory from 2010 to 2014 Based on Antenatal Booking Status of the Subjects.

Common pregnancy complications	Antenatal booking status		Total	
	Booked	Unbooked	f	%
	f	%	f	%
Anaemia in pregnancy	279 (2.3)	497 (4.1)	776	(6.4)
Ectopic pregnancy	231 (1.9)	203 (1.7)	434	(3.6)
Gestational diabetes	183 (1.5)	215 (1.8)	398	(3.3)
Haemorrhage	659 (5.5)	641 (5.3)	1300	(10.8)
Hypertension	375 (3.1)	687 (5.7)	1062	(8.8)
Malaria	799 (6.6)	962 (8.0)	1761	(14.6)
Miscarriage	227 (1.9)	251 (2.1)	478	(4.0)
Obstructed labour	213 (1.8)	364 (3.0)	577	(4.8)
Placenta praevia and abruptio placenta	484 (4.0)	431 (3.6)	915	(7.6)
Pre-eclampsia/eclampsia	383 (3.2)	657 (5.5)	1040	(8.6)
Pre-mature rupture of membrane	302 (2.5)	534 (4.4)	836	(6.9)
Sepsis	312 (2.6)	534 (4.4)	911	(7.6)
Sexual transmitted infections	456 (3.8)	599 (5.0)	1241	(10.3)
Uterine rupture	143 (1.2)	174 (1.4)	317	(2.6)
Total	5046 (41.9)	7000 (58.1)	12046	(100.0)

χ^2 cal =222.56, critical value= 22.36, df = 13, p-value < 0.05

Table 7 presents the prevalence of common pregnancy complications of the pregnant women of the study in relation to their ante-natal book status. The table showed that unbooked women had highest prevalence of common pregnancy complications as: malaria (8.0%), hypertension (5.7%), pre-eclampsia/eclampsia (5.5%), sexually transmitted infections (5.0%), premature rupture of membrane and sepsis (4.4%), anaemia (4.1%), obstructed labour (3.0%), miscarriage (2.1%), gestational diabetes (1.8%) and uterine rupture (1.4%). However, booked women had the higher prevalence of haemorrhage (5.5%), and ectopic pregnancy (1.9%) when compared with unbooked women within the period of study.

Further analysis showed that the overall prevalence of common pregnancy complications of the unbooked women was 58.1 percent when compared with those of the booked women that was 41.9 percent, as shown in Figure 7.

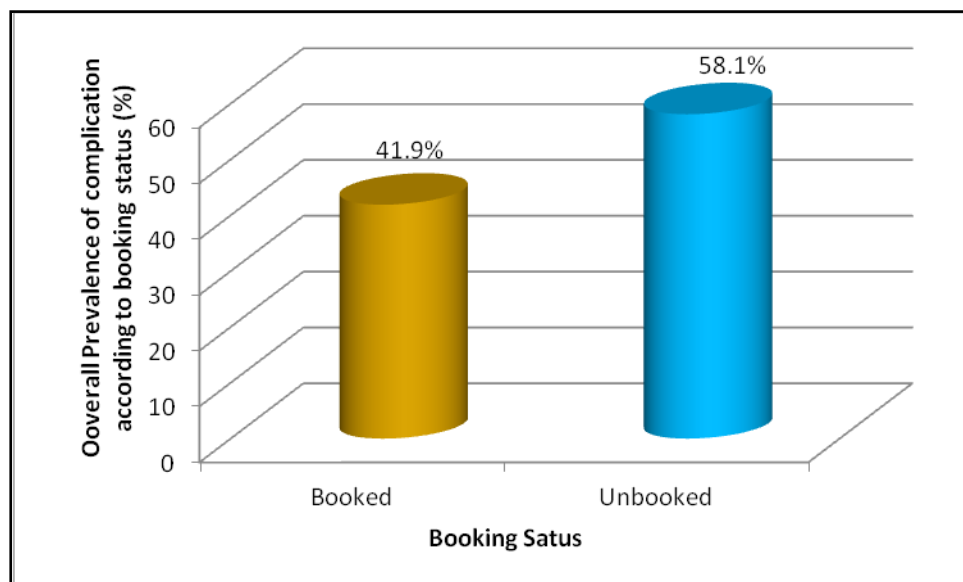


Figure 7: Bar Chart Showing the Overall Prevalence of Common Pregnancy Complications from 2010 to 2014 Based on Ante-natal Booking Status.

The chi-square statistic result showed that the calculated χ^2 value of 222.56 was greater than critical value of 22.36 at 13 degree of freedom and 0.05 level of significance. The null hypothesis was therefore rejected that there was no significant difference in the prevalence of common pregnancy complications among women in Owerri Capital Territory, from 2010 to 2014 in relation to their ante natal booking status. This implies that there was a significant difference in the prevalence of common pregnancy complications of the booked and unbooked pregnant women in Owerri Capital Territory of Imo State from 2010 to 2014. (see Chi-square χ^2 Table, Appendix K).

Research Question 8: What are the common pregnancy complications that resulted to maternal death among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014?

Hypothesis 8: There is no significant difference in the prevalence of common pregnancy complications that resulted to maternal death among pregnant women in Owerri Capital Territory of Imo State from 2010-2014.

Data answering research question 8 and hypothesis 8 are shown in Table 8.

Table 8: Common pregnancy complications that Resulted to maternal deaths among pregnant woman in Owerri Capital Territory, of Imo State, from 2010 to 2014.

Common pregnancy complications	f	Prevalence rate
Anaemia	9	0.04
Ectopic pregnancy	13	0.06
Gestational diabetes	9	0.04
Haemorrhage	16	0.07
Hypertension	19	0.09
Malaria	13	0.06
Miscarriage	15	0.07
Obstructed labour	11	0.05
Placenta praevia and abruptio placenta	6	0.03
Pre-eclampsia/eclampsia	21	0.10
Pre-mature rupture of membrane	1	0.01
Sepsis	31	0.14
Sexually transmitted infection	19	0.09
Uterine rupture	12	0.05
Total	195	0.88

χ^2 cal = 24.06, Critical value 19.81, df = 13, p > value = 0.05

Table 8 shows that the highest common pregnancy complications that resulted to maternal death among pregnant women within the period of study was 195 which shows (0.88) death rate. The table further indicates that the highest maternal death rate resulted from sepsis (0.14), others were pre-eclampsia/eclampsia (0.10), sexually transmitted infections (0.09), hypertension (0.09), haemorrhage (0.07) and miscarriage (0.07). The table also reveals that rupture of membranes (0.01), placenta problems (0.03), gestational diabetes (0.04), uterine rupture (0.05) and ectopic pregnancy (0.06) respectively accounted for the

lowest number of maternal deaths that resulted from common pregnancy complications within the period of study.

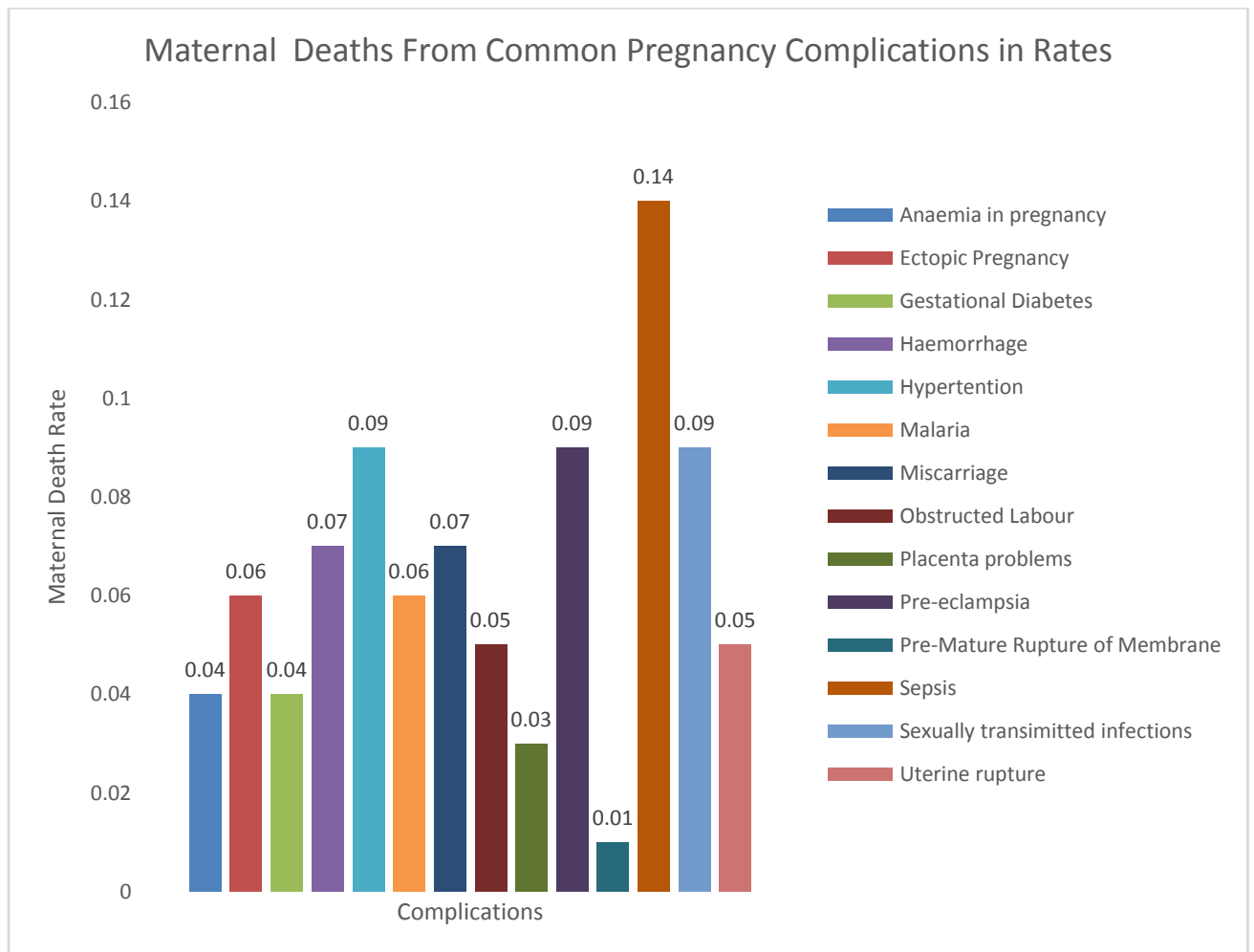


Figure 8: Bar chart showing the overall number of maternal deaths resulting from pregnancy complications

The chi-square (χ^2) analysis of the data showed that the calculated χ^2 value of 24.06 was less than the critical χ^2 table of 19.81 at 13 degree of freedom (df) and 0.05 level of significance. Hence, the null hypothesis was upheld that there was no significant difference in the prevalence of common pregnancy complications that resulted to maternal death among pregnant women in Owerri Capital Territory of Imo State from 2010-2014. Therefore, there was no significant difference in the number of maternal deaths that resulted from common pregnancy complications among pregnant women in Owerri Capital Territory over the five-year period. (Appendix L).

Summary of Major Findings

1. Prevalence rate of common pregnancy complications was high in Owerri Capital Territory over the five-year period. This revealed highest prevalence rates of malaria (7.9), haemorrhage (5.8) and sexually transmitted infections (5.6) while uterine rupture (1.4) recorded the lowest prevalence rate of these complications over the five-year period (Table 1, Figure 1).
2. Women in age bracket 35 years and above recorded the highest prevalence (35.4%). Lowest prevalence of these complications were recorded among the age bracket 15-24 years, (31.9%) as shown in Table 2, Figure 2.
3. The grand-multigravida (five deliveries and above) women had the highest prevalence of common pregnancy complications in relation to parity status of these women and the lowest prevalence of these complications was recorded among primigravida (only one delivery) 31.4% (Table 3, Figure 3).
4. Artisans had the highest prevalence (46.6%) of the common pregnancy complications, followed by housewives, (28.6%) while the civil servants had the lowest prevalence (27.9%) of common pregnancy complications (Table 4, Figure 4).
5. Non –literate women had higher (51.3%) prevalence of these complications compared with their literate counterparts, who had (48.7%) (Table 5, Figure 5) based on literacy status of these women.
6. Unmarried (single) women of the study recorded higher prevalence of common pregnancy complications (52.7%) than married women who recorded prevalence of (47.3%) (Table 5, Figure 6).
7. Unbooked women recorded highest prevalence (58.1%) of common pregnancy complications, when compared with the booked women that had 41.9% (Table 7, Figure 7).

8. Maternal deaths that resulted from common pregnancy complications over the five-year period 0.88 (maternal death rate). These indicated that the most common cause of maternal deaths resulted from sepsis (0.14), sexually transmitted infections (0.09) and pre-eclampsia/eclampsia (0.09) respectively while pre-mature rupture of membrane (0.01), placenta problems (0.03), gestational diabetes and anaemia (0.04) respectively Table 8, Figure 8).
9. There was statistically significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State over five-year period ($P < 0.05$).
10. There was statistically significant difference in the prevalence of common pregnancy complications among pregnant women of various ages in Owerri Capital Territory, from 2010 to 2014 ($P < 0.05$).
11. There was significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, from 2010 to 2014 with regards to various parity status ($P < 0.05$).
12. There was significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, from 2010 to 2014 based on their various occupations ($P < 0.05$).
13. There was significant difference in the prevalence of common pregnancy complications between literate and non-literate pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014 ($P < 0.05$).
14. There was significant difference in the prevalence of common pregnancy complications between married and unmarried pregnant women in Owerri Capital Territory, from 2010 to 2014 ($P < 0.05$).

15. There was significant difference in the prevalence of common pregnancy complications between the booked and unbooked pregnant women in Owerri Capital Territory of Imo State from 2010 to 2014 ($P < 0.05$).
16. There was no significant difference in the number of maternal deaths that resulted from common pregnancy complications among pregnant women in Owerri Capital Territory within the period ($P > 0.05$).

CHAPTER FIVE

DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

This chapter discussed the results of the study, implications of the study were stated and conclusions were drawn. Recommendations were also made, limitations of the study and suggestions for further studies were also outlined.

Discussion of Findings

The facts emerging from this study are discussed under the following sub headings:

- Results related to the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State from 2010 to 2014.
- Age and prevalence of common pregnancy complications.
- Parity and prevalence of common pregnancy complications among these women.
- Occupation and prevalence of common pregnancy complications.
- Literacy status and prevalence of common pregnancy complications.
- Marital status and prevalence of common pregnancy complications
- Ante-natal booking status and prevalence of common pregnancy complications
- Maternal deaths and common pregnancy complications.

Discussion of Results

The findings of the study on prevalence of common pregnancy complications showed high prevalence rate of these complications among pregnant women in Owerri Capital Territory over five-year period. There was statistically significant difference in the prevalence of common pregnancy complications among these pregnant women ($P < 0.05$).

The finding was expected and therefore not surprising. The result could be attributed to population explosion which is usually associated with urban areas such as Owerri Capital Territory; resulting from rural urban drift and non practice of family planning among these

women. They often bear many children based on the culture of the study area, where a woman is celebrated for giving birth to as many as fourteen children. Other possible reasons for high prevalence of these pregnancy complications might be as a result of lack of awareness of benefits of ante-natal clinic, poverty, non implementation of policies and programmes in maternal health and incessant strike actions by health workers.

The findings of this study supports UNFPA (2007) that pregnancy complications have remained abysmally high in developing countries and that it is estimated that approximately 40 percent of all women who give birth annually develop complications and 15 percent of pregnant women worldwide develop serious complications that could be potentially fatal. The findings explained what Ilika (2014) observed regarding health services related problems. Ilika noted that attitude of health workers, industrial actions embarked upon by health workers, non implementation of policies and programmes in maternal health and poor funding were major issues contributing to high prevalence of common pregnancy complications in developing countries such as Nigeria. The high prevalence rate of common pregnancy complications recorded among pregnant women in Owerri Capital Territory, Imo State is worrisome and needs urgent attention.

The highest prevalence rate of malaria recorded in this study was surprising. It might be that malaria control programmes have not been fully implemented by Federal and State governments, and donor agencies to stem the tide of prevalence of malaria infection in the country and Imo State in particular; such malaria control programmes include roll back malaria, use of Long Lasting Insecticide Treated Net (LLITN) and chemotherapy using anti-malaria combination therapy. Recently, free malaria testing and treatment were offered to pregnant women in the state to reduce malaria attack, a cause of serious pregnancy complications. Furthermore, malaria remains one of the most devastating diseases common in the tropics despite several years of concerted efforts made towards its control. Inadequate

knowledge of aetiology of malaria, coupled with some superstitions and myths surrounding the cause of malaria by these women, might be the reason for high prevalence of malaria recorded in this study area. Equally, Owerri Capital Territory could be regarded as a high transmission area for malaria taking cognizance of the topography of the area and poor drainage of flood in the capital territory. For this reason, pregnant women in this area suffer from malaria with its adverse health effects on them. The finding of this study agrees with that of Adefioye, et al. (2007), Chukwuocha, et al. (2012), and Saba, et al. (2008) who reported that pregnant women often have predisposition to malaria infection due to the presence of stagnant water resulting from inadequate knowledge of causes of malaria; and noted that the prevalence of malaria was higher and its severity greater in pregnant than non pregnant women. Chukwuocha, et al. further emphasized that environmental factors such as poor drainage (stagnant water) around the residence and at workplace greatly influenced the transmission of malaria among pregnant women. Chukwuocha, et al. however concluded that the incidence of malaria varied significantly according to the trimesters of the pregnant women, locations, level of education and occupations ($P < 0.05$). These variables have influence on the occurrence of malaria among pregnant women.

This is also in line with the view of Centre for Disease Control and Prevention (2010) which posited that malaria contributed significantly to maternal morbidity and caused an estimated 10,000 maternal deaths per year. Adefioye, et al. (2007) and Saba, et al. (2008) in agreement with the findings of this study, reported that malaria infection is a major common pregnancy complications experienced by pregnant women, particularly the multigravida, and majority of these women were in the second trimester of pregnancy. The study further revealed that haemorrhage recorded the second highest prevalence of common pregnancy complications within the period of study. This was not surprising. These women might not be able to recognize early signs or warnings of bleeding as a result of ignorance, poverty,

inadequate knowledge of pregnancy complications and non-attendance or irregular patronage of ante-natal clinics. The location of these hospitals to these women may also have contributed to high prevalence of these complications particularly, referral cases. The finding of this study is at variance with the findings of Mutihir and Utoo (2011) who reported a low prevalence of haemorrhage (2.7%) in a study on post partum maternal morbidity in Jos, North Central Nigeria. Mutihir and Utoo reported that there was a statistically significant relationship ($P < 0.05$) between occoucher (deliveries conducted by an obstetrician) and post partum maternal morbidity. Mutihir and Utoo also found out that two-thirds of these women were unbooked and had no regular ante-natal care and the hospitals used for the study were referral hospitals. This complication occurred pre-natally, in the course of labour and delivery. The findings of the present study is similar to the findings of Olowokere (2013) who discovered that most of the cases of bleeding were referrals from primary healthcare centres, state hospitals, private hospitals and mission/faith homes, traditional birth homes and patients who had delivery at home or on their way to the hospital. Similarly, Olowokere agrees with the findings of this study, and concluded that there was significant association between parity and occurrence of post partum haemorrhage (P.P.H) ($P < 0.05$). Parity status of the studied women influenced the occurrence of post partum haemorrhage among pregnant women.

Equally, the high prevalence rate of sexually transmitted infections recorded in this study was not surprising. Sexually transmitted infection is a public health and social problem globally that poses a major reproductive health problem. The reasons for high prevalence of STIs in this study area might be due to the fact that young adults who are more at risk, formed a greater proportion of the population. Urban drift and limited access to treatment, cost of accessing treatment and stigmatization, might result to high prevalence of STIs. High prevalence of sexually transmitted infections in Owerri Capital Territory might also be as a

result of poor sexual attitude of these women towards protective sex, especially those who have multiple sex partners.

The finding of this study on STIs, agrees with the report of Aboyeji and Nwabuisi (2003) who, in their study on prevalence of sexually transmitted disease among pregnant women in Ilorin, Western Nigeria recorded high prevalence of STDs in asymptomatic pregnant women ($P < 0.05$). Okonko, et al. (2012) also reported high prevalence of sexually transmitted infections (STIs) in 151 females out of 200 patients that were infected with various STI agents ($P < 0.05$).

The lowest prevalence rate of common pregnancy complications recorded in Owerri Capital Territory were; uterine rupture and gestational diabetes. The finding was surprising because uterine rupture and gestational diabetes that recorded very low prevalence rate could be attributed to under-reporting (by hospital authorities) as these complications are life-threatening and fatal which require extreme medical emergency. Sometimes, these women may die on the way before reaching the hospital for medical attention. The same reasons may also explain the low prevalence rate of ectopic pregnancy. These women may also patronize faith clinics and quacks in order to reduce hospital bills. This corroborates Okonofua (2009) and Onwudiegwu (2011) who pointed out that user charges adopted in hospitals discouraged women from attending ante-natal clinics and for delivery of their babies, resulting in many complications and avoidable deaths. Pregnancy that ravages the life of pregnant women is still a very big challenge to the health sector in Owerri Capital Territory, Imo State, Nigeria.

Age and Prevalence of Common Pregnancy Complications

Pregnant women within the age bracket of 35 years and above had the highest prevalence (35.4%) of common pregnancy complications from 2010 to 2014, while women within the age group 15-24 years, recorded lowest prevalence of (31.9%) (Table 3, Figure 3). Prevalence of common pregnancy complications among pregnant women differ significantly

based on various ages ($P < 0.05$). The findings were, however, not surprising and were expected. The age group of 35 years and above is the most vulnerable to common pregnancy complications probably because of their desire to have many children and for the fact that some pregnant women married at older age, while some of these women lack knowledge and practice of family planning. This result could also be explained by the fact that the biological features of the older age group (35 years and above) are weak and degenerating, therefore would not withstand the stress of pregnancy, which make them more vulnerable to pregnancy complications. The lowest prevalence of these complications recorded among the age bracket of 15-24 years in this study might be as a result of not practising child-marriage. The parents in Owerri Capital Territory might be aware of the health implications of early marriage and might be discouraging their children from such practices.

The finding of this study is in consonance with Bradford, David and Siefer (2009) who observed that the human reproduction is profoundly influenced by age. Bradford, et al. maintained that the effect of age on human reproduction is complicated by the numerous physiological changes occurring in women as they age, coupled with powerful environmental and socio-economic conditions exerting external influence on them. Baabian (2010) and WHO (2008) in agreement with the above observations attested that common pregnancy complications vary with the age of mother and added that in developing countries of the world, age at delivery has a positive association with common pregnancy complications and strongly upheld that women who are below 17 years and above 35 years are likely to become victims of common pregnancy complications. In support of the findings of this study, Adams, et al. (2005); Aghamohammadu, et al. (2011); Isdor and Rayatu (2011); Jolly, et al. (2000); Khaskaheli, et al. (2013); Moscrop (2013) and Muataz, et al. (2006) confirmed-that advanced maternal age influence the prevalence of common pregnancy complications ($P < 0.05$).

Although the age group 15-24 years had the lowest prevalence of pregnancy complications, it is noted that it had highest prevalence of malaria infection. This was not surprising and expected because the women in the age group 15-24 years are likely to have stronger immunity, lower parity, and regular attendance to ante-natal clinic for pre-natal care, where they acquire knowledge about preventive measures of malaria. This would most likely reduce prevalence of malaria in this age group. Adefioye, et al. (2007) agreed with the above findings and reported that age group 15-24 years recorded high prevalence of malaria, and had 70 percent, though lower prevalence when compared with 76 percent and 88.2 percent in age group 32-35 years and 36-39 years respectively. Adefioye concluded that there was no significant difference ($P < 0.05$) in the prevalence of common pregnancy complications when compared with advanced maternal age and women of younger age. Furthermore, Kwame, et al. (2010) also corroborates with the finding of the present study and reported that young pregnant women are susceptible to malaria infection.

Parity Status and Prevalence of Common Pregnancy Complications

Results from this study showed that grand-multigravida women (five deliveries and above) had the highest prevalence (36.1%) of common pregnancy complications, while the lowest prevalence (31.4%) was recorded for primigravida (one delivery only). There was significant difference in the prevalence of common pregnancy complications among pregnant women with regard to various parity status ($P < 0.05$). Highest prevalence of common pregnancy complications was recorded among grand-multigravida in the following complications; haemorrhage, pre-eclampsia/ eclampsia, hypertension, obstructed labour, placenta problems, sepsis and uterine rupture (Table 3, Figure 3). The highest prevalence of common pregnancy complications experienced by grand-multigravida was not surprising and was expected. The above findings might be attributed to the fact that the women in this parity group (grand-multigravida) might be older with degenerating body organs and systems that

predispose them to common pregnancy complications. Furthermore, it might be that grand-multiparavida often neglect ante-natal care, believing that they have had uncomplicated pregnancies and deliveries in pervious pregnancies and this might predispose them to pregnancy complications. In support of the above findings, Onuzulike (2009) observed that parity status is associated with level of education, level of income and other socio-demographic factors as well as social class. Onuzulike observed that there was a significant difference ($P < 0.05$) in high parity (grandmultiparity) status when compared to low parity status (nulliparity, primiparity and multiparity. Also Bennette and Brown (2010); Damaru (2009); Idowu, et al. (2005); Ogbonna (2005) and WHO (2008) noted that significantly women with high parity > 4 deliveries were among the group of women who suffered common pregnancy complications most ($P < 0.05$).

However, the observations of Hoque, et al. (2008) and Kaur, et al. (2012) were at variance with the findings of the present study and reported that the rate of obstetric complications were higher in primiparous women, compared to other parity groups (grandmultiparous and multiparous women) and observed that there was no significant difference ($P > 0.05$) in the prevalence of common pregnancy complications among primiparous women, when compared with other parity groups. Hoque, et al. concluded that grand-multiparavida was not a risk factor for certain pregnancy complications such as intra-uterine fetal death, low birth weight and pre-term delivery; and that majority of ante-natal medical disorders were not significantly different compared to nulliparous (no delivery) and multiparavida. Hoque, et al. concluded that grandmultiparity was not a risk factor for some pregnancy complications. However, they were more likely to have ante partum haemorrhage than nulliparous women.

Occupation and Prevalence of Common Pregnancy Complications

The findings of this study showed that artisans had the highest overall prevalence (43.6%) of common pregnancy complications, indicating highest prevalence of malaria (6.5%) and sexually transmitted infections, (5.9%). Civil servants recorded the lowest overall prevalence (27.9%) of common pregnancy complications but had the highest prevalence (5.0%) of haemorrhage, (Table 5, and Figure 5). Prevalence of common pregnancy complications among pregnant women of the study differ significantly based on their various occupations ($P < 0.05$). The findings were anticipated and not a surprise. A possible explanation of this scenario could be attributed to the nature of their job (self employment). For the fact that they are entrepreneurs, what they get from their daily job is their only source of income. Moreover, artisans are mainly low income earners because of their lower occupational status; this might not be unconnected with their inability to afford quality obstetric care. These reasons might make them not to attend ante-natal clinic, considering the long waiting hours at the clinics and the cost of accessing such health services.

In support of the findings of this study, International Labour Organizations (2010) observed that many of these occupations women engage in do not safeguard them against vulnerability and not allow them have access to healthcare. ILO concluded that there was a significant difference ($P < 0.05$) in the proportion of women who were not gainfully employed (artisans and housewives) that resulted to common pregnancy complications, when compared with their counterparts who had good jobs. Also Bozini, et al. (2009); Ronda, et al. (2009) and Talamenca (2006) whose reports were in consonance with the result of the present study, observed that high stress at work were associated with increased risk for spontaneous abortion or miscarriage ($P < 0.05$); and that there was strong association for primiparity with small for gestational age and noted that job stress carried a nearly threefold elevation in risk for miscarriage and preterm delivery.

The findings of this study also showed that the artisans had the highest prevalence of malaria and sexually transmitted infection. This was not surprising because people in this occupation either had their residence or offices in slumps or overcrowded areas which were good breeding places for mosquitoes which accounted for high prevalence of malaria. The finding of this study agrees with the findings of Chukwuocha, et al. (2012) who reported that pregnant women suffer malaria infections due to poor environmental factors around their residence and workplace and that this greatly influences the transmission of malaria in endemic areas such as Nigeria.

Furthermore, the high prevalence of sexually transmitted infection recorded among artisans is not surprising. This could be that these artisans were traders/ travellers, or involved in other activities that exposed them to negative sexual behaviour that resulted in high prevalence of STIs. Aboyeji and Nwabuisi (2003) and Okonko, et al. (2012), in line with the present study reported that sexually transmitted infections remained the major burden of pregnancy complications experienced by pregnant women especially HIV and AIDS through sexual contact. The lowest overall prevalence of common pregnancy complications recorded among civil servants was also not surprising because this group of women had a higher occupational status, and they are likely to earn high income with good literacy status. These variables might be responsible for the lowest prevalence of common pregnancy complications in this occupational group. It is also disappointing to note that this group (civil servants) had the highest prevalence of haemorrhage (bleeding).

The finding is surprising because pregnant women who work in ministries and agencies have some degree of privileges in terms of various types of leave they enjoy on yearly bases, ranging from annual leave, casual leave, and maternity leave. All these are to ensure that pregnant women take care of their health as well as safeguard the health of the unborn babies. It is also pertinent to note that these women are not denied the opportunity to

go for routine ante-natal care and even to consult the doctor if the need arises; especially in the current dispensation when National Health Insurance Scheme (NHIS) reduces the cost of hospital bill.

Furthermore, the findings of this study showed that housewives had overall prevalence (28.6%) of common pregnancy complications (Table 4, Figure 4) slightly above that of the civil servants who had (27.9). This was not surprising because these women were unemployed. The majority of housewives are likely to be non-literate with high parity status and do not earn income. These factors might have hindered them from accessing healthcare services and pay hospital bills. The findings of this study corroborates Eboiyehi, et al. (2008), Food and Agricultural Organization (2010) and World Bank (2005) who observed that many Nigeria women, especially pregnant women were not gainfully employed; that many of them worked in their husbands' farms and in their homes and as such could not afford the cost of health services and observed that there was significant difference in the prevalence of common pregnancy complications based on the occupation of these women ($P < 0.05$). This reiterates the fact that occupations of these women have negative implication for prevalence of common pregnancy complications.

Literacy Status and Prevalence of Common Pregnancy Complications

Non-literate women in this study had a higher (51.3%) prevalence of common pregnancy complications compared with their literate counterparts who had (48.7%) (Table 5, Figure 5). There was a significant difference in the prevalence of common pregnancy complications between literate and non-literate women of the study ($P < 0.05$). The findings of this study were not surprising as they were anticipated. This observation might be possible for several reasons among which are ignorance and lack of knowledge for the need to seek healthcare services from professionals among non literate women. Non-literate women suffered greater number of common pregnancy complications because they were likely not to

have good jobs and good income. They might not also be part of decision-making in their homes. They might be unable to communicate with spouses about family decisions, use of various family planning methods to encourage child spacing to prevent common pregnancy complications.

The finding of this study was in agreement with the observation by Bankole and Eboiyehi (2003) who noted that many Nigeria women were still illiterate, which has negative implications for maternal mortality resulting from pregnancy complications. Bankole and Eboiyehi explained that education enhances a woman's participation in decision making at home, which has a lot of implications for prevalence of common pregnancy complications. Accordingly, World Bank (1999) observed that educated women are able to communicate better with their spouses about family decisions and use of contraception which can avert negative health consequence of pregnancy complications.

The findings of Sarode (2010) in a study on the influence of illiteracy on pregnancy complications among women in Slum of Greater Mumbai, indicated that (47%) of the women in the study area reported at least one problem during pregnancy. Sarode also reported that the attendance to ante-natal visits by pregnant women increased with the rise in the position of women with respect to socio-economic factors such as literacy status. Persons with high level of education use preventive and curative approaches to avert health-related complications more than those with low level of education (Apter, 2009; Carl, 2007; Diana & Hamilton, 2011 & Leridon, 2005). This is an important observation since common pregnancy complications are health problems that require preventive health care approach. Ayuba, et al (2012); Beckette, et al. (2010) and Damaru (2009) had similar reports that nine out of every ten non-literates suffered reproductive tract infections (sepsis), and prevalence of anaemia was higher among the illiterate pregnant mothers and that these women were at risk of pregnancy complications such as anaemic heart failure ($P < 0.05$). Their findings also

showed that pregnant women, who, in their teens had less formal education, were unemployed, likely to be unmarried and with inadequate ante- natal care and obstetric risks which result to poor pregnancy outcome of the non-literate women.

Furthermore, the result of the study revealed that the literate women had the highest prevalence of these complications in only four pregnancy complications. This was not surprising due to the possible reasons that this group of women was likely to adopt behaviours and possess characteristics that promote good health and reduce pregnancy complications. Interestingly, both the literate women and the non-literate women of this study showed equal prevalence (3.2%) each of anaemia. This was not surprising because literate women and non-literate groups were likely to have been influenced by their feeding pattern and for the fact that the abundant and cheaper staple food in Nigeria is more of high calorie diets. Equally, cultural factors such as superstition, taboos and other negative cultural practices might have resulted to the above observation. On the other hand, the literate women of the study might have adequate nutritional knowledge, attend ante-natal clinic where they access health information, had good job and good income but may not practice the knowledge acquired and might be affected by food preferences that resulted to anaemia. There was a significant difference ($P < 0.05$) between the literate and non-literate pregnant women. Literacy status of these women had influence in the prevalence of common pregnancy complications.

Marital Status and Prevalence of Common Pregnancy Complications

The findings of the study showed that the unmarried women of the study recorded the highest prevalence (52.7%) of common pregnancy complications while married women recorded lowest prevalence (47.3%) of these complications (Table 6, Figure 6). There was a significant difference in the prevalence of these complications in the married and unmarried women in Owerri Capital Territory ($P < 0.05$). Married women had highest prevalence of

pre-eclampsia/eclampsia (5.4%), haemorrhage (6.0%) and malaria (7.2%). The unmarried women had the highest prevalence of sepsis of (5.0%), sexually transmitted infections (5.9%) and malaria (7.3%). That the married women in this study had low prevalence of pregnancy complications compared to their unmarried counterparts was expected. The possible reasons for this observation were; that the married women in Owerri Capital Territory might be at an advantage, as they might be enjoying the emotional and financial support of their husbands, particularly where their husbands encourage them to bear more children which are usually celebrated as their culture demands. However, married women who are unemployed might not attend regular ante-natal clinic and hospitals of their choice inspite of the expertise and equipment available in such hospitals, but might always depend on the decision of their husbands which may result to high prevalence of common pregnancy complications among this group. On the other hand, the unmarried pregnant women might not enjoy such privileges, probably due to poverty and lack of emotional support which predisposed them to high prevalence of common pregnancy complications. This corroborates the findings of other studies which reported strong association between pregnancy complications and marital status ($P < 0.05$) (Ayuba, et al. 2012; Harrison, 1995; Sarode, 2010 & Stephenson, 2008).

Ante-natal Booking Status and Common Pregnancy Complications

The findings of this study revealed that the ante-natal booking status of pregnant women in Owerri Capital Territory indicated a higher prevalence (58.1%) of common pregnancy complications, compared to those of unbooked women who had 41.9% prevalence (Table 7, Figure 7). There was a significant difference in the prevalence of common pregnancy complications of the booked and unbooked ($P < 0.05$).

The finding of this study was however not surprising. It was expected that in an urban area, pregnant women should be aware of the benefits of ante-natal care services coupled

with their accessibility to these hospitals but it is not the case in the present study. The reasons might be that some of these women booked late, were irregular in attendance to antenatal clinic, did not book or some might have been cases of referrals from health centres and other hospitals. Furthermore, these women might have been of higher parity and unmarried. This invariably might have contributed to increased prevalence of these complications among unbooked women of this study.

Akhigbe, et al. (2008); Bondel and Marshall (2007), in support of the findings of this study observed that there was a significant difference ($P < 0.05$) of the booked women of the study when compared with their unbooked counterparts, and reported that maternal characteristics of the unbooked mothers were significantly different from those of booked mothers. Compared to booked mothers, unbooked mothers were younger in age, had a higher tendency of being unmarried and had a lower educational status and were of lower social class. There was a significant difference ($P < 0.05$) in the prevalence of common pregnancy complications of the booked and unbooked in Owerri Capital Territory. Supposedly, antenatal booking status of the study women influenced the prevalence of common pregnancy complications in Owerri Capital Territory.

The higher prevalence of common pregnancy complications in this study indicated that booked mothers had only four pregnancy complications with malaria and haemorrhage taking the lead. This was also surprising because, it was expected that the booked mothers should have adequate knowledge of these complications and their preventive measures. Moreover, these women were often given preventive therapy/medication to prevent malaria. The finding of this study was in consonance with Adefioye, et al. (2007) who studied prevalence of malaria parasite infection among pregnant women in Oshogbo, Southwest, Nigeria, and reported that overall (72%) of pregnant women investigated were found to have malaria as a common pregnancy complication. Similarly, higher prevalence of haemorrhage

reported in the present study agreed with the findings of Akhigbe, et al (2008) who reported that the booked mothers significantly had increased incidence of ante-partum haemorrhage, anaemia and pre-eclampsia ($P < 0.05$).

Maternal Death and Common Pregnancy Complications

Maternal death that resulted from common pregnancy complications over the five-year period was 0.88. These indicated that the highest maternal death rates resulted from sepsis (0.14), sexually transmitted infections (0.10) and pre-eclampsia/eclampsia (0.09) respectively, while pre-mature rupture of membrane (0.01), placenta problems (0.03), gestational diabetes and anaemia (0.04) each resulted to lowest maternal death. Maternal deaths that resulted from common pregnancy complications among pregnant women did not differ significantly ($P > 0.05$) over five-year period in Owerri Capital Territory of Imo State.

This result was not surprising. It was anticipated. The possible reasons might be deduced from the fact that these pregnancy complications were life-threatening conditions and are usually fatal. Poor referral and logistic system in Nigeria healthcare delivery system, coupled with inadequate manpower as often observed in some hospitals and health centres in Owerri Capital Territory might have contributed to the number of deaths that resulted from pregnancy complications recorded in this study. The results of this study were in consonance with Ilika (2012) who observed that poor and unsatisfactory health services, poor referral and logistic problems predispose the women of this study to death. Moreover, these women might have patronized unskilled health attendants in unhygienic conditions, traditional birth homes and other unqualified medical personnel. These actions could increase the risk of these women to suffer complications such as sepsis which could result to maternal death.

The findings of this study corroborate Bauserman, et al. (2014) Khaskheli, et al. (2013), and Sarode (2010) who reported that most of the cases that resulted to maternal death were referrals from suburbs who had unnecessary labour induction with improper sterilization of instruments (medical equipments) used by unskilled health personnel. The

maternal mortality in their studies recorded 145 maternal deaths/ 100,000 deliveries which resulted in MMR of 153/100,000. However, Mojekwu and Ibekwe (2014) identified pre-eclampsia/ eclampsia as the least cause of maternal death in contrast to the present study which recorded a high maternal death rate.

Furthermore, sepsis, pre-eclampsia/eclampsia, sexually transmitted infections and hypertension resulted to the highest number of deaths. The finding corroborates Harrison (1985) who reported that the most common causes of maternal death were bacterial infection (sepsis), haemorrhage, pre-eclampsia/eclampsia and pregnancy induced hypertension. Although sexually transmitted infections such as (retroviral infections) is an emerging disease but was among the highest prevalence of STIs that caused maternal death within the period of study. The lowest maternal death that resulted from common pregnancy complications recorded in the present study was pre-mature rupture of membranes and placenta problems. This was not surprising because these complications were obstetric emergencies that required urgent medical attention. Under-reporting and inadequate record keeping of maternal deaths resulting from non-adoption of computerized data bank by some hospitals might have reflected the low prevalence of pregnancy complications that resulted to death of these women. Lack of in-service training of existing medical record officers can also be implicated. These observations highlighted the continued challenge of prevalence of common pregnancy complications and maternal deaths in Owerri Capital Territory, Imo State.

Implications of the Study

The prevalence rate of common pregnancy complications recorded in this study was high. This implies that a large population of pregnant woman in Owerri Capital Territory, Imo State suffered these complications between 2010 and 2014. The implication is obvious, unless a lot more intervention strategies are put in place, or those in existence made more

effective than what is obtainable presently, it would obviously be difficult to bring down the morbidity and mortality figures presently recorded in Owerri Capital Territory, Imo State. This is why the attention of the government and other stakeholders, at all levels, should be drawn to the findings of this study to enable them act fast and salvage the situation from getting worse.

It is important to note that greater proportion of pregnancy complications were discovered among the age group of 35 years and above in Owerri Capital Territory, Imo State. The implication is that high concentration of common pregnancy complications would be found in this age group, and if comprehensive maternal health services are not provided to prevent such situations, many more pregnant women would experience these complications. Consequently, there would be over-stretching of the capacities of the few hospitals and health centres if effort is not made to contend with high prevalence of common pregnancy complications.

Parity status of pregnant women in the prevalence of common pregnancy complications within the period under study is a challenge, indicating that grand-multigravida (five deliveries and above) women had the highest prevalence of common pregnancy complications. The implication of this revelation is that the pregnant women in Owerri Capital Territory do not take family planning seriously. Therefore, more aggressive enlightenment programme on family planning should be carried out through persuasive communication to encourage pregnant women to adopt family planning. Equally, occupations of the pregnant women adversely affected their health status, which was observable among artisans recording the highest prevalence of these complications. Common pregnancy complications will continue to impact negatively on their health unless these women are provided with decent work and safe environment devoid of hazardous substances.

Literacy status of pregnant women in this study is of great concern. It was observed that the prevalence of common pregnancy complications were higher among non-literate women than the literate women. This invariably indicated that greater number of non-literate women had common pregnancy complications. This implies that the trend may likely increase if the literacy status of the target group (pregnant women) does not improve.

Furthermore, the unmarried women of the study recorded the highest prevalence of common pregnancy complications; unlike the married women who recorded low prevalence indicating that marital status of these women have impact on the prevalence of common pregnancy complications. Therefore, single women, widows, divorced, separated and those not yet married need assistance in form of free maternal health services and reduction of hospital bill. They should also be included in the National Health Insurance Scheme (NHIS) to reduce their financial burden. On the ante-natal booking status of these women, unbooked pregnant women of the study recorded a higher prevalence of common pregnancy complications compared to booked women. The implication of this finding is that pregnant women in Owerri Capital Territory are not aware of the benefits of attending ante-natal clinic. The unbooked pregnant women therefore need to be educated on dangers of pregnancy complications in order to improve the maternal health status of the populace.

Finally, maternal deaths that resulted from pregnancy complications in this study was high. This reinforces the fact that common pregnancy complications are life threatening illnesses and if not given prompt medical attention, no matter how mild or less serious it may appear, can result to death.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

There was high prevalence rate of common pregnancy complications among pregnant women over a five-year period in Owerri Capital Territory of Imo State. The prevalence of common pregnancy complications among pregnant women differ significantly ($P < 0.05$) based on the years.

Age was found to be a significant factor that influenced the prevalence of common pregnancy complications among pregnant women with a statistically significant difference ($P < 0.05$). Pregnant women within the age bracket of 35 years and above had the highest common pregnancy complications; though not statistically significant difference from the age group 15-24 years.

The target group with high parity status; grandmultiparity (five deliveries and above) had the highest prevalence of common pregnancy complications than primipgravidia (women who had only one delivery) indicating that there was statistically significant difference ($P < 0.05$). Therefore, parity status influenced the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory, Imo State.

The occupation of the target group influenced the prevalence of common pregnancy complications which revealed that there was statistically significant difference ($P < 0.05$). Precisely, artisans indicated the highest prevalence when compared to other groups. Thus, the occupation of these pregnant women influenced the prevalence of common pregnancy complications in Owerri Capital Territory, Imo State.

The literacy status of these women influenced the prevalence of common pregnancy complications among pregnant women of the study with statistically significant difference ($P < 0.05$). Non-literate women of the study revealed higher prevalence while the literates had

low prevalence of these complications. The conclusion drawn was that literacy status was a strong determinant of maternal morbidity and mortality in our environment.

Marital status of the pregnant women of the study influenced the prevalence of common pregnancy complications; prevalence of these complications among pregnant women differs significantly based on marital status ($P < 0.05$). Thus, unmarried (single) women had higher prevalence than married women. Marital status of these women has impact on the prevalence of common pregnancy complications in Owerri Capital Territory, Imo State.

Unbooked pregnant women had a higher prevalence of common pregnancy complications than the booked women of the study in relation to their booking status. Thus, ante-natal booking status influenced the prevalence of these complications among pregnant women with a statistically significant difference ($P < 0.05$) in Owerri Capital Territory Owerri.

Finally, maternal death rate that resulted from common pregnancy complications in this study was high based on the years; showing no significant difference ($P > 0.05$), as the majority of the pregnancy complications studied resulted to maternal deaths.

Recommendations

The following recommendations were made based on the findings of the study:

1. Federal and state governments should establish additional hospitals and health centres that offer specialized healthcare services to complement the existing ones in serving the enormous healthcare needs of the large population of pregnant women. Federal and state government, as well as other non-government organizations should avail these women of the opportunity to have free maternal health services to improve their health status.

2. Health educators should encourage women of 35 years and above, through health talks, seminars and workshops to practice family planning to reduce common pregnancy complications that may occur. The adolescents should also be discouraged, through sex education, from engaging in early marriage.
3. Comprehensive maternal health services should be provided for pregnant women, especially the multigravidae and grand-multigravidae by the federal and state governments to ensure that these women have better maternal and fetal outcome.
4. Federal and state government should enact laws, through legislation, to ensure that women who engage in different occupations are protected. This can be achieved through reducing long hours of hard work, providing decent work and ensuring that they have weekly and annual rest including maternity leave.
5. Pregnant women should be encouraged by health workers to book in well equipped hospitals with qualified health personnel and facilities, particularly women who are at risk of developing common pregnancy complications.
6. Curriculum planners should include reproductive health in the school curriculum of secondary schools and tertiary institutions. Similarly, health education department in schools and colleges need to organize community-based campaigns on pregnancy complications and outcomes. This will increase the knowledge and positive attitude of unmarried pregnant women towards positive health behaviour which would result in the reduction of maternal morbidity and mortality. This will also enable the mothers-to-be, to realize the importance of availing themselves of maternal health care services such as ante-natal and postnatal clinic, and identifying the possible symptoms of major causes of maternal deaths and avert the negative health consequences.

Limitations of the Study

The incessant industrial actions (strike) among health workers witnessed in recent times in Imo State, in particular, and Nigeria in general, affected the collection of the data used for the study. This might have resulted to pregnant women seeking for healthcare needs outside the state, which may have altered the result presented in this work.

Suggestions for Further Research

The researcher suggests that further studies be carried out in the following areas:

1. Development of intervention health education programme for reduction of common pregnancy complications for pregnant women in Owerri, Imo State.
2. This study can be replicated in other states in Nigeria.

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Appendix E

Computation of Chi Square (χ^2) Table

Hypothesis 1: There is no significant difference in the prevalence of common pregnancy complications among pregnant women in Owerri Capital Territory of Imo State, from 2010 to 2014.

Complications	Frequency	Prevalance rate	χ^2 cal	df	α	χ^2 tab	Decision
Anaemia in pregnancy	776	3.5	154.48	13	0.5	19.81	Ho rejected
Ectopic pregnancy	434	2.0					
Gestational pregnancy	398	1.8					
Haemorrhage	1300	5.8					
Hypertension	1062	4.8					
Malaria	1761	7.9					
Miscarriage	478	2.2					
Obstructed labour	577	2.6					
Placenta problems	915	4.1					
Eclampsia/pre-Eclampsia	1040	4.7					
Pre-mature rupture of membrane	836	3.8					
Sepsis	911	4.1					
Sexually transmitted diseases	1241	5.6					
Uterine rupture	317	1.4					
TOTAL	12046	54.1					

		Year					Total
		2010	2011	2012	2013	2014	
Anaemia in pregnancy	Observed frequency	141	152	146	163	174	776
	Expected Frequency	147.9	149.5	149.0	158.2	171.4	776.0
Ectopic pregnancy	Observed frequency	97	88	84	77	88	434
	Expected Frequency	82.7	83.6	83.3	88.5	95.9	434.0
Gestational diabetes	Observed frequency	54	64	61	100	119	398
	Expected Frequency	75.9	76.7	76.4	81.1	87.9	398.0
Haemorrhage	Observed frequency	263	235	245	276	281	1300
	Expected Frequency	247.8	250.4	249.6	265.1	287.2	1300.0
Hypertension	Observed frequency	202	210	197	222	231	1062
	Expected Frequency	202.4	204.5	203.9	216.5	234.6	1062.0
Malaria	Observed frequency	356	400	321	296	388	1761
	Expected Frequency	335.7	339.2	338.1	359.0	389.0	1761.0
Miscarriage	Observed frequency	76	94	87	106	115	478
	Expected Frequency	91.1	92.1	91.8	97.5	105.6	478.0
Obstructed labour	Observed frequency	108	118	91	104	156	577
	Expected Frequency	110.0	111.1	110.8	117.6	127.5	577.0
Placenta problems	Observed frequency	191	183	170	179	192	915
	Expected Frequency	174.4	176.2	175.7	186.6	202.1	915.0
Pre-eclampsia	Observed frequency	203	209	199	210	219	1040
	Expected Frequency	198.2	200.3	199.7	212.0	229.7	1040.0
Pre-mature Rupture of Membrane	Observed frequency	171	155	161	174	175	836
	Expected Frequency	159.3	161.0	160.5	170.4	184.7	836.0
Sepsis	Observed frequency	200	163	171	183	194	911
	Expected Frequency	173.6	175.5	174.9	185.7	201.2	911.0
Sexually transmitted infections	Observed frequency	175	187	323	300	256	1241
	Expected Frequency	236.5	239.0	238.3	253.0	274.1	1241.0
Uterine rupture	Observed frequency	59	62	57	66	73	317
	Expected Frequency	60.4	61.1	60.9	64.6	70.0	317.0
Total	Observed frequency	2296	2320	2313	2456	2661	12046
	Expected Frequency	2296.0	2320.0	2313.0	2456.0	2661.0	12046.0

Chi-Square Tests

	Value	df	P-value
Pearson Chi-Square	154.484	13	.000

Appendix F

Hypothesis 2: There is no significant difference in the prevalence of common pregnancy complications among pregnant women of various ages in Owerri Capital Territory of Imo State.

Complications	AGE				χ^2 cal 1631.317	df 26	α 0.05	χ^2 tab 15.4	Decision Ho Rejected
	15-24yrs	25-34yrs	35yrs +	Total					
Anaemia in pregnancy	315	211	250	776					
Ectopic pregnancy	133	201	100	434					
Gestational pregnancy	88	120	190	398					
Haemorrhage	199	717	384	1300					
Hypertension	88	393	581	1062					
Malaria	997	391	373	1761					
Miscarriage	104	213	161	478					
Obstructed labour	134	160	283	577					
Placenta problems	214	198	503	915					
Eclampsia/pre- Eclampsia	403	219	418	1040					
Pre-mature rupture of membrane	223	312	301	836					
Sepsis	326	283	302	911					
Sexually transmitted diseases	520	417	304	1241					
Uterine rupture	102	97	118	317					
Total	3846	3932	4268	12046					

Complication		Age			Total
		15-24yrs	25-34yrs	35yrs+	
Anaemia in pregnancy	Observed frequency	315	211	250	776
	Expected Frequency	247.8	253.3	274.9	776.0
Ectopic pregnancy	Observed frequency	133	201	100	434
	Expected Frequency	138.6	141.7	153.8	434.0
Gestational diabetes	Observed frequency	88	120	190	398
	Expected Frequency	127.1	129.9	141.0	398.0
Haemorrhage	Observed frequency	199	717	384	1300
	Expected Frequency	415.1	424.3	460.6	1300.0
Hypertension	Observed frequency	88	393	581	1062
	Expected Frequency	339.1	346.7	376.3	1062.0
Malaria	Observed frequency	997	391	373	1761
	Expected Frequency	562.2	574.8	623.9	1761.0
Miscarriage	Observed frequency	104	213	161	478
	Expected Frequency	152.6	156.0	169.4	478.0
Obstructed labour	Observed frequency	134	160	283	577
	Expected Frequency	184.2	188.3	204.4	577.0
Placenta problems	Observed frequency	214	198	503	915
	Expected Frequency	292.1	298.7	324.2	915.0
Pre-eclampsia	Observed frequency	403	219	418	1040
	Expected Frequency	332.0	339.5	368.5	1040.0
Pre-mature Rupture of Membrane	Observed frequency	223	312	301	836
	Expected Frequency	266.9	272.9	296.2	836.0
Sepsis	Observed frequency	326	283	302	911
	Expected Frequency	290.9	297.4	322.8	911.0
Sexually transmitted infections	Observed frequency	520	417	304	1241
	Expected Frequency	396.2	405.1	439.7	1241.0
Uterine rupture	Observed frequency	102	97	118	317
	Expected Frequency	101.2	103.5	112.3	317.0
Total	Observed frequency	3846	3932	4268	12046
	Expected Frequency	3846.0	3932.0	4268.0	12046.0

Chi-Square Tests

	Value	df	P-value
Pearson Chi-Square	1631.317	26	.000

Appendix G

Hypothesis 3: There is no significant difference in the prevalence of common pregnancy complications among pregnant women of various parity status in Owerri Capital Territory of Imo State.

Complications	PARITY STATUS				χ^2 cal 480.58	df	α 0.05	χ^2 tab 15.4	Decision Ho Rejected
	P/ gravid	M/ gravida	G/ gravida	Total					
Anaemia in pregnancy	203	216	357	776					
Ectopic pregnancy	197	122	115	434					
Gestational pregnancy	110	138	150	398					
Haemorrhage	439	387	474	1300					
Hypertension	221	330	511	1062					
Malaria	689	567	505	1761					
Miscarriage	101	233	144	478					
Obstructed labour	189	171	217	577					
Placenta problems	297	306	312	915					
Eclampsia/pre- Eclampsia	200	309	531	1040					
Pre-mature rupture of membrane	307	331	198	836					
Sepsis	280	311	320	911					
Sexually transmitted diseases	443	415	383	1241					
Uterine rupture	101	89	127	317					
Total	3777	3925	4344	12046					

Complication		Observed frequency	Parity			Total
			0-1 child	2-4 children	5 children+	
Anaemia in pregnancy	Observed frequency	203	216	357	776	
	Expected frequency	243.3	252.8	279.8	776.0	
Ectopic pregnancy	Observed frequency	197	122	115	434	
	Expected frequency	136.1	141.4	156.5	434.0	
Gestational diabetes	Observed frequency	110	138	150	398	
	Expected frequency	124.8	129.7	143.5	398.0	
Haemorrhage	Observed frequency	439	387	474	1300	
	Expected frequency	407.6	423.6	468.8	1300.0	
Hypertension	Observed frequency	221	330	511	1062	
	Expected frequency	333.0	346.0	383.0	1062.0	
Malaria	Observed frequency	689	567	505	1761	
	Expected frequency	552.2	573.8	635.0	1761.0	
Miscarriage	Observed frequency	101	233	144	478	
	Expected frequency	149.9	155.7	172.4	478.0	
Obstructed labour	Observed frequency	189	171	217	577	
	Expected frequency	180.9	188.0	208.1	577.0	
Placenta problems	Observed frequency	297	306	312	915	
	Expected frequency	286.9	298.1	330.0	915.0	
Pre-eclampsia	Observed frequency	200	309	531	1040	
	Expected frequency	326.1	338.9	375.0	1040.0	
Pre-mature Rupture of Membrane	Observed frequency	307	331	198	836	
	Expected frequency	262.1	272.4	301.5	836.0	
Sepsis	Observed frequency	280	311	320	911	
	Expected frequency	285.6	296.8	328.5	911.0	
Sexually transmitted infections	Observed frequency	443	415	383	1241	
	Expected frequency	389.1	404.4	447.5	1241.0	
Uterine rupture	Observed frequency	101	89	127	317	
	Expected frequency	99.4	103.3	114.3	317.0	
Total	Observed frequency	3777	3925	4344	12046	
	Expected frequency	3777.0	3925.0	4344.0	12046.0	

Chi-Square Tests

	Value	df	P-value
Pearson Chi-Square	480.575	26	.000

Appendix H

Hypothesis 4: There is no significant difference in the prevalence of common pregnancy complications among the pregnant women in Owerri Capital Territory of Imo State based on parity status.

Complications	OCCUPATION				χ^2 cal 1729.421	df 26	α 0.05	χ^2 tab 15.4	Decision Ho Rejected
	Housewife	Civil servant	Artisan	TOTAL					
Anaemia in pregnancy	341	123	312	776					
Ectopic pregnancy	117	106	211	434					
Gestational pregnancy	96	104	198	398					
Haemorrhage	292	597	411	1300					
Hypertension	142	419	501	1062					
Malaria	431	543	787	1761					
Miscarriage	125	131	222	478					
Obstructed labour	327	111	139	577					
Placenta problems	341	243	331	915					
Eclampsia/pre- Eclampsia	398	401	241	1040					
Pre-mature rupture of membrane	333	76	427	836					
Sepsis	270	0	641	911					
Sexually transmitted diseases	113	415	731	1241					
Uterine rupture	117	87	113	317					
Total	3443	3356	5247	12046					

Complication		Occupation			Total
		Housewife	Civil servant	Artisan	
Anaemia in pregnancy	Observed frequency	341	123	312	776
	Expected frequency	221.8	216.2	338.0	776.0
Ectopic pregnancy	Observed frequency	117	106	211	434
	Expected frequency	124.0	120.9	189.0	434.0
Gestational diabetes	Observed frequency	96	104	198	398
	Expected frequency	113.8	110.9	173.4	398.0
Haemorrhage	Observed frequency	292	597	411	1300
	Expected frequency	371.6	362.2	566.3	1300.0
Hypertension	Observed frequency	142	419	501	1062
	Expected frequency	303.5	295.9	462.6	1062.0
Malaria	Observed frequency	431	543	787	1761
	Expected frequency	503.3	490.6	767.1	1761.0
Miscarriage	Observed frequency	125	131	222	478
	Expected frequency	136.6	133.2	208.2	478.0
Obstructed labour	Observed frequency	327	111	139	577
	Expected frequency	164.9	160.8	251.3	577.0
Placenta problems	Observed frequency	341	243	331	915
	Expected frequency	261.5	254.9	398.6	915.0
Pre-eclampsia	Observed frequency	398	401	241	1040
	Expected frequency	297.3	289.7	453.0	1040.0
Pre-mature Rupture of Membrane	Observed frequency	333	76	427	836
	Expected frequency	238.9	232.9	364.1	836.0
Sepsis	Observed frequency	270	0	641	911
	Expected frequency	260.4	253.8	396.8	911.0
Sexually transmitted infections	Observed frequency	113	415	713	1241
	Expected frequency	354.7	345.7	540.6	1241.0
Uterine rupture	Observed frequency	117	87	113	317
	Expected frequency	90.6	88.3	138.1	317.0
Total	Observed frequency	3443	3356	5247	12046
	Expected frequency	3443.0	3356.0	5247.0	12046.0

Chi-Square Tests

	Value	df	P-value
Pearson Chi-Square	1729.421	26	.000

Appendix I

Hypothesis 5: There is no significant difference in the prevalence of common pregnancy complications between the literate and non literate women of pregnant women in Owerri Capital Territory of Imo State.

LITERACY STATUS								
Complications	Literate	Non-literate	TOTAL	χ^2 cal	df	α	χ^2 tab	Decision
Anaemia in pregnancy	385	391	776	319.263	13	0.05	5.89	Ho Rejected
Ectopic pregnancy	195	239	434					
Gestational pregnancy	119	279	398					
Haemorrhage	589	711	1300					
Hypertension	623	439	1062					
Malaria	811	950	1761					
Miscarriage	231	247	478					
Obstructed labour	190	387	577					
Placenta problems	513	402	915					
Eclampsia/pre- Eclampsia	611	429	1040					
Pre-mature rupture of membrane	519	317	836					
Sepsis	401	510	911					
Sexually transmitted diseases	526	715	1241					
Uterine rupture	155	162	317					
Total	5868	6178	12046					

			Literacy status		Total
			Literate	Non-literate	
Complication	Anaemia in pregnancy	Observed frequency	385	391	776
		Expected frequency	378.0	398.0	776.0
	Ectopic pregnancy	Observed frequency	195	239	434
		Expected frequency	211.4	222.6	434.0
	Gestational diabetes	Observed frequency	119	279	398
		Expected frequency	193.9	204.1	398.0
	Haemorrhage	Observed frequency	589	711	1300
		Expected frequency	633.3	666.7	1300.0
	Hypertension	Observed frequency	623	439	1062
		Expected frequency	517.3	544.7	1062.0
	Malaria	Observed frequency	811	950	1761
		Expected frequency	857.8	903.2	1761.0
	Miscarriage	Observed frequency	231	247	478
		Expected frequency	232.8	245.2	478.0
	Obstructed labour	Observed frequency	190	387	577
		Expected frequency	281.1	295.9	577.0
	Placenta problems	Observed frequency	513	402	915
		Expected frequency	445.7	469.3	915.0
	Pre-eclampsia	Observed frequency	611	429	1040
		Expected frequency	506.6	533.4	1040.0
	Pre-mature Rupture of Membrane	Observed frequency	519	317	836
		Expected frequency	407.2	428.8	836.0
	Sepsis	Observed frequency	401	510	911
		Expected frequency	443.8	467.2	911.0
Sexually transmitted infections	Observed frequency	526	715	1241	
	Expected frequency	604.5	636.5	1241.0	
Uterine rupture	Observed frequency	155	162	317	
	Expected frequency	154.4	162.6	317.0	
Total	Observed frequency	5868	6178	12046	
	Expected frequency	5868.0	6178.0	12046.0	

Chi-Square Tests

	Value	df	P-value
Pearson Chi-Square	319.263	13	.000

Appendix J

Hypothesis 6: There is no significant difference in the prevalence of common pregnancy complications between the married and the unmarried women of pregnant women in Owerri Capital Territory of Imo State.

MARITAL STATUS								
Complications	Married	Unmarried	TOTAL	χ^2 cal	df	α	χ^2 tab	Decision
Anaemia in pregnancy	339	437	776	473.969	13	0.05	5.89	Ho Rejected
Ectopic pregnancy	213	221	434					
Gestational pregnancy	155	243	398					
Haemorrhage	717	583	1300					
Hypertension	313	749	1062					
Malaria	878	883	1761					
Miscarriage	165	313	478					
Obstructed labour	280	297	577					
Placenta problems	513	402	915					
Eclampsia/pre- Eclampsia	647	393	1040					
Pre-mature rupture of membrane	499	337	836					
Sepsis	304	607	911					
Sexually transmitted diseases	529	712	1241					
Uterine rupture	147	170	317					
Total	5699	6347	12046					

			Marital status		Total
			Married	Unmarried	
Complication	Anaemia in pregnancy	Observed frequency	339	437	776
		Expected frequency	367.1	408.9	776.0
	Ectopic pregnancy	Observed frequency	213	221	434
		Expected frequency	205.3	228.7	434.0
	Gestational diabetes	Observed frequency	155	243	398
		Expected frequency	188.3	209.7	398.0
	Haemorrhage	Observed frequency	717	583	1300
		Expected frequency	615.0	685.0	1300.0
	Hypertension	Observed frequency	313	749	1062
		Expected frequency	502.4	559.6	1062.0
	Malaria	Observed frequency	878	883	1761
		Expected frequency	833.1	927.9	1761.0
	Miscarriage	Observed frequency	165	313	478
		Expected frequency	226.1	251.9	478.0
	Obstructed labour	Observed frequency	280	297	577
		Expected frequency	273.0	304.0	577.0
	Placenta problems	Observed frequency	513	402	915
		Expected frequency	432.9	482.1	915.0
	Pre-eclampsia	Observed frequency	647	393	1040
		Expected frequency	492.0	548.0	1040.0
	Pre-mature Rupture of Membrane	Observed frequency	499	337	836
		Expected frequency	395.5	440.5	836.0
	Sepsis	Observed frequency	304	607	911
		Expected frequency	431.0	480.0	911.0
	Sexually transmitted infections	Observed frequency	529	712	1241
		Expected frequency	587.1	653.9	1241.0
Uterine rupture	Observed frequency	147	170	317	
	Expected frequency	150.0	167.0	317.0	
Total	Observed frequency	5699	6347	12046	
	Expected frequency	5699.0	6347.0	12046.0	

Chi-Square Tests

	Value	df	P-value
Pearson Chi-Square	473.969	13	.000

Appendix K

Hypothesis 7: There is no significant difference in the prevalence of common pregnancy complications between the booked and unbooked pregnant women in Owerri Capital Territory of Imo State.

ANTENATAL BOOKING STATUS								
Complications	Literate	Non-literate	TOTAL	χ^2 cal	df	α	χ^2 tab	Decision
Anaemia in pregnancy	279	479	776	222.545	13	0.05	5.89	Ho Rejected
Ectopic pregnancy	231	203	434					
Gestational pregnancy	183	215	398					
Haemorrhage	659	641	1300					
Hypertension	375	687	1062					
Malaria	799	962	1761					
Miscarriage	227	251	478					
Obstructed labour	213	364	577					
Placenta problems	484	431	915					
Eclampsia/pre- Eclampsia	383	657	1040					
Pre-mature rupture of membrane	302	534	836					
Sepsis	312	599	911					
Sexually transmitted diseases	456	785	1241					
Uterine rupture	143	174	317					
Total	5046	7000	12046					

		Antenatal Booking status		Total
		Booked	Unbooked	
Anaemia in pregnancy	Observed frequency	279	497	776
	Expected frequency	325.1	450.9	776.0
Ectopic pregnancy	Observed frequency	231	203	434
	Expected frequency	181.8	252.2	434.0
Gestational diabetes	Observed frequency	183	215	398
	Expected frequency	166.7	231.3	398.0
Haemorrhage	Observed frequency	659	641	1300
	Expected frequency	544.6	755.4	1300.0
Hypertension	Observed frequency	375	687	1062
	Expected frequency	444.9	617.1	1062.0
Malaria	Observed frequency	799	962	1761
	Expected frequency	737.7	1023.3	1761.0
Miscarriage	Observed frequency	227	251	478
	Expected frequency	200.2	277.8	478.0
Obstructed labour	Observed frequency	213	364	577
	Expected frequency	241.7	335.3	577.0
Placenta problems	Observed frequency	484	431	915
	Expected frequency	383.3	531.7	915.0
Pre-eclampsia	Observed frequency	383	657	1040
	Expected frequency	435.7	604.3	1040.0
Pre-mature Rupture of Membrane	Observed frequency	302	534	836
	Expected frequency	350.2	485.8	836.0
Sepsis	Observed frequency	312	599	911
	Expected frequency	381.6	529.4	911.0
Sexually transmitted infections	Observed frequency	456	785	1241
	Expected frequency	519.8	721.2	1241.0
Uterine rupture	Observed frequency	143	174	317
	Expected frequency	132.8	184.2	317.0
Total	Observed frequency	5046	7000	12046
	Expected frequency	5046.0	7000.0	12046.0

Chi-Square Tests

	Value	df	P-value
Pearson Chi-Square	222.545	13	.000

Appendix L

Hypothesis 8: There was no significant difference in the prevalence of common pregnancy complications that resulted to maternal death among pregnant women in Owerri Capital Territory of Imo State from 2010 - 2014.

Complications	Frequency	Prevalance rate	χ^2 cal	df	α	χ^2 tab	Decision
Anaemia in pregnancy	9	0.04	24.06	13	0.05	19.81	Ho Accepted
Ectopic pregnancy	13	0.06					
Gestational pregnancy	9	0.04					
Haemorrhage	16	0.07					
Hypertension	19	0.09					
Malaria	13	0.06					
Miscarriage	15	0.07					
Obstructed labour	11	0.05					
Placenta problems	6	0.03					
Eclampsia/pre- Eclampsia	21	0.09					
Pre-mature rupture of membrane	1	0.01					
Sepsis	31	0.14					
Sexually transmitted diseases	19	0.09					
Uterine rupture	12	0.05					
TOTAL	195	0.88					

			Year					Total
			2010	2011	2012	2013	2014	
Anaemia in pregnancy	Observed frequency		2	2	1	3	1	9
	Expected frequency		2.1	1.9	.7	2.0	2.4	9.0
Ectopic pregnancy	Observed frequency		3	3	2	2	3	13
	Expected frequency		3.0	2.7	1.0	2.9	3.4	13.0
Gestational diabetes	Observed frequency		2	2	0	2	3	9
	Expected frequency		2.1	1.9	.7	2.0	2.4	9.0
Haemorrhage	Observed frequency		4	1	1	5	5	16
	Expected frequency		3.7	3.4	1.2	3.5	4.2	16.0
Hypertension	Observed frequency		3	4	2	6	4	19
	Expected frequency		4.4	4.0	1.5	4.2	5.0	19.0
Malaria	Observed frequency		4	3	0	2	4	13
	Expected frequency		3.0	2.7	1.0	2.9	3.4	13.0
Miscarriage	Observed frequency		3	4	0	3	5	15
	Expected frequency		3.5	3.2	1.2	3.3	3.9	15.0
Obstructed labour	Observed frequency		3	4	0	2	2	11
	Expected frequency		2.5	2.3	.8	2.4	2.9	11.0
Placenta problems	Observed frequency		2	0	0	2	2	6
	Expected frequency		1.4	1.3	.5	1.3	1.6	6.0
Eclampsia/Pre-eclampsia	Observed frequency		4	5	2	4	6	21
	Expected frequency		4.8	4.4	1.6	4.6	5.5	21.0
Pre-mature Rupture of Membrane	Observed frequency		1	0	0	0	0	1
	Expected frequency		.2	.2	.1	.2	.3	1.0
Sepsis	Observed frequency		7	8	3	6	7	31
	Expected frequency		7.2	6.5	2.4	6.8	8.1	31.0
Sexually transmitted infections	Observed frequency		5	4	2	3	5	19
	Expected frequency		4.4	4.0	1.5	4.2	5.0	19.0
Uterine rupture	Observed frequency		2	1	2	3	4	12
	Expected frequency		2.8	2.5	.9	2.6	3.1	12.0
Total	Observed frequency		45	41	15	43	51	195
	Expected frequency		45.0	41.0	15.0	43.0	51.0	195.0

Chi-Square Tests

	Value	df	P-value
Pearson Chi-Square	24.057	13	1.000

