

**KNOWLEDGE AND PRACTICE OF BIRTH PREPAREDNESS AND COMPLICATION
READINESS AMONG PREGNANT WOMEN IN SELECTED HEALTH FACILITIES
IN ENUGU SOUTH LOCAL GOVERNMENT AREA, ENUGU STATE**

BY

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PG/M.SC/08/53350**

M.Sc DISSERTATION

**DEPARTMENT OF NURSING SCIENCE,
FACULTY OF HEALTH SCIENCES AND TECHNOLOGY,
UNIVERSITY OF NIGERIA, ENUGU CAMPUS**

APRIL, 2016

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**IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF
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HEALTH)**

SUPERVISOR: DR (MRS) I.L. OKORONKWO

APRIL, 2016

APPROVAL

This dissertation has been approved for the award of Master of Science degree in maternal and child health, in the Department of Nursing Science, Faculty of Health Sciences and Technology, College of Medicine, University of Nigeria, Enugu Campus.

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CERTIFICATION

This is to certify that this dissertation is an original work carried out by OBI HOPE NKIRU with registration number PG/08/53350 of the Department of Nursing Science, Faculty of Health Sciences and Technology, University of Nigeria, Enugu Campus.

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DEDICATION

To my lovely daughter Ifunanyachukwu Praise.

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Firstly, to God Almighty, who sustained me through this study. Special thanks to my supervisor Dr. (Mrs.) I.L. Okoronkwo who not only devoted her time and attention to this study, encouraged me to move on against all odds. My humbly prayers is that God Almighty will always shower his blessings upon you.

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ABSTRACT

Avoidable maternal mortality remains a huge burden more especially in sub-Saharan Africa. Expectant mothers are faced with life threatening complication which a birth preparedness and complication readiness plan helps to actively avoid. When a woman is adequately prepared for normal childbirth and possible complications, she is more likely to access the skilled and prompt care she needs to protect her overall health and possibly save her life and that of her baby. The study assessed the knowledge and practice of birth preparedness and complication readiness among women in selected health care facilities in Enugu south local government Area of Enugu State. Descriptive cross- selection survey research design was adopted with a sample size of 422 pregnant women at 8 selected health care facilities in the local government area. Data was collected with interviewer administered questionnaire and analyzed using SPSS version 17 for windows. The findings revealed that only 20.5% of the respondents had good knowledge of the components of BPCR. Most of the respondents 87.6% lacked good knowledge of key danger signs of pregnancy, labour and postpartum, while the majority 78.6%, 96.7% and 95.5% knew that vaginal bleeding is a key danger sign of pregnancy, labour and postpartum respectively. The majority 65.2% was poor in their practice birth preparedness and complication readiness and almost all 92.5% did not identify a compactable blood donor. All the respondents needed at least one form of social support while 95.7% needed psychological support which was the most needed support by the respondents. Age $P=0.000$, marital status $P=0.001$, level of education $P=0.000$ and occupation $P=0.000$ of the respondents had significant relationship with their knowledge of BPCR. Whereas age $P=0.000$, educational level $P=0.000$ and occupation $P=0.000$ of respondents had significant relationship with their practice of BPCR. In conclusion, there was poor knowledge and practice of BPCR in the study area. In recommendation, there is need for intensified health education on the components of BPCR, key danger signs of pregnancy, labour and post partum while the importance of practicing BPCR must always be emphasized during antenatal visit.

CHAPTER ONE

INTRODUCTION

Background to the study

Birth preparedness and complication readiness (BP/CR) is the process of planning for normal birth and anticipating actions needed in case of an emergency. It is a key strategy in safe motherhood programmes aimed at promoting the timely use of skilled maternal and neonatal care especially during childbirth based on the theory that preparation for childbirth and being ready for complication reduces delay in obtaining care (Nandan, Agarwal, Duby & Marathe 2009).

Childbirth is a normal physiological process for the majority of women and a process that is looked upon with a mixture of anticipation and happy expectation. Although a normal physiological process, childbirth still constitutes a very sad experience or sometimes death for some women because every minute a woman dies during labour or delivery (Santon, Blanc, Croft & Choi, 2007). The loss of a mother shatters a family and threatens the well being of surviving children. World Health Organization (2008) defines maternal death as the death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of the duration and site of the pregnancy from any cause related or aggravated by the pregnancy or its management but not from accidental or incidental causes. The U.S. Centre for Disease Control and Prevention (CDC, 2008) defines the term 'pregnancy related death' as 'one that occurs during pregnancy or within one year of its end and is as a result of complications of the pregnancy or a condition that was aggravated by the pregnancy.

Globally an estimated 289, 000 maternal deaths occurred in 2013. Developing countries account for 99% (286, 000) of the global maternal deaths with sub-Saharan region alone accounting for 62% (179, 000) followed by Southern Asia (69, 000) (WHO, UNFPA, UNICEF & World Bank 2014). Country level estimate shows that India and Nigeria accounted for one third of all global maternal death with India at 17% (50, 000) and Nigeria at 14% (40, 000) (WHO, UNFPA, UNICEF & World Bank 2014). Maternal mortality ratio (MMR), is the number of maternal death per 100, 000 live births. At global level MMR was estimated at 210/100, 000 in 2013, developing region 230/100, 000 live births developed region 16/100, 000 live births. Sub-Saharan Africa has MMR of 510/100, 000 live births and Nigeria 560/100,000 live births (WHO 2014). Nigeria is the leading contributor to the maternal death figure in sub-Saharan Africa not only because of the number of her population but also because of her high mortality ratio. FMOH

(2007) reports the causes of maternal death in percentage as post partum hemorrhage (23%), infections (13%), unsafe abortion (13%), eclampsia (12%), obstructed labour (8%), other direct causes (8%) and indirect causes (20%).

Improving maternal health is therefore one of the eight Millennium Development Goals (MDGs) adopted by the International Community in the year 2000. Under MDGs, countries are committed to reducing maternal mortality by three quarter between 1990 and 2015. A reduction in the maternal mortality ratio (MMR) by three quarter translates to 140 or less per 100, 000 live births. However, between 1990 and 2013, the global MMR declined by only 2.6% per year, this is far from the annual decline of 5.5% required to achieve MDGs (WHO 2014). Maternal mortality could result directly from complications of pregnancy, delivery or the management or indirectly in a pregnant woman with a pre-existing or newly developed health problem. However, there are other fatalities during but unrelated to a pregnancy and these are termed accidental, incidental or none obstetrical maternal conditions. The major complications that account for nearly 75% of all maternal deaths are severe bleeding, obstructed labour, sepsis, hypertensive disorders, complications of delivery and unsafe abortion. The remainder (25%) are caused by or associated with disease like malaria, HIV/AIDS and anemia (Say, Chou, Gemmil, Ozga, Moller, Daniel, et al 2014).

Most maternal deaths are preventable as the health care solution to prevent or manage complications are well known and could be achieved through the application of simple affordable approach, which promotes and protects maternal and child health. One of these approaches is birth preparedness and complication readiness, which is a very important component of safe motherhood initiative. Activities to promote birth preparedness and complication readiness at household and community levels have been a standard component of programme in some countries to improve maternal survival.

Birth preparedness and complication readiness is considered by WHO (2006) and other agencies to be a useful and practical intervention with several advantages. It is packaged to empower women, her family and the community to promote maternal and neonatal survival. More so, it has been recognized as a standard component of the programmes designed to make pregnancy safer. The elements of birth preparedness and complication readiness have an association with increased use of skilled provider at birth as well as limiting undue delay. In a skilled care approach, birth preparedness include selection of birth location, identifying a skilled

birth attendance, identifying a birth companion, planning for cost, planning for transportation and preparing for supplies for the care of the mother and the newborn (WHO 2006). On the other hand complication readiness includes knowledge of danger signs, planning for emergency transportation and funds, arranging for blood, designation of a person to make decision on the woman's behalf and a person to care for the family when she is away. Complication readiness calls on the pregnant woman to equip herself in case of any unforeseen circumstances (Kabakyenga, Ostergren, Turyakira & Petterson 2011).

In Nigeria birth preparedness was launched in 2005 by the Federal Ministry of Health (Shiffman & Okonofua, 2007). It is intended to be used as a tool for motivating women to plan to have a skilled provider at delivery, encouraging family members to identify their roles in ensuring successful deliveries and encouraging communities to participate in care of pregnant women. It also calls on the health providers and facilities to prepare and attend to deliveries and treat complication by way of improving on staffing, staff retention, providing enabling environment and policies (Onayade, Akanbi, Oyeniyi, Togun & Okunola, 2008). In Enugu State, the government launched the free maternal and child health services in 2007 which provides free medical, antenatal, delivery and post natal care for poor women and children in primary and secondary hospitals and those referred to tertiary hospitals in the state (Ezeugwu, Agu, Nwoke & Ezeugwu, 2014). Despite all these efforts, a commensurate reduction in maternal mortality and morbidity rate is yet to be achieved in Enugu State. Thus this study is aimed to determine the knowledge and practice of birth preparedness and complication readiness by mothers who are the principal beneficiaries of all the maternal health services provided by the government.

Statement of problem

Poor maternal health leading to maternal death and severe acute maternal morbidity remains a major problem especially in sub Sahara Africa. There has been a progressive decline in global maternal death to almost half from 523, 000 in 1990 to 289, 000 in 2013 (WHO, UNFPA, UNICE & World Bank, 2014). Also in sub ó Sahara Africa the MMR declined from 640/1000 live births in 2008 to 510/100,000 live births in 2013 (WHO, UNFPA, UNICE & World Bank, 2014). The maternal mortality ratio in Nigeria has declined over time from 1100/100,000 live births in 2005, 840/100, 000 live births in 2008 to 560/100, 000 in 2013 (WHO, UNFPA, UNICE & World Bank, 2014). However, the rate of decline is not good enough to achieve the Millennium Development Goal number five which focuses on reducing maternal mortality ratio to 140 or less per 100,000 live births. Furthermore, in line with National Demography Survey (2014) rating of

maternal mortality which is considered to be high if it is $\times 300-499/100,000$ live births and extremely high if it is $\times 1000/100,000$ live births. This shows that the maternal mortality ratio of 560/100,000 live births in Nigeria in 2013 were high.

Several donor agencies and the Federal Government of Nigeria have done a lot and adopted various policies to improve safe motherhood but all these efforts have not translated to any meaningful reduction in maternal mortality (Abella, 2009). More so focused antenatal care aimed at providing individual counseling on birth preparedness and complication readiness including danger signs of obstetric complications during antenatal visit has been adopted to improve the timely utilization of the services of skilled providers by mothers and subsequent reduction in maternal mortality (Lar, Banwat, Enuladu, Onuche, Adetula & Tanko, 2012). Despite all these efforts to reduce maternal mortality, it has continued to be high.

Enugu State is one of the six states in South East geopolitical zone of Nigeria. Available data indicates that maternal mortality ratio is high in Enugu State with figures ranging from 772-998/100, 000 live births (Okeibunor, Onyeneho & Okonofua 2010). This is almost thrice the figure (286/100, 000) reported for the entire of South East Zone and almost double the 545/100, 000 live births, which was the national average for the seven years period preceding the 2008 National Demographic and health survey (Okeibunor, Onyeneho & Okonofua 2010).

A study of Enugu State University teaching hospital by Ezeugwu, Agu, Nwoke & Ezeugwu (2014) reported unacceptably high MMR of 645/100,000 live births and identified eclampsia and haemorrhage as the two most common causes of maternal death. These are preventable deaths caused by complications of pregnancy and delivery, which could have been averted if the signs were recognized on time and prompt medical care given to the pregnant woman. The reasons for the persistent high maternal mortality in Enugu State is not quite clear and it has not been established if expectant mothers in urban and rural communities in Enugu State are well informed about birth preparedness and complication readiness. This study therefore aims to assess the knowledge and practice of birth preparedness and complication readiness among women in Enugu South L.G.A.

PURPOSE OF THE STUDY

The purpose of the study is to assess the knowledge and practice of Birth Preparedness and Complication readiness among pregnant women in Enugu South L.G.A. of Enugu State.

Specific Objectives are to:

1. Elicit pregnant women's knowledge about preparation for birth and its complications
2. Determine pregnant women's level of knowledge on danger signs during pregnancy, labour and post partum periods.
3. Ascertain the practice of birth preparedness and complication readiness by pregnant women.
4. Identify social supports needed by pregnant women to enable them prepare for birth and its complications.
5. Determine the relationship between socio-demographic characteristics of mothers and knowledge of birth preparedness and complication readiness.
6. Determine the relationship between socio-demographic characteristic of mothers and the practice of birth preparedness and complication readiness

Significance of study

Result from this study will be useful in understanding the status of birth preparedness and complication readiness of mothers in Enugu South Local Government Area. The result will unveil mothers' knowledge of danger signs of pregnancy as well as provide information on the determinants of mothers' preparation for birth and complication, which will serve as a framework for developing birth preparedness models by health workers and be used for antenatal counseling. Findings from this study can provide evidence needed to write a proposal for concrete action plan for health professionals in the field of reproductive health geared towards improving maternal health. When the findings are well communicated, it will inform the stake holders in safe motherhood initiative to be fully committed in contributing their quota towards reducing maternal mortality. Information gathered from this study will serve as a source of literature and guide for further research.

Scope of the study

This study is confined to pregnant women in Enugu South Local Government Area. The study is delimited to the knowledge and practice of birth preparedness and complication readiness of these women and factors associated with the practice.

Operational Definition of terms: -

Knowledge of Birth Preparedness: Refers to the respondent's understanding of the preparations she should make for normal birth. These include knowing her expected date of delivery, deciding on birth location, identifying a skilled birth attendant, identifying a birth companion, saving money, arranging for a means of transportation and buying delivery requirements. A respondent is considered to have poor knowledge if she can spontaneously elicit 1 - 2 components, fair knowledge if she can elicit 3 - 4 components and good knowledge if she elicit 5 - 7 components.

Practice of Birth Preparedness; Refers to whether the respondent has arranged or is arranging all she will require for a normal birth. A respondent who knows her Expected date of delivery, identified a birth location, identified a birth attendance, identified a birth companion, save some money, bought or is buying delivery requirements and arranged for transportation is viewed as practicing birth preparedness. A respondent who identified only 1 - 2 component of birth preparedness she has arranged or is arranging for normal birth is considered as being poor in her practice of birth preparedness, while a respondent who identified 3 - 4 or 5 - 7 components is considered to be fair or good respectively in her practice of birth preparedness. .

Knowledge of Complication Readiness; Refers to the respondents understanding of the danger signs of pregnancy, labour and delivery and what they should arrange for in case of any emergency that may arise. A respondent who knows about complications readiness should be able to enumerate the danger signs of pregnancy, labour and delivery which herald the onset of obstetric complication. A respondent is considered to have poor knowledge if she spontaneously mentions 1 key danger sign of pregnancy, labour and postpartum and 1 - 2 components of complication readiness, fair knowledge if she mentioned 2 key danger signs of pregnancy, labour and postpartum and 3 - 4 components of complication readiness. While a respondent is considered to have a good knowledge if she mentioned 3 key danger signs of pregnancy , labour and post partum as well as 5 - 6 components of complication readiness.

Practice of Complication Readiness; Refers to whether or not the respondent has arranged or is arranging for all that she will require if an obstetric emergency should arise. A respondent is considered to be poor in her practice of complication readiness if she stated or indicated only 1 - 2 component of complication readiness she already arranged or is arranging while a respondent who indicated 3 - 4 or 5 - 6 is considered as being fair or good in her practice.s

Women: - Refers to adult female both married and unmarried who are pregnant.

CHAPTER TWO

LITERATURE REVIEW

This chapter presents a review of related materials from books, abstracts from published and unpublished article from University Libraries, Journals and internet material under conceptual, theoretical and empirical reviews. It will also highlight the summary of literature review.

The Concept of Birth Preparedness and Complication Readiness

Birth Preparedness and Complication Readiness is an active, definite preparation and decision making process by pregnant women for birthing, including arrangement for emergency that may arise at any time in pregnancy, during labour and after delivery (Onayade, Akanbi, Oyeniya, Togun & Okunola, 2008). This planning has the potentials to reduce morbidity and mortality during pregnancy, delivery and post partum by ensuring faster access to care. Many packages that address birth preparedness promotes attending four antenatal care visits during pregnancy, preparation for normal birth by selecting a qualified birth attendance and a place of delivery and preparation of essential items for delivery. Other elements of birth preparedness include knowledge of expectant date of delivery, knowledge of signs of labour and HIV testing for all pregnant women; while the elements of complication readiness are knowledge of danger signs during pregnancy, labour and childbirth, establishing a money saving plan, designate a decision maker in case of emergency, arranging in advance for transportation and arrange for a suitable blood donor (WHO, UNICEF, 2009).

Complication readiness is a concept that addresses delay in recognizing complication of pregnancy through educating pregnant women and use of obstetric services in obstetric emergencies. To be complication ready, a pregnant woman is expected to have an adequate knowledge of signs which heralds the onset of complication or emergency. Complication readiness is very crucial as more maternal deaths are likely to follow obstetric emergency (Onayade, Akanbi, Oyeniya, Togun & Okunola, 2008). Complications and emergencies can arise at any time during pregnancy, childbirth and post partum period. These complications can be life-threatening requiring urgent interventions to mitigate their effects thereby reducing maternal morbidity and mortality, leading to achievement of Millennium Development Goal number five. A woman is said to be ready for complications if she identifies a blood donor, makes adequate arrangement for transport in case of emergency (Mustso, Qureshi & Kinuthia 2008). Basic emergency obstetric services include: provision of parenteral antibiotics, parenteral oxytocic drugs and parenteral sedation for eclampsia, manual removal of placenta, removal of retained product of conception and

assisted delivery. While comprehensive emergency obstetric services include provision of caesarean section (surgery and anesthesia) and safe blood transfusion services (UNFPA, 2009)

Birth preparedness and complication readiness programmes generally include counseling for women and their families; encouraging them take decisions before the onset of labour and potential occurrence of obstetric complication; inform them about the signs of complication so that they will know and be able to react promptly if needed; informing them about location of emergency services, and encouraging them to save money needed to pay for services and plan their transportation to health facility during labour or emergency (Dieudonne, Lise, Marie & Mira 2014). Birth preparedness and complication readiness as a key component of globally accepted safe motherhood programmes ensures that women obtain professionally delivered care when labour begins and to reduce delay that occurs when pregnant women experience obstetric complication.

Many women die because they suffer from serious complications during pregnancy and birth, but cannot get to the level of healthcare that can provide competent care for their problems due to various reasons such as absence of primary decision maker, unavailability of necessary finances, no access to a means of transportation etc (Nandan et al 2009). Historical evidence shows that no country has managed to bring its maternal mortality ratio below 100/100,000 live birth without ensuring that all women are attended to by an appropriate skilled health professional during labour, birth and period immediately afterwards (WHO, 2014).

Birth preparedness and complication readiness is a multi level strategy. It can be described at six levels, which are the individual pregnant woman, her family, her community, health facility, health service provider and policy maker. At the individual level, pregnant women and their partners can prepare by learning to recognize the danger signs that indicate life threatening complications for the mother and baby, identify a skill provider and birth location, save money and preparing for transportation, communities and families can prepare by making arrangement for money, transport and blood donor to assist a woman in reaching and receiving care in case of obstetric emergency. Facilities can prepare by having required equipments, supplies and support system available. Policy makers can prepare by instituting evidence based health care policies and ensuring adequate funding for maternal and new born services (JHPIEGO, 2004). The lack of evidence demonstrating a negative impact of Birth preparedness and complication readiness plans, the right of women and family to self determination and recognition of the capacities of women

and family to contribute significantly to maternal health has led WHO to recommend this intervention as a fundamental component of all antenatal care programmes.

The practice of BP/CR in a third world setting where there is prevailing illiteracy, inefficient infrastructure, poor transport system and unpredictable access to skill care provider have the potential of reducing the existing high maternal and neonatal mortality. This could be achieved because BP/CR promotes skilled care for all birth and encourages decision making before the onset of labour (Ekabua, Ekabua, Odusolu, Agan, Iklaki, Etokidem, 2011). Birth preparedness programmes generally address four delays to care-seeking for obstetric emergency. They are delay in recognition of problem, delay in seeking care, delay in arriving at the appropriate facility and delay in receiving quality care. These delays represent barrier that often result in preventable maternal deaths. The role of BP/CR in improving the use and effectiveness of key maternal services is through reducing delay in deciding to seek care in two ways. First it motivates women to plan to have a skilled provider at every birth. If the pregnant women and families make the decision to seek care before the onset of labour and they successfully follow through with this plan, the woman will reach care before developing any potential complication during child birth, thus avoiding the first two delays completely. Secondly, complication readiness raises awareness of danger signs thereby improving problem recognition and reducing the delay in deciding to seek care.

Thus Birth preparedness and complication readiness is a concept that will significantly contribute to deduction of maternal mortality and morbidity (Burgard, 2004).

Overview of maternal mortality and causes of maternal mortality

Maternal mortality also known as maternal death continues to be the major cause of death among women of reproductive age in many countries and remains a serious public health issue especially in developing countries (WHO, 2007). The majority of maternal death occurs during labour, delivery and within 24 hours post partum period (Mojekwu and Ibekwe 2012).

Globally, the estimated number of maternal deaths in 2013 was 289, 000 yielding a maternal mortality rate of 210/100,000 live births (WHO, UNFPA, UNICEF & World Bank 2014). According to the WHO fact sheet (2008) 1500 women die from pregnancy or pregnancy related complications every day. Most of these deaths occur in developing countries and most are avoidable. About 25% of female of reproductive age live in developed countries and contributed only 1% to maternal death worldwide. A total of 99% of all maternal deaths occur in developing countries (WHO Factsheet 2008). The number of maternal death in the developing countries in 286, 000 with a MMR of 230/100, 000 live

births while that of developed countries is 2300 with MMR of 16/1000, 000 live births in 2013(WHO, UNFPA, UNICEF & World Bank 2014). . This signifies immense variation in death rates in different parts of the world and indicates that MMR in developing region is 14 times higher than in developed region. While none of the MDG regions had extremely high MMR sub Saharan Africa is the only MDG developing region with very high MMR of 510/100,000 live births(WHO, UNFPA, UNICEF & World Bank 2014).

Nigeria has an estimated maternal death of 40, 000 in 2013 and is rated among the MDG countries that are making progress towards reducing maternal mortality (WHO, UNFPA, UNICEF & World Bank 2014). This implies that more maternal death occur in countries in sub-Saharan African. This is because women in developing countries have many pregnancies on the average. Their lifetime risk reflects more accurately the overall burden of these women. Lifetime risk is the probability that a woman will die from complications of pregnancy and childbirth over her life time, which takes into account both the maternal mortality ratio and the total fertility rate. The adult life time risk of maternal mortality in women from sub-Saharan Africa in 2013 was the highest at 1 in 38, in sharp contrast to 1 in 3400 among women in developed countries. The life time risk of maternal death in Nigeria in 2013 is 1 in 31 (WHO, UNICEF & World Bank, 2014).

Mihret and Mesganaw (2008) expressed the view that the World maternal mortality ratio is declining too slowly to meet MDG 5 target, which is aimed at reducing the number of women who die in pregnancy and childbirth by three quarters by the year 2015. While an annual decline of 5.5 percent in maternal mortality ratio between 1990 and 2015 is required to achieve MDG, figures released by WHO, UNICEF, UNFPA & World Bank (2014) show an annual decline of less than 1 percent Maternal death often occur suddenly and unpredictably. The fact that a high level of risk is concentrated during childbirth focuses attention on the hours or sometimes days that are spent in labour and giving birth, the critical hours when a joyful event can suddenly turn into an unforeseen crises (WHO, 2008).

Maternal deaths results from a wide range of direct and indirect causes. Eighty two (82%) percent of maternal death is attributed to direct causes. Direct causes of maternal death follows complications of pregnancy and childbirth or are caused by any intervention, omission, incorrect treatment or events that result from these complications including unsafe abortion, while maternal death due to indirect causes represent 18% of global total. They are caused by diseases (pre-existing or concurrent) that are not complications of pregnancy but complicate pregnancy or are aggravated by it. These include malaria, anemia, HIV/AIDS etc. The percentage contributions by direct causes of maternal death are hemorrhage (34%), hypertension/eclampsia (18%), Sepsis (8%), abortion (10%), embolism (1%) other

direct causes (11%) and indirect causes accounts for about (18%). Women also die because of poor health at conception and lack of adequate care needed for a healthy outcome of the pregnancy for themselves and their babies.

Society for Obstetrics Gynecology in Nigeria (2010) estimated that in Nigeria, more than 70 percent of maternal deaths could be attributed to major complications such as haemorrhage, infection, unsafe abortion, hypertensive disease of pregnancy and obstructed labour. Also, poor access to and utilization of quality reproductive health services contribute significantly to the high maternal mortality level in the country.

Birth Preparedness and Complication Readiness Matrix.

In 2001, the John Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) developed the birth preparedness and complication readiness matrix which delineates the roles of policy makers, facility managers, providers, communities, families and women in ensuring that women and new born receive appropriate effective and timely care. It is hypothesized that implementation of birth preparedness and complication readiness concepts that focus on individuals, families and communities could reduce at least the first two phases of delay to care seeking in obstetric emergency. An operational BP/CR Matrix means prepared health facilities that are able to handle child birth and complication, thus contributing to a reduction of the third and fourth phases of delay to care seeking in obstetric emergency.

Responsibilities of different stakeholders in safe motherhood initiative as enumerated in the birth preparedness and complication readiness matrix are: -

Policy maker: - should create an environment that supports the survival of pregnant women by ensuring that skilled antenatal care policies are evidence based, in place and politically endorsed, by doing so they promote and facilitates the adoption of evidence based antenatal care. Ensures that adequate levels of resources (financial, material, and human) are dedicated to supporting antenatal care and an emergency referral system. Encourages and facilitates participation in policy making and resources allocation for safe childbirth including emergency referral services by communities, families, individuals and advocacy groups. Ensures that protocols are in place for clinical management, blood donation, anesthesia, surgical intervention, infection prevention and physical infrastructure.

Facility: Should be equipped, staffed and managed to provide skilled care for the pregnant women.

Provider: Provides skilled care for normal and complicated pregnancies by providing skilled antenatal care including detection and management of complication. Health promotion and disease prevention through provision of iron/folates, tetanus toxoid, vitamin A and presumptive treatment of malaria and worms in area of prevalence. The providers also assist the women to prepare for birth and educate them on normal signs of pregnancy as well as the abnormal signs, which indicate complication. Educates the community about birth preparedness and complication readiness thereby promoting the concept and dispelling misconceptions and harmful practices that could prevent birth preparedness and complication readiness .

Community: - Advocates and facilitates birth preparedness and complication readiness actions through their supports of the use of antenatal care and treatment for woman during pregnancy. It is also the responsibility of the community to provide a functional blood donor system, provide fund for obstetric emergency and functional transportation infrastructure for women to reach care when needed. The community renders the necessary support to facility that serves its members and advocates for policies that supports skilled health care.

Family: - Supports pregnant women's plan during pregnancy labour and postpartum period including making a plan for normal birth and complication as the need arises. The duty lies on the family to provide the necessary fund compactable blood donor, transportation and make decisions in case of obstetric emergency. However, the family being a part of the community can seek assistance from the community for the woman's safe delivery.

Woman: -Prepares for birth, values and seek skilled care during pregnancy, childbirth and postpartum period. The woman attends at least four antenatal visits before delivery, makes a birth plan with skilled provider of her choice, husband and family. She should be able to recognize danger signs and implement the complication readiness plans. She speaks out and acts on behalf of her and her child's health, safety and survival, also has personal savings which she can access in case of need. She should be familiar with the blood donor as well as the transportation system and support persons to accompany her to the hospital.

Obstetric Danger Signs

Most women will have normal pregnancy with no complication whatsoever, although some women go through pregnancy with uncomfortable but no serious problems. Normal discomfort of pregnancy can include nausea (especially in the first three months) heart burn, frequent micturition,

backache, breast tenderness/swelling and tiredness. The danger signs of pregnancy are not the actual obstetric complications, but symptoms that are easily identified by the pregnant woman or non-clinical personnel.

The commonest/key danger signs during pregnancy include pelvic or abdominal pains, gush of blood/fluid from the vagina, persistent back pain and swelling of the hand/face. Others include severe headache, blurry vision, irregular uterine contraction prior to 37 weeks and no fetal movement.

The major danger signs during labour and delivery are severe vaginal bleeding, prolonged labour over 12 hours, convulsion and retained placenta. While the major danger signs during the post partum period are severe vaginal bleeding, foul smelling vaginal discharge and fever.

Maternal mobility and mortality could be prevented significantly if women and their families recognize obstetric danger signs and promptly seek health care services during pregnancy, labour, delivery and early post partum period under the supervision of a skilled birth attendant. Evidence suggest that raising awareness of women about obstetric danger signs would improve early dictation of problems and reduce the delay in deciding to seek obstetric care (Nandan et al 2009). It is the essential first step in the appropriate and timely referral to essential obstetric care.

According to (WHO, 2008), in the developing world over 30 million women suffer each year from serious obstetric complication resulting from delay in recognizing the danger signs, inadequate and inappropriate care during pregnancy, delivery and the first few critical hours after birth. Having brought to bear that maternal morbidity and mortality still pose a substantial burden and this progress towards the fifth Millennium Development Goal (MDG) remains slow, it is very necessary that pregnant women should have a good knowledge of the danger signs of pregnancy and childbirth, which is the first essential step in accepting appropriate and timely referral to obstetric care (UNICEF, 2009).

Knowledge of Birth Preparedness and Complication Readiness

Knowledge is an awareness or understanding of something such as, facts, information, descriptions or skills, which is acquired through experience or education by perceiving, discovering or learning (The Great Soviet Encyclopedia, 2010). The concept of Birth Preparedness and Complication Readiness is based on the assumption that knowledge of danger signs of pregnancy leads to a greater anticipation and preparedness to mitigate effect of pregnancy and childbirth complications by reducing the first two delays if health care facilities are prepared to address obstetric complications (JHIPEGO 2009)

The main source of knowledge about Birth Preparedness and Complication Readiness is from health facilities where women visit for their antenatal care. Such knowledge could be acquired from

other experienced women like elderly women, the mass media and friends. Studies conducted in different countries have shown that health education during antenatal care enhances the utilization of skilled health care and improves mothers' knowledge about birth preparedness and complication readiness (WHO 2006). During antenatal care and any other contact with the pregnant women, the health education provided is supposed to raise awareness about obstetric danger signs and ensure mothers make adequate preparation for childbirth complications.

An important aspect of assessing birth preparedness and complication readiness is measuring spontaneous knowledge of essential danger signs of obstetric complication which is essentially the first step in the appropriate and timely referral to essential obstetric care (JHPIEGO 2009). Knowledge of danger signs during each stage of childbearing may help women recognize and get care for a life threatening problem quickly. As the occurrence of complications during the process of childbirth is unpredictable, a woman who is aware of the key danger signs of obstetric complication during pregnancy, delivery and postpartum period is more likely to seek the services of a skilled birth attendant than one who is not (Gurmesa, Mesganaw & Alemayehu, 2014)..

Knowledge about Birth Preparedness and Complication readiness is measured in studies using a series of questions about knowledge on danger signs of pregnancy. This includes knowledge about expected date of delivery, planning for transportation, place of delivery plan, delivery by skilled birth attendance, financial arrangement, decision making arrangement and care giver during labour. A woman who is knowledgeable about obstetric complications should be able to spontaneously mention the three key danger signs during pregnancy, four key danger signs during labour and three key danger signs during postpartum period (Achanya, Kaur, Prasuna & Rasheed, 2015). Women who are knowledgeable on danger signs of pregnancy complication are more likely to be knowledgeable on birth preparedness and complication readiness (Mutiso, Quresh & Kinnutha 2008).

Poor knowledge of danger signs of pregnancy complication have been documented by various researcher throughout the world (WHO 2006). Ibrahim, Owoeye and Wagbatasoma (2012) stated that there is enough evidence to suggest that the knowledge of Birth Preparedness and complication readiness is low in many societies. More so, a study conducted by same researchers in Niger Delta of Nigeria revealed poor knowledge of Birth preparedness and complication readiness. Urassa, Bembe and Mganga (2012) believe that women in Africa are poorly informed about risk of pregnancy and the importance of birth preparedness and complication readiness. Rather they are being coaxed by the structure of health care system into using facility based services for labour and delivery. This

scenario highlights by poor communication between lay women and providers, which sharply influences pregnant women's perception and knowledge of birth preparedness and complication readiness and such shapes their utilization of services. The low level of knowledge of key obstetric danger signs in developing countries may also be explained by the low coverage of antenatal care visits and inadequate number of visits. This may also indicate that less attention might have been given to key danger signs while giving health education and advice during antenatal care (Gurmesa, Mesganaw & Alemayehu, 2014).

Practice of Birth Preparedness and Complication Readiness

The term "Practice" refers to the activity and total experience of mankind in the course of historical development (The Great Soviet Encyclopedia, 2010). Practice provides the foundation for objectivity in content of knowledge and serves as a contention or measure in verifying the truth of the result of cognition. The practice of Birth Preparedness and Complication readiness entails saving money to offset all the expenses of childbirth, identifying the place to give birth, identifying means of transportation and planning for it, having a birth partner, having a blood donor and having a designated decision maker (WHO 2006).

In many societies in the world, cultural beliefs and lack of awareness inhibits preparation in advance for delivery of the expected baby and since no action is taken prior to the delivery, the family tries to act only when labour begins. However, the majority of pregnant women and their families do not know how to recognize the danger signs of complication. When complications occur, the unprepared family will waste a great deal of time in recognizing the problem, getting organized, getting money, finding means of transportation and reaching the appropriate referral facility (JHPIEGO 2006). These delays may be reduced if pregnant women and families are prepared for birth and complication.

Though the concept of birth preparedness and complication readiness is one of the simple, cost effective and most practicable means of reducing maternal mortality, it is not widely used by women and their significant others as evidenced by maternal deaths still occurring due to delays (WHO, 2006).

The practice of birth preparedness and complication readiness is not easy especially in developing countries where the majority is relatively poor (Botha, Maluna, Pindam & Bultemeier, 2013). It is recorded that few women are able to identify transportation ahead of childbirth, few women put aside fund in case of emergency and few women are knowledgeable on danger signs or implement birth preparedness and complication readiness. This could be due to poor antenatal attendance, poor quality of health education during antenatal care, absence of referral system and failure of the health system to

implement the policy on birth preparedness and complication readiness (. Urassa, Rembe and Mganga, 2012)

Inability to practice birth preparedness has been associated with three main factors, which are in line with the three main delays associated with maternal death. These delays have main causes, including logistic and financial concerns, unsupportive policies and gap in services as well as inadequate community and family awareness and knowledge about maternal and newborn health services (WHO 2006). Delay in deciding to seek care may be caused by failure to recognize signs of complication, failure to perceive the severity of complication, cost consideration, previous negative experience with the health care system and transportation difficulties. Delay in reaching care may be created by distance from woman's home to the facility or care provider, the condition of roads and lack of emergency transportation. Delay in receiving care may result from unprofessional attitude of providers, shortage of supplies and basic equipments, lack of health care personnel and poor skills of the health care providers (Botha, Maluwa, Pindani & Bultemei, 2013).

It is thought that in order to enhance the behavioural changes necessary for practice of Birth Preparedness and Complication Readiness, the implementation of a birth preparedness projects needs the continued, involvement and participation of community and health system stake holders, so that other contributing and inhibiting factors can be recognized, accounted for and managed accordingly (JHIPEGO, 2009)

Factors that Determine Birth Preparedness and Complication Readiness

Current discussion on health recognize that the health status of individuals in a society is more a function of a combination of factors than the action taken by the individual to access health facilities to protect or improve their health. These discussions also indicate that personal health is not simply a matter of individual decision and action but it is dependent on several factors many of which may be beyond the control of the individual (HERFON, 2006). This emphasis has led to discussions about the determinants of health and the analysis of the conditions that determine the health of the individuals as a member of the family, the community, and the larger society.

Birth Preparedness and complication readiness is determined by socio-demographic and socio economic, maternal, community and institutional factors.

Socio-demographic and Socio-economic factors.

A large body of emerging evidence shows that socio-demographic factors like age, race, ethnicity, primary language and socio-economic status like income, education, occupation can influence health outcome. Social determinant of health refers to the condition in which people are born, grow, live, work and age (WHO 2009). These are circumstances shaped by distribution of money, power and other resources at the national and local levels. They are mostly responsible for health inequities ó the unfair and avoidable differences in health status seen within and between countries (WHO 2009). Several factors such as education, unemployment, gender inequality, poverty, distance to health facility, cultural inhibitions and belief are some social determinant of health in Nigeria. Others include fear of going alone to health facilities, inability to make informed choice and the need to obtain permission from some authority figure such as husband in case of some married women among others (Nigeria Demography and Health Survey 2013).

Education: - Education is any act or experience that has a formative effect on the mind, character or physical ability of an individual. It is a means of overcoming handicaps, achieving greater equality and acquiring wealth and status for all (WHO 2009). Education serves as a proxy to information, cognitive skills and values as it exerts effect on health seeking behaviour through a number of pathways. These pathways includes higher level of awareness and greater knowledge of available health services among educated women, improved ability of educated women to afford the cost of medical health care and their enhanced level of autonomy that results in improved ability and freedom to make health related decisions including choice of maternal services to use (Lambo 2006). Mothers' education is of importance in explaining the utilization of health services in Nigeria, the education level of a mother is shown to strongly affect the type of antenatal care, type of person providing assistance during delivery, access to health care among other health indicators (Health Reform Foundation of Nigeria, 2006). Education has clear implication for birth preparedness and complication readiness as shown in a study by Mihret and Mesgnanaw 2008, which reveals that educated women are better prepared for birth and complication than their uneducated counterparts.

Age: It is well recognized that women's current age plays an important role in the utilization of maternal and child health services (WHO, 2009). Mother's age may sometimes serve as a proxy for the women's accumulated knowledge of health status that may have positive influence on the use of health services. On the other hand, because of development of modern medicine and improvement in educational opportunities for women in recent years, younger women might have an enhanced knowledge of modern health care services and place more values upon modern medicine. Being of older age at marriage is positively associated with the use of health care services.

Poverty: - poverty is a state of nominalization and deprivation in the conditions needed to make life meaningful for individuals as members of distinct social group (WHO 2011). Poverty has implications for access to health facilities and cost of treatment. Poor mothers are less likely to afford the cost of treatment in a health facility. They are also less likely to access health facilities which are located far away from them as the cost of transportation may be above the means available to them.

Income: - Income is the sum of all wages salaries, profits, interest, payments and other forms of earning received in a given period (WHO 2009). Income inequality refers to the extent to which income is distributed in an uneven manner, which reflects differentials in the earning of different groups in the economy. Income inequality has a major effect upon health of individuals as members of social groups. The Nigeria Demographic Survey (2013) revealed that whereas 83.3% of women in the highest wealth bracket were attended to by either doctors or nurses during delivery, only 10.6% of women in the lowest wealth bracket were attended by the same category of health personnel. In fact 20.3% was not attended by anyone during delivery while another 34.3% of the women were attended by relatives. As many as 31.6% of the women were attended by traditional birth attendants.

Gender inequality: - Gender inequality is a key aspect of social gradient. Within the group of the poor, women occupy an even lower position than men. Gender inequality translates to lower economic power, lack of empowerment, higher rate of illiteracy and higher level of poverty for women which negatively affect their health seeking behaviour (WHO, 2009).

Traditional and cultural belief: - The role of traditional and cultural beliefs as well as the perception of women with regards to comparative efficacy of the medical versus traditional birth attendance may also be contributing to failure to prepare for birth and complication by women (WHO, 2009). Modern (medical) and indigenous maternal health services co-exist in African communities, particularly in rural areas, and women may have to choose between the two options (Babalola & Fatusi 2009). Previous studies have reported that many Nigerian women, particularly those in rural areas, rates the services of traditional birth attendants as being of higher quality than that of medical health practitioners, particularly with regards to interpersonal communication and relations (Onah, Ikeako Iloabache 2006, Babalola & Fatusi 2009). Several studies conducted in rural third world communities shows that women prefer to deliver at home with the assistance of a traditional birth attendants because of the belief that they are endowed with the special skill to conduct deliveries by the gods (Muhammedawal & Mesfin, 2013).

Maternal factors: -

Maternal factors associated with birth preparedness and complication readiness include parity, outcome of previous pregnancy, attendance to antenatal care and awareness of birth preparedness and complication readiness.

Parity: - Is a term used to indicate the number of pregnancies a woman had that have each resulted in the birth of an infant capable of survival (WHO, 2009). The number of pregnancies carried by a woman plays an important role in the utilization of maternal health care services (Essendi, Mills & Fotso 2010). Women carrying their first child are probably more susceptible to difficulties during labour and are more cautious than women who have had several births (Mihret & Mesganaw 2008). Therefore, women who are pregnant for the first time are more motivated to utilize maternity care because of perceived risk associated with first pregnancy. Multiparous women (more than 4 delivers) most often do not practice birth preparedness and complication readiness because they have endured many pregnancies and would rely on previous experience and draw from that knowledge. (Essendi, Mills & Fotso 2010). Having more children may also lead to resource constraints, which have a negative effect on health care utilization.

Women who had history of still birth are also more likely to prepare for birth and its complication than those who have not had a still birth (Babalola & Fatusi 2009). This could be as a result of emotional trauma and guilt feeling associated with the loss of a baby, which will serve as a motivating factor to prepare for subsequent pregnancy and delivery.

Advice given on Birth Preparedness and Complication readiness during antenatal care follow up is significantly associated with preparation for birth and complication. Women who were advised about where to give birth, arrangement for money, transportation, compatible blood donor and danger signs of obstetric complication during antenatal care follow up are more likely to be prepared for birth and complication than those that were not given such advice (Mihret et al 2006, Kabakyenga, Ostergren, Turyakira & Petterson 2011). Married women who are living in urban area are found to be better prepared for birth and complication compared to their unmarried counterpart living in rural area (Wuhib, Worku & Muluken 2014).

Community Factor: -

In addition to health factors, non health factors have been associated with poor maternal outcome. Road network, distance to the health facility and availability of community support system are among the non-health factor associated with maternal outcome. The use of community health

worker has been identified as one of the strategies for addressing shortage of health workers particularly in low-income countries. The community could participate in improving birth preparedness and complication readiness through recognition of danger signs, setting up of mutual fund, identification of a means of transportation and community surveillance system (Muhammedawal, Mesfin, 2013). Lack of community awareness about birth preparedness and complication readiness was identified as a hindrance to maternal outcome (Mbadinda, Nakimuli, Kakaire, Osinde, Kakande & Kaye 2014).

Long distance and high transportation cost are hindrance to seeking care. In rural areas, the situation is even more complex, even if transportation and the money to pay for it is available, in case of obstetric emergency, distance and poor road network may still cause delay sufficient to put the life of the woman in danger (WHO 2006). Transport infrastructure is also essential in delivering commodities needed for the care of pregnant women to the health care facilities. Distance may also jeopardize women's intention to attend antenatal care. Convenience and ease of accessibility to services play a very important role in determining a woman's choice of place of delivery (Essendi, Mills & Fotso, 2010).

Institutional factor

Evidence indicates that implementation of birth preparedness and complication readiness interventions lead to improved maternal and neonatal health in developing countries (Essendi, Mills & Fotso, 2010). Access to appropriate health care and timely referrals to emergency obstetric care services can greatly reduce maternal deaths and disabilities associated with limited poor availability of skilled delivery services in sub-Saharan Africa (Muhammedawal , Mesfin , 2013)

The facility should be adequately staffed and managed to provide skilled care to the pregnant women and newborn. More so, the health care provider should be well skilled to manage normal and complicated pregnancy. Mbadinda, Nakimuli, Kakarie, Osinde, Kakande and Kaye (2014) observed that several problems such as understaffing, poor counseling that would enable risk factor recognition and missed opportunity for education during antenatal care have been proven to hinder birth preparedness and complication readiness. The study also revealed that birth preparedness and complication readiness was not made the integral part of maternal and child health services.

Attitude of health care providers sometimes constitute a hindrance to utilization of their services. Essendi, Mills and Fotso (2010), found that fear of mistreatment by midwives is a leading contributing factor to high percentage of home birth and utilization of the services of traditional birth attendant among women. Poor quality of care continues to be a major concern in most health system, as high patient volume and limited resources combine to constrain service provision. (Agarwal, Seth, Sirvastava, Jha & Baqui 2010). Women in rural India have similarly reported as being less likely to

deliver in medical setting because of lack of social support provided by health care professionals compared with traditional midwives (Rajid, Aditya, Indramil, Raghunath, Samir & Supantha 2014)

Fully equipped health facilities with skilled attendance are not the only means to reducing maternal mortality. It is only when the services provided are effectively utilized by pregnant women that positive result can be achieved.

Social supports during pregnancy

Support is defined as both verbal and non verbal behaviour that conveys caring and understanding to enhance an individual's ability to cope (Taylor, 2011). Social support is broadly defined as a voluntary act from one individual (the donor) that is given to another individual (the recipient), which elicits an immediate or delayed positive response on the recipient. The voluntary act can be given by family members, friends, husband/partner and or others (Taylor, 2011).

Social network is considered as one of the mechanisms through which social support are thought to affect health yet social support is not a uni-dimensional, fixed set of resources, rather it is situation, issue and content specific (Finfgeld-Connect, 2006). Social support is an integral aspect of the environment, a well-known and widely recognized concept associated with positive health practice that influences one's physical and psychological well being. It preserves health by protecting or buffering a person from ill effect of stress. Pregnancy is a major life stressor and pregnant women can benefit from the potential buffering effect of social support (Edmonds, Paul & Sibley, 2011). This is substantiated by nursing research findings that show that health practice, psychological well being and maternal and fetal outcome are influenced by perceived social support. Supportive relationship may enhance feeling of well-being, personal control and positive effect, thereby helping pregnant women to perceive pregnancy related changes and demands as less stressful (Edmonds, Paul & Sibley, 2011).

Women perceive eight types of support during their pregnancy period. This include practical help with routine activities, information and advice, emotional support and assurance (caring, love, empathy), resources and material goods, logistic communication, prayers and spiritual rituals, nutritional support and accompaniment outside the homestead. Information support may provide guidance with respect to adequate prenatal care, proper nutrition, health care practices and preparation for labour and delivery. In addition, help with routine activities such as household chore and children care can provide needed assistance with physically tasking demands that may be harmful to expectant mothers especially late in pregnancy and after delivery.

One factor that may influence the extent to which social support benefit a pregnant woman is her cultural background. Researchers have suggested that cultural influences on relationship process may play a role in promoting health pregnancy (Taylor, 2011). Cultural values in particular can offer insight into the expectations and behaviours of pregnant women and their social network. Low or lack of social support during pregnancy is associated with low birth weight, poor labour progress, anxiety and depression (Elsenbruch, Bension, Rucke, Rose, Duden hausen & Pincus-Knakstedt, 2006).

THEORETICAL REVIEW IN BIRTH PREPAREDNESS AND COMPLICATION READINESS

The theories considered in this study are:-

- (1) Health belief model.
- (2) Three delay model.

Health Belief Model ó (HBM)

The health belief model is a psychological model developed in the 1950s by social psychologist Hochbaum, Rosenstock and Kegel. The model attempts to explain and predict health behavior of individuals. It stipulates that a person's perception of a threat posed by a health problem and the value associated with actions aimed at reducing the threat influences the health seeking behavior of the individual.

The HBM is based on the understanding that a person will take a health related action if that person: -

- o Feels that a negative health condition can be avoided.
- o Has a positive expectation that by taking a commended action, he/she will avoid a negative health condition.
- o Believes that he/she can successfully take a recommended health action.

The HBM was described base on four constructs representing the perceived threat and net benefits, perceived susceptibility, perceived severity, perceived benefits/cost and perceived barriers/motivation. These concepts were proposed as accounting for people's òreadiness to actö. An added concept, Cues to action would activate that readiness and stimulate overt behavior. A recent addition to the HBM is the concept of self efficacy or one's confidence in the ability to successfully perform an action. This concept was added by Rosenstock and others in 1988 to help the HBM fit the challenges of changing habitual unhealthy behavior (Glanz, Rimer & Viswanath, 2008).

Perceived susceptibility to the disease: This refers to a person's perception that a health problem or diagnosis is accurate. In this study, a woman's perception that she is likely to have complications of pregnancy will make her prepare herself for such complication.

Perceived Severity: A person may perceive a health problem, but actions towards intervention will not occur unless the health problem is perceived as being severe enough to have life threatening implications. Hence women's perception of severity of signs of complication of pregnancy will make them seek intervention from qualified care givers.

Perceived Benefits and cost: When one believes that there are benefits in accessing health care services and such services are affordable, he/she is more likely to utilize such services. When women perceive that they can benefit from the services of qualified care giver at an affordable cost having prepared for normal birth and complications that may arise they will more likely plan as well as access the services.

Perceived Barrier and Motivation: When one perceives that there is a barrier in achieving success, he or she will try to avert the barrier but when there is no perceived barrier, the person will be motivated to continue on the system. The implication is that when expectant women perceive that there is no barrier in preparing for birth and complication, they will be well motivated to do so.

Cues to Action: This is the strategies to action. In the study it includes the woman's desire to take the necessary action to prepare for birth and complication.

THE THREE DELAY MODEL

In 1994, Thaddeus and Maine brought about the first shift in the approach to maternal mortality by emphasizing an apparent paradox in public Health investment: "there is no well known primary prevention for most obstetric complication leading to death, nor is primary health care able to reduce maternal mortality". They suggested that time from the onset of a complication to its outcome must be the single measure to manage maternal complication. The three delay model developed by Thaddeus and Main (1994) identifies three phases of delay: delay in seeking care, delay in reaching care and delay in receiving adequate when reaching a health facility. The concept of these delays is segmental and interrelated as it links the onset of a complication and its adequate treatment and outcome to factors as diverse as distance, woman autonomy and medical assistance.

Delay in deciding to seek care. When a problem arises, the woman and her family have to decide to seek care. If the primary decision maker is not present, it may mean that the woman is not allowed to seek care or seeking care is delayed. Given the complexity of health needs, Rodriguez and his group identified additional delays for doing maternal mortality surveillance. They made the first delay the recognition of a problem, followed by the opportunity to seek care and take action. When a woman experiences a danger sign, she must recognize that she is experiencing a problem. If the pregnant woman, her family and care giver do not know the danger signs that indicate the woman are experiencing a complication. They will not know when they need to seek care.

Delay in arriving at the appropriate facility. Once the woman, family and partner make a decision to seek care, they must find a means of transport and the necessary fund to go to the appropriate facility. If there is no means of transport and / or the woman and her families do not have the necessary funds, the woman will not seek care in a timely manner.

Delay in receiving high-quality care. Once the woman has reached the appropriate level of care, she must receive high-quality care for whatever obstetric emergency she has suffered. If the care she receives is not high-quality or appropriate, then the woman have reached the appropriate facility in vain.

The cumulative effects of phases one and two delays contributes to some women reaching health facilities in a serious condition.

The result of a detailed analysis of maternal death in Nigeria by Health Reform Foundation of Nigeria (2006), indicate that 40% of delay associated with maternal deaths were due to first type of delay, 20% were due to the second, while the third account for 40% of cases. By contrast, delay remains a defining feature of maternal care in Nigeria. Such delays have been eliminated or substantially reduced in many developed countries, hence the lower rate of maternal mortality among pregnant women (Health Reform Foundation of Nigeria 2006).

CONCEPTUAL MODEL OF STUDY

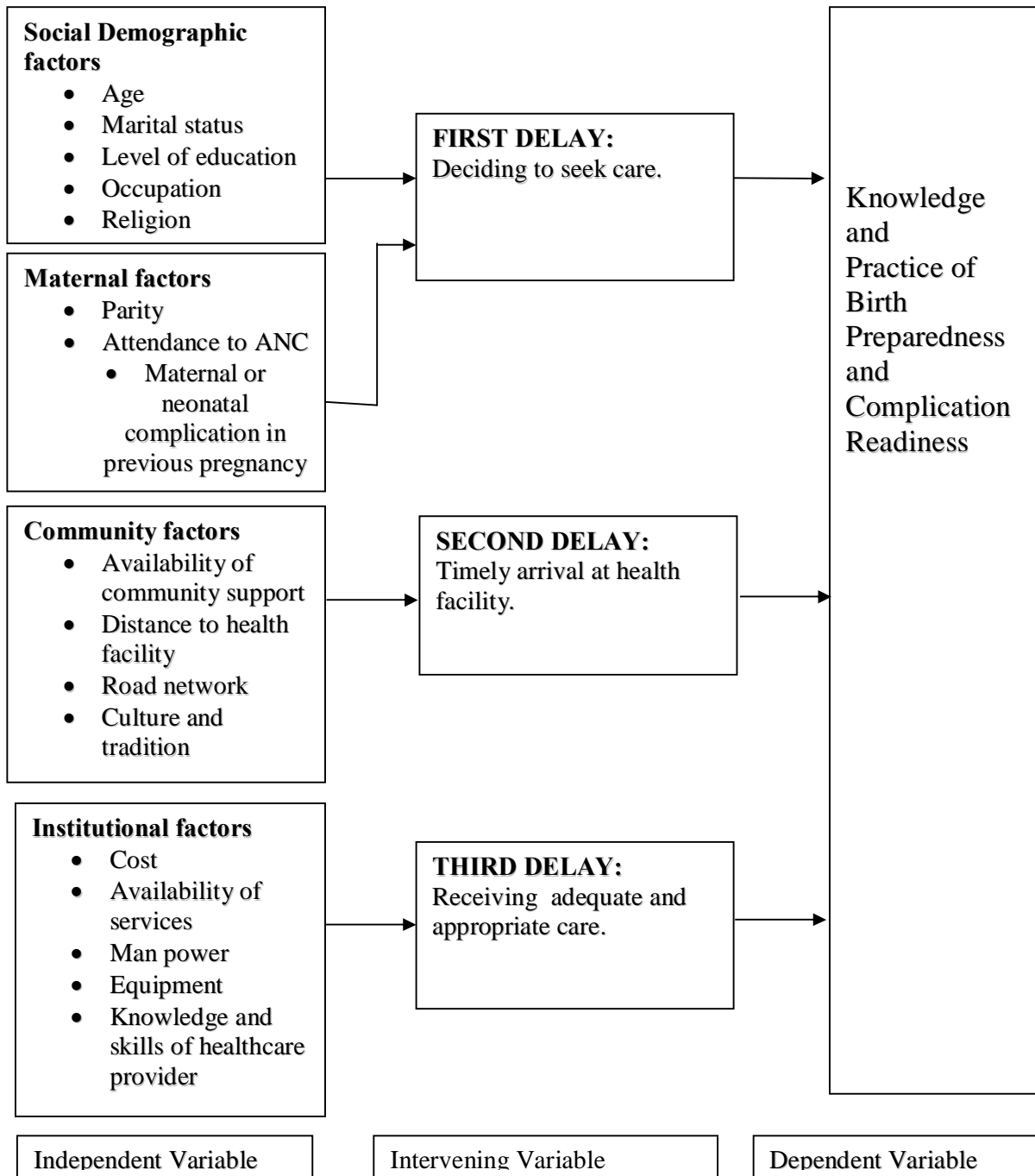


Fig 1 Source (adopted and modified from Thaddeus S and D Maine. 1994)

The independent variables are the socio-demographic, maternal, institutional and community factors. The intervening variables are the delays in seeking care, timely arrival at health care facility and receipt of adequate and appropriate care.

The intervening variables are expected to influence the extent to which the independent variables will determine the level of knowledge and practice of birth preparedness and complication readiness. The dependent variable is the expected outcome of the intervention.

EMPIRICAL REVIEW ON BIRTH PREPAREDNESS AND COMPLICATION READINESS.

A study of Awareness of Birth Preparedness and complication Readiness by Ekabua et al (2011) was conducted in Calabar and Biase Local Government Area of Cross River State, Nigeria. It was a cross-sectional, multicentric descriptive survey of women who gave birth between 1st January and 31st December 2009 at Maternal and Child Health Clinic in the local government. Eight hundred women were surveyed using structured questionnaires. Data obtained were analyzed using Epi info 2002 software, with logistic regression/test of association performed.

The finding revealed that Educational status was the predictor of awareness of birth preparedness ($P=0.0029$) but not a good predictor of intention to attend four antenatal clinic session ($P=0.449$). Parity was a better predictor of knowledge of severe vaginal bleeding as a key danger sign during pregnancy than educational level ($P=0.0009$ and $P=0.3849$, respectively). Plan to identify a means of transport to the place of childbirth was related to greater awareness of birth preparedness ($\chi^2 = 0.3255$; $P=0.5683$). Parity was a highly significant predictor ($P=0.0089$) of planning to save money. Planning to save money for childbirth was associated with greater awareness of community financial system ($\chi^2 = 0.8602$; $P=0.3536$).

Although awareness of the concept of birth preparedness was high (70%), knowledge of specific key danger signs was poor. Logistic regression analysis showed that of the four variables age, education status, marital status and parity, educational status was the best predictor of knowledge of concept of birth preparedness ($P=0.0029$; $P=0.0455$; $P=0.4433$ respectively).

Another study on Birth Preparedness and Complication Readiness among women was conducted by Mihret and Mesganaw (2006) in Adigrat town, north Ethiopia. It was a cross-sectional community-based study of women who gave birth in the last 12 month preceding the survey. A total of 534 women were randomly selected and they were interviewed using pre-tested structured questionnaire. The Data was analyzed using SPSS version 11 statistical software. Statistical tests such as chi-square test and measures of association (odd ratio (OR) with 95% confidence interval (CI) were used as deemed necessary.

Regarding the knowledge of the respondents about danger signs during pregnancy, relatively small proportion 58 (10.9%), 12(2.2%) and 28 (5.2%) of the respondents mentioned vaginal bleeding, blurred vision and swollen hands/face as danger signs during pregnancy respectively. Only 82 (15.4%) spontaneously mentioned at least one key danger sign, 14 (2.6%) mentioned at least two key danger

signs and 2 (0.4%) mentioned all three key danger signs. Regarding the knowledge of danger signs during labour and delivery, 84, (16.5%) mentioned vaginal bleeding. While 59 (11%), 38 (7.1%) and three (0.6%) of the respondents mentioned prolonged labour, retained placenta and convulsions as danger signs during labour and childbirth respectively. One hundred and twenty seven (23.8%) respondents spontaneously mentioned at least one key danger sign, 39 (7.3%) mentioned at least two key danger signs while 21 (3.9%) cited at least three key danger signs. Only one (0.2%) respondent named all the four key danger signs.

Regarding knowledge of danger signs during postpartum period 89 (16.7%), 6 (1.1%) and 8 (1.5%) of the respondents spontaneously mentioned severe vaginal bleeding, high fever and foul smelling vaginal discharge as danger signs during post partum period respectively. Only 92 (17.2%) of the study participants spontaneously mentioned all three key danger signs. Responses of the participants regarding their knowledge of preparation for birth and its complication revealed that 140 (26.2%), 154 (28.8%) 42 (7.9%) and 54 (10.1%) spontaneously identified and mentioned place of delivery, saving money, skilled provider and means of transportation respectively considering both unprompted and prompted responses. Identifying place of delivery, saving money, identifying skilled provider and identifying a mode of transport were mentioned by 86.9%, 83.7%, 40.4% and 40.8% of the respondents respectively.

Regarding respondents practice of preparation for birth and complication, majority (85.8%) of the respondents reported that they made some arrangement for birth of their baby, 209 (39.1%) reported that they identified place of delivery, 190 (35.6%) saved money, 56 (10.5%) identified skilled provider and 17 (3.2%) identified mode of transportation. Considering both prompt and unprompted responses, place of delivery selection (77%) and saving money (69%) were the most commonly identified component of birth preparedness and complication readiness. One hundred and eighteen (22.1%) of the total respondent reported that they identified place of delivery, saved money and identified a means of transportation ahead of delivery.

Question on factors associated with preparation for birth and complication revealed that maternal education was a strong predictor in preparation for birth and complication. Literate mothers were about two times more likely to be prepared for birth and complication than illiterate mothers (OR = 2.25, 95% CL 1.31, 3.88). Marital status was another factor that was strongly associated with Birth Preparedness and Complication Readiness. Married women were more likely to be prepared for birth and

complication than non-married women (OR = 5.36, 95% CL = 1.64, 1749). There was statistically significant association between parity and preparation for birth and its complication.

In conclusion, the study identified poor comprehensive knowledge and practice of preparation for birth and its complication.

Birth preparedness and complication readiness was studied by Agarwal et al (2010) among slum women in Indore City India. It was a cross-sectional study using 312 mothers of infants aged 2-4 months who were interviewed using a structured questionnaire. Analysis of data was conducted using the stata soft ware (version 9.1) (Stata corporation college station, Tx, USA). The p value of 0.05 was considered statistically significant. Findings revealed that 47.8% of the women were well-prepared for birth. Factors associated with well-preparedness were maternal literacy (95%) and availing of antenatal services (52.8%) while 52.2% were less prepared. Over two óthird (69.6%) of the mothers identified a trained birth attendance for delivery, while (30.4%) of the mothers did not identify a trained birth attendant for delivery. The most predominant reasons were lack of perceived need (19.8%) ,economic constraints (4.5%) and faith in traditional birth attendance (6.1%). About (63.8%) of the mothers identified a health facility for obstetric emergency, (39.7%) identified private charitable hospital and (24.1%) identified nursing homes while (36.2%) of the mothers who did not identify a health facility mentioned that they did not face any complication while pregnant. The large majority (76.9%) of the families saved money for incurring cost of delivery if needed. For the remaining 23.1% of the families meager earning was mostly spend on house hold purchase. Preparedness for emergency transportation was low (29.5%).

Overall, 47.4% of the mothers were well prepared, and 52.2% were less prepared. Factors associated with well-preparedness were maternal literacy (OR = 1.9, 95%; CI 1.1-3.4) and availing of antenatal services (OR = 1.7, CI 1.052.8) In conclusion the researchers observed that BPR was positively associated with improved skilled birth attendance.

Another study of Birth Preparedness and Complication Readiness was conducted by Urassa, Pembe and Mganga (2012) among women in Mpwapwa district, Tanzania. The study was aimed to assess knowledge and practice of birth preparedness and complication readiness among pregnant women and or women who gave birth two years preceding the survey. It was a cross-sectional multicentrics descriptive study involving 600 women. The participants were surveyed using a modified interview schedule recommended by JHPIEGO. Data was entered and analyzed by Statistical Package for Social Sciences (SPSS) version 16.0.

From the findings, it was revealed that 587 (97.8%) attended antenatal clinic at least once during their last pregnancy, two third of those who attended antenatal care made four or more visits. Five hundred and three (95.9%) of the women had antenatal card at their homes during the last pregnancy at the time of interview. The media gestation age at booking for antenatal care was 16 week (Range 8. - 32), however 438 (73.9%) women booked after 16 weeks of gestation.

Out of 600 women 89 (14.8%) knew three or more obstetric danger signs. The obstetric danger signs more commonly known to women were vaginal bleeding during pregnancy (19%), foul smelling vaginal discharge (15%) and baby stops moving (14.3%). Fewer women knew that larger than normal size of the abdomen, labour longer than 12 hours, cord prolapsed and convulsions as obstetric danger signs. Majority (86.2%) of the women had decision made on place of delivery, a person to make final decision, a person to assist during delivery, someone to care for the family and a person to escort her to the health facility. However, only 52 (8.7%) women arranged for potential blood donor.

Majority (68.1%) of the women planned to be delivered by a skilled attendant. One out of three women planned to deliver at home in the absence of a skilled birth attendance and rather than in the health facility. In the bivariate analysis the independent variable age of the women, education marital status, number of antenatal visits and knowing three obstetric danger signs were associated with birth preparedness and complication readiness. When all these independent variables were included in Multivariate logistic regression analysis women with primary education and above were twice more likely to be prepared and get ready for birth and complications. Furthermore women who knew three or more obstetric danger signs were three times more likely to be prepared for birth and complication. In conclusion, women with more education and those who are aware of obstetric complications were more prepared for birth and complications if emerged than illiterate women.

Birth Preparedness and Complication readiness was studied by Muhammedawel and Mesfin (2013) in Robe Woreda, Arsi zone, Oromia Region, central Ethiopia. It was a community based cross section study supplemented by qualitative design conducted among women who gave birth in the last 2 months preceding the survey irrespective of birth outcome. A total of 575 and interviewed using structured and semi-structure pre-tested questionnaire. Data analysis was done with Epi-info version 3.5.1 and SPSS version 16 statistical software.

The result shows that about 16.5% of the women were prepared for birth and its complications taking into account the place of delivery, identification means of transportation, skilled attendant

identification and saving money. Preparedness for birth and its complication was higher among educated mothers (A OR=6.23, 95% CL = 1.5, 25.87). Monthly income of 716 Ethiopians birr (A OR = 1.94, 95% CL = 1.01, 3.87) . ANC visit (A OR = 5, 68, 95% CL = 1.27, 25.4). Knowledge of obstetric complications (A OR = 2.94, 95% CL = 1.61, 5.37) and those who had given birth at health facility before their last delivery (A OR = 3, 9, 95% CL = 2.04, 746) were also significantly associated with birth preparedness and complication readiness.

In conclusion the study identified very low magnitude of birth preparedness and complication readiness in the study area and poor knowledge and practices of birth preparedness and its complications.

An assessment of Birth preparedness and complication readiness in antenatal women was carried out by Emma-Ukaegbu, Nwokeukwu and Uzochukwu (2014) in Umuaahaia North Local Government Area, Abia State. The study was aimed to assess the awareness of danger signs of obstetric complication and identify associated factors of pregnant women receiving antenatal care in public and private hospital. It was a descriptive cross sectional study involving 474 women. Interviewer administered questionnaire were used to obtain data. Data was analyzed using SPSS 16. Differences between women attending public and private facilities were assessed using chi-squared test and univariate analysis were performed.

The result revealed that the proportion of women with tertiary education using public facilities (69.9%) was higher than in the private clinic (50.6%) and they also belong more to skilled professional occupational group. Half of the women knew at least one obstetric danger sign. The percentage of women who knew at least four danger signs during pregnancy was more than 50% and about 23.6% and 21.7% of them during delivery and after delivery respectively. A composite index of 12 indicators (BP index) was computed yielding 44.15% without inclusion of community component and 33.1% when the community component was included. Only 0.3% of respondents had knowledge of availability of community transport system. The study concluded that the factors that affect BPCR include the role of husband, education level and parity. Non existence of community based support for maternal health services was observed.

Birth Preparedness and complication readiness among women of child bearing age group was studied by Markos and Bogale (2014) in Goba Woreda, Oromia region, Ethiopia. It was a community based cross sectional study involving women who gave birth in the last twelve month prior to the study

regardless of their birth outcome. Five hundred and sixty two women were successfully interviewed using a pre tested structured questionnaire. Data was analyzed using SPSS version 16.0.

The result revealed that only 29.9% of the respondents were prepared for birth and its complications. And only 82 (14.6%) study participants were knowledgeable about birth preparedness and complication readiness. Variables having statistically significant association with birth preparedness and complication readiness were women who attended up to primary education (AOR =3.24, 95% CL = 1.75, 6.02), attending up to secondary and higher level of education (AOR = 2.88, 95% CL=1.34, 6.15), the presence of antenatal care follow up (AOR = 8.07 95% CL=2.41, 27.00), knowledge about key danger signs during pregnancy (AOR = 2.08, 95% CL = 1.20, 3.60). The study concluded that only a small number of the respondents were prepared for birth and complication. Residence, educational status, antenatal care follow up, knowledge of key danger signs during pregnancy and post partum period were independent predictors of birth preparedness and complication readiness.

A study of Birth Preparedness and complication readiness was conducted by Kuganab ó Lem Dogudugu and Kanton (2014) among post partum women in a rural district of Ghana. The aim of the study was to determine the status of birth preparedness and complication readiness among post partum the women in the district. It was a cross sectional descriptive study, which involved 400 respondents. Quantitative data were collected by the use of structured questionnaires while the qualitative arm of the study employed focus group decision among the respondents. Quantitative data collected was analyzed using SPSS version 21.0, the focus group discussions were recorded transcribed and the qualitative data analyzed using a thematic analysis.

The result shows that 58.0% of the respondents sought prenatal care during the first trimester of pregnancy while 1.5% did not seek any prenatal care in the entire duration of their pregnancy. Also, 79.0% of the respondents were aware of the possibility of severe bleeding during pregnancy while 72.8% mentioned eclampsia as one of the signs danger of labour. Only 23% of the respondents met or followed the steps of birth preparedness and complication readiness plan. Factors that were found to influence birth preparedness and complication readiness include, number of deliveries (P=0.001) wealth index (P=0.001), level of education (P=0.001), marital status (P=0.001), number of ANC visit (P=0.004) and knowledge of danger signs (P=0.001).

In conclusion, the study demonstrated that socio-demographic characteristic of pregnant women have a significant association with the use of skilled delivery services.

Assessment of the Birth and Emergency Preparedness level of pregnant women was carried out by Envuladu and Zoakah (2014). It was a cross sectional study aimed at assessing the birth and emergency preparedness level of 250 pregnant women attending antenatal care in a primary health care in Jos North Local Government Area of Plateau State Nigeria. The subjects were interviewed using a structured questionnaire and the data was analyzed using SPSS version 17 and the results were presented in tables.

The result showed that 161 (64.4%) identified a place of delivery, 210 (84%) said they wanted to deliver in a hospital, while 40 (16%) choose home as their preferred place. 135 (54%) made arrangement for transportation, while 115 (46%) did not. Only 58 (23.2%) made arrangement for blood donation, while majority (83.6%) of the women saved money for the purchase of delivery items. The findings of the study suggest that a large proportion of the pregnancy women did not prepare for childbirth and emergency especially the prior arrangement for transportation and blood donation.

Factors affecting birth preparedness and complication readiness was studied by Gurmesa, Mesganaw and Alemayehu (2014), in Jimma zone, South west Ethiopia. It was a cross-sectional study conducted among randomly selected 3612 pregnant women from June ó September 2012. The data were collected by interview administered structured questionnaire and analyzed by SPSS version 20.0 and STATA 13. Mixed effects logistic regression model was used to identify factors affecting birth preparedness and complication readiness.

The results revealed that the status of birth preparedness and complication readiness was 23.3% (95 CL:218%, 24.9%) being in urban residence and having health centre within two hours distance were among the higher level factors increasing birth preparedness and complication readiness. Educational status of primary or above, husbands occupation of employment or merchant, third or above wealth quintiles, knowledge of key danger signs during labour, attitude and frequency of antenatal care visit were among the lower factors found to increase the likelihood of preparation for birth and complication. The study concluded that the status of birth preparedness and complication readiness was low. Both community level and individual level factors had important programme implications. Socio demographic and economic factors, knowledge of danger signs, attitude and antenatal care use were identified as associated factor.

Birth preparedness and complication readiness was surveyed by Acharya, Kaur Prasuna and Rasheed (2014) among antenatal women attendees of a primary health centre, Delhi. It was a facility

based cross sectional study among 417 antenatal attendees at a primary health centre New Delhi from January to April, 2012. The study was aimed to assess the status of birth preparedness and complication readiness among pregnant women and to study the socio-demographic factors affecting birth preparedness and complication readiness. The respondents were surveyed using semi structured questionnaire and data analyzed using SPSS version 12.

The result revealed that the BPCR index was very low (41%) although the preparedness level was high. Majority (81.1%) had identified a skilled attendant at birth for delivery. Nearly half of women (48.9%) had saved money for delivery and 44.1% women had also identified a mode of transportation for delivery. Overall, only 27.8% women knew about any one danger sign of pregnancy. The study concluded that the level of awareness regarding BPCR was very low (41%), education of a woman beyond middle school was the most important factor associated with awareness of various components of birth preparedness and complication readiness

A study of Birth Preparedness and complication readiness and associated factors was conducted by Wuhib, Workus and Muluken(2014) among pregnant women in Basoliben District, Amhara Regional State, Northwest Ethiopia. It was a community based cross sectional study conducted on a sample of 546 pregnant women. Data was collected using pre-tested questionnaire and collected data were analyzed using SPSS version 16 software Bivariate analysis was done to identify factors associated with birth preparedness and complication readiness and these found significant (P-value \leq .05) were entered in the multivariate logistic regress analysis.

Considering at least three elements of birth preparedness and complication readiness, 26.9% of the respondents were prepared for birth and complication women living in Urban areas were 2.55 times more likely to prepare for birth and its complication than those living in rural areas (AOR (95% CL): 2.55 (1.42, 4.56). Women who had antenatal care (ANC) follow up were 2.37 times more likely to be prepared for birth and complication than those who did not have. Women who had history of still birth were 3.41 times more likely to be prepared for birth. Respondents who know at least one danger sign during labour & child birth are two times more likely to be birth prepared and ready for complication than those who did not know any danger sign.

The study concluded that the proportion of mothers who are prepared for birth and complication is low. Women living in urban area, having antenatal care visit, with history of still birth and those aware of

danger signs during labour/childbirth were positively associated with birth preparedness and complication readiness.

Edmonds et al (2011), conducted a study on Type, Content and Source of social support perceived by women during pregnancy. It was a retrospective, cross-sectional study involving women aged 18-49 years residing in Matlab district of Bangladesh. The target population was women who had uncomplicated pregnancies and deliveries resulting in live births in both government and private hospitals between the months of May and August 2010. Twenty five women were surveyed using indepth interview guided by Spradleys ethnographic interviewing technique supplemented by participant observation. Data was analyzed using SPSS software version 16, using simple frequency.

The finding on the type and content of support revealed that the four most frequently mentioned support categories in rank order were practical help with routine activities, information and advice, emotional support/assurance and resources/maternal goods. Practical help with routines daily activities appears to be more forthcoming in a womans natal home. Nineteen respondents (78%) received resource and maternal goods support from husbands (55%) followed by mothers (15%) and mother in-laws (8%). The documentation of the sources of emotional support and assurance revealed the unexpected role husbands plan in supporting their wives. Mothers and sisters in-law are the top sources of emotional support mentioned by women. Information and advice support were from mothers and sisters in-law as well as health care providers.

SUMMARY OF LITERATIVE REVIEW

The literature review provided an overview of the concept of birth preparedness and complication readiness, maternal mortality and the causes, birth preparedness and complication readiness matrix, obstetric danger signs, knowledge of BPCR, practice of BPCR and factors that determine BPCR. Health belief model and Three delay model were used for the theoretical reviews. The conceptual framework for the study was adopted from John Hopkins Programme for International Education in Gyneacology and Obstetrics which demonstrated the factors associated with BPCR. From the empirical review, many studies have been done on the subject matter in India and sub-Saharan African countries including Nigeria but none has been done in Enugu State. Hence the present study is an attempt to bridge the gap and is aimed at assessing the knowledge and practice of birth preparedness and complication readiness and factors associated with the practice among women in Enugu South Local Government Area of Enugu State.

CHAPTER THREE

RESEARCH METHODS

This chapter deals with the research design, area of study, population of study, sample and sampling procedure, instrument for data collection, validation of instrument, ethical consideration, procedure for data collection and method of data analysis.

Research Design

The descriptive cross-sectional survey research design will be adopted for this study. Shuttleworth (2008), defines descriptive research design as a scientific method which involves observing and describing the behaviour of a subject without influencing it in any way. However cross-sectional design is considered appropriate because it allows for collection of data from a group of people at the same time for the purpose of describing a phenomenon under study. Descriptive study also allows the researcher to discuss the phenomenon under study as it exists as at the time of study. This design has been utilized in similar studies (Emma-Ukaegbu, Nwokeukwu & Uzochukwu, 2014; Ekabua et al 2011, Mihret & Mesganaw 2008).

Area of Study

This study will be carried out in health facilities in Enugu South local government area of Enugu State, Nigeria. Enugu South is one of the seventeen local government areas in Enugu State. Its headquarters is in Uwani and it has an area of 67km² and a population of 198, 723 (NPC 2006). At the boundaries of the local government are Enugu East L.G.A at the north, Nkanu West L.G.A at the south, Nkanu East L.G.A at the east and Udi L.G.A at the west. It is made up of five towns namely Akwuke, Amaechi, Ugwuaji, Obeagu and Amaechi Uwani. There are 12 public health care facilities in the local government comprising of 3 secondary and 9 primary health care facilities. There are also 67 registered public health care facilities in the local government, 45 of them are offering antenatal services (40 hospitals and 5 maternity homes).

Population of Study

The population for the study will comprise about 17, 565 female adults (NPC, 2006). The target population will be pregnant women receiving antenatal care in public and private healthcare facilities in Enugu South local government area. This population is unknown.

Sample

The sample size will be determined using the sample determination formula as developed by Creative Research System (2012) as follows.

$$n = z^2 \frac{p(1-P)}{d^2} \text{ (Creative Research System, 2012)}$$

Where

n = sample size

d = error margin (error limit 0.05)

z = 1.96 (at 95% confidence interval)

p = Proportion or a best guess about the value of the proportion of interest. Since there is no information on the proportion of interest, the convention 50% which is usually used for unknown proportion is used. It is also expressed in decimal as 0.5

$$\begin{aligned} n &= 1.96 \times 1.96 \times 0.5 (1-0.5)/0.05 \times 0.05 \\ &= 0.9604/0.0025 \\ &= 384.16 \end{aligned}$$

Therefore the minimum sample size will be 384. Given an anticipated non complete response rate of 10%, the sample size is calculated as

$$10/100 \times 384 = 38.4$$

$$384 + 38.4 = 422.4$$

This is approximated to 422.

This sample size will be split equally between the public and private facilities providing antenatal care giving at least 211 respondents at each sector of the healthcare delivery.

Inclusion Criteria

- All pregnant women attending either public or private healthcare facilities in Enugu South L.G.A
- Willingness to participate in the study.
- Present at the time of data collection.

Sampling Procedure

A multi stage sampling technique will be utilized. Enugu South local government area is purposely chosen for the study. Simple random sampling technique will be used to select 1 out of the 3 public secondary healthcare facilities and 3 out of the 9 public primary healthcare facilities, 3 out of the 40 private facilities and 1 out of the 5 private maternities. Equal percentage of the sample unit will be allotted to each of the 8 selected health facilities such that each of them accounts for 12.5% of the 422 sample units, and translates to about 53 respondents each. This is done because the population of

pregnant women that receive antenatal services in any of the healthcare facility is not known. The respondents that will meet the inclusion criteria will be selected using convenience sampling technique. No participant will be permitted to respond twice.

Instrument for Data Collection

The instrument for data collection was an interview guide designed by the researcher, and made up of 27 items based on the objectives of the study. It consists of 3 parts. Section A, B & C. Section A consists of 5 questions to describe the socio-demographic characteristics of the respondents. Section B comprised of 5 questions that elicited the obstetric data of the respondent. Section C consists of 17 questions that measured the respondents' knowledge and practice of BP/CR and identified the social support needed by pregnant women to enable them prepare for birth and complications. Responses to questions in sections A & C were used to determine the relationship between socio-demographic characteristic of the pregnant women and their knowledge and practice of BP/CR.

Validity of Instrument

The questionnaire was presented to the researcher's supervisor and two experts in Maternal and Child Health to assess the face and content validity of the items. Their suggestions and corrections were used to make adjustment in the questionnaire items.

Reliability of the research instrument

Reliability of the research instrument was determined using test-retest reliability. A pilot study was conducted using 42 pregnant women that met the inclusion criteria but not part of the study in a registered private hospital in Enugu North Local Government Area of Enugu State. The instrument was administered twice at 2 weeks interval. The scores from the two administrations were correlated using the Pearson Product Moment Correlation coefficient method. A correlation co-efficient of 0.89 was obtained which showed that the instrument was reliable.

Ethical Consideration

Ethical approval was obtained from the Research Ethic Committee of Enugu State Ministry of Health. Informed consent was obtained from each of the respondents. Participants were assured of confidentiality of any information given.

Procedure for Data Collection

With an enabling introductory letter from the head of Department of Nursing Sciences, University of Nigeria Enugu Campus (UNEC) and the ethical approval, permission to carry out the study in the local government area was obtained from the head of Health Department Enugu South local government area. Verbal consent was obtained from the proprietors of the public and private antenatal care providers respectively before administering the questionnaire. Four research assistants were involved in data collection. They were trained on the purpose and objective of the study, content of the research instrument, how to administer the instrument and how to collect data from the respondents. They were also trained on vernacular translation of the key words in the research instruments to enable them collect data from participants who are not literate. The researcher and the assistants visited the head of each facility for self introduction before the collection of data. Upon accepting to participate in the research, the interview guide was used to obtain information from pregnant women who met the inclusion criteria,

The researcher and assistants collected data from all consented respondents in the selected public and private health care facilities. Data collection lasted for one month. No participant was allowed to respond twice.

Method of Data Analysis

Descriptive statistics including frequency (f) and percentage was used to present the data on socio-demographic variable, knowledge, practice and determinants of birth preparedness and complication readiness. Inferential statistics was used to test the association among variables using Pearson chi-square test. Data generated from the study was analyzed using the Statistical Package for Social Science (SPSS) version 17 for windows.

CHAPTER FOUR

PRESENTATION OF RESULTS

In this chapter, the data generated from the study are presented using tables according to the research objectives. Out of 422 copies of interviewer administered questionnaires used to collect data, only 419 copies were properly filled and fit for analysis, this gives a response rate of 99.3%.

Table 1: Demographic distribution of the respondents.

n = 419

Demographic Characteristics	No of Respondents	Percentage
Age Range		
15 ó 19years	31	7.4%
20 ó 24years	153	36.5%
25 ó 29years	79	18.9%
30 ó 34years	72	17.2%
35 ó 39years	56	13.4%
40years & above	28	6.7%
Minimum Maximum Mean	Standard deviation	
15 52 27.78	6.754	
Marital Status		
Married	386	92.1%
Single	17	4.1%
Separated	8	1.9%
Widow	5	1.2%
Divorced	3	0.7%
Religion		
Christianity	409	97.6%
Islam	6	1.4%
Others	4	1.0%
Highest Educational Level		
No formal education	2	0.5%
Primary education	21	5.0%
Secondary education	181	43.2%
Tertiary education	215	51.3%
Occupation		
Housewife	131	31.3%
Civil Servant	130	31.0%
Self-employed	146	34.8%
Others (farming, artisan)	12	2.9%

From Table 1 on the demographic distribution, the age range of the respondents ranges from 15 years to 52 years while the mean age and standard deviation are 27.8 ± 7.0 years. 31 (7.4%) were within the age range of 15-19 years, while a greater number 153 (36.5%) were within the age range of 20-24 years, 79 (18.9%) are in the age range of 25-29 years, 72 (17.2%) were within the age range of 30-34 years while 56 (13.4%) and 28 (6.7%) were within the age range of 35-39 years and 40 years and above respectively. 386 (92.1%) are married, 17 (4.1%) were single mothers, 8 (1.9%), 5 (1.2%) and 3 (0.7%) were separated, widowed and divorced respectively.

Almost all the respondents 409 (97.6%) were of Christian religion. 2 (0.5%) had no formal education, 21 (5.0%) had primary schools education, 181 (43.2%) had secondary school education while the majority 215 (51.3%) had tertiary education. 131 (31.3%) and 130 (31.0%) were housewife and civil servants respectively, 84 (20.0%) were traders, 62 (14.8%), were self employed while the rest 12 (2.9%) were farmers, artisans etc.

Table 2: Obstetric distribution of the respondents.**n = 419**

Obstetric Data	No of Respondents	Percentage
No of Pregnancies		
1 ó 4	406	96.9%
5 ó 8	13	3.1%
Number of Deliveries		
1 ó 4	394	94.0%
5 ó 8	24	6.0%
Number of children alive		
0	184	43.9%
1 ó 4	227	54.2%
5 ó 8	8	1.9%
Number of children dead		
0	380	90.7%
1-2	25	6.0%
3-4	14	3.3%
Any deaths within one month		
0	380	90.7%
1-2	36	8.6%
3-4	3	0.7%
Your expected date of delivery		
Known	400	95.5%
Not Known	19	4.5%

From Table 2 on the obstetric distribution of the respondents, majority of them 406 (96.9%) had 1-4 previous pregnancies, while only 13 (3.1%) had 5-8 previous pregnancies. More so, 394 (94.0%) of the respondents had 1-4 deliveries, while 24 (6.0%) of them had 5-8 previous deliveries. On the number of children alive, 184 (43.9%) were primigravida, while 227 (54.2%) of them had 1-4 children alive, and 8 (1.9%) of them had 5-8 children alive. From the number of children dead, 380 (90.7%) of them had not lost a child, while 25 (6.0%) of them had lost 1- 2 children, and 14 (3.3%) of them had lost 3-4

children. From the number of children dead within one month, 380 (90.7%) of them had not lost a child within one month of delivery, while 36 (8.6%) of them lost 1-2 children, and 3 (0.7%) of them lost 3-4 children. 400(95.5%) of the respondents knew their expected dates of delivery whereas 19(4.5%) did not know their expected dates of delivery.

Objective 1: To elicit women’s knowledge about preparation for birth and its complication.

To realise this objective, questionnaire items numbers 1 to 6 were subjected to descriptive analysis using frequencies and percentages. The results of the analysis are presented on table 3 below.

n = 419

Knowledge about Preparation	No of Respondents	Percentage
Is health talk one of the services provided in the antenatal clinic?		
Yes	419	100.0%
No	0	0.0%
If yes, have you been taught about how to prepare for childbirth and the complications that may arise during pregnancy, labour and child birth?		
Yes	419	100.0%
No	0	0.0%
Do you think a woman should prepare in advance for the birth of her child?		
Yes	419	100.0%
No	0	0.0%
If yes, when should a woman start preparing for the birth of her child?		
1-3months	77	18.4%
4-6months	282	67.3%
7-9months	60	14.3%
If you have been taught, what are you supposed to do in preparation for childbirth?		
Buy delivery requirements	395	94.3%
Know your expected date of delivery	380	90.7%
Save some money	291	69.5%
Arrange for someone to accompany you to the place of delivery	134	32.0%
Select a qualified birth attendant	127	30.3%
Arrange for transportation	83	19.8%
Select a place for delivery	9	2.1%
What are you supposed to do in preparation for any complication that may arise?		
Arrange access to emergency funds/ money	321	76.6%
Be able to identify the danger signs of pregnancy, labour and childbirth when they occur	291	69.5%
Plan for emergency transportation	164	39.1%
Arrange for blood	67	16.0%
Make a plan for decision making in case your husband is away	31	7.4%
Knowledge of the components birth preparedness and complication readiness		
Poor knowledge	247	59.0%
Fair Knowledge	86	20.5%
Good knowledge	86	20.5%

Table 3 showed the women's knowledge about preparation for birth and its complications. All the respondents (100%) said that health talk was one of the services provided in the antenatal clinic and they have been taught about how to prepare for childbirth and the complication that may arise during pregnancy, labour and childbirth. All the respondent (100%) agreed that a women should prepare in advance for the birth of her child. 77(18.4%) of the respondents said that a women should start to prepare for childbirth at 1-3 month while 282 (67.3) and 60 (14.3%) indicated 4-6 months and 7-9 months respectively. Concerning what they are supposed to do in preparation for childbirth 395(94.3%) mentioned that they have been taught to buy delivery requirements, 380 (90.7%) mentioned knowing their expected dates off delivery, 291(69.3%) knew that they should save some money, 134 (32.0%) knew that they should arrange for someone to accompany them to the place of delivery while 127 (30.3%) knew that they should select a qualified birth attendant. Just a few 83 (19.8%) and 9 (2.1%) knew that they should arrange for transportation and select a place for delivery respectively. Responding to what they are supposed to do in preparation for any complication that may arise, 321 (76.6%) mentioned that they should arrange access to emergency money, while 291 (69.5%) said being able to identify the danger signs of pregnancy labour and childbirth when they occur,164 (39.1%) said that they are supposed to plan for emergency transportation , while the minority 67 (16.0%) and 31 (7.4%) knew that they are supposed to arrange for blood and make a plan for decision making in case the husband is always.

In general, 247(59.0%) of the respondents has poor knowledge of the components of BPCR, 86(20.5%) had fair knowledge also 86(20.5%) had good knowledge.

Objective 2: To determine pregnant women’s level of knowledge on danger signs during pregnancy, labour and postpartum periods

To realise this objective, questionnaire items numbers 7 to 10 were subjected to descriptive analysis using frequencies and percentages. The results of the analysis are presented on table 4 below.

n=419

Knowledge of Danger Signs	No of Respondents	Percentage
Do you think a woman can develop some problems at any point during her pregnancy till delivery?		
Yes	419	100.0%
No	0	0.0%
What are the problems a woman may experience during pregnancy?		
Bleeding or gush of fluid from the vaginal	413	98.6%
Pelvic or abdominal pain	314	74.9%
Swollen face and leg	294	70.2%
Not seeing clearly	123	2.94%
Fast or reduced fetal movement	84	20.0%
Regular contraction before 37weeks	83	19.8%
High fever	70	16.7%
Unusual weight gain	31	7.4%
Headache	29	6.9%
What are the major danger signs during labour and childbirth?		
Severe vaginal bleeding	405	96.7%
Prolonged labour over 12 hours	190	45.3%
Placenta not delivered 30minutes after baby	159	37.9%
Convulsion	136	32.5%
Severe headache	16	3.8%
Loss of consciousness	5	1.2%
What are the major danger signs a woman could have after delivery?		
Severe vaginal bleeding	400	95.5%
Foul smelling vaginal discharge	199	47.5%
High fever	164	39.1%
Blurred vision	35	8.4%
Swollen hands and face	12	2.9%
Headache	7	1.7%
Convulsion	5	1.2%
Knowledge of danger signs of pregnancy, labour and postpartum		
Poor knowledge	215	51.3%
Fair Knowledge	152	36.3%
Good knowledge	52	12.4%

Table 4 showed the women's knowledge about danger signs of pregnancy, labour and post partum periods. All the respondents 419 (100%) believe that a woman can develop some problems at any point during her pregnancy till delivery. Mostly mentioned are bleeding or gush of fluid from the vagina 413 (98.6%), pelvic or abdominal pain 314 (74.9%) and swollen face and legs 294 (70.2%). Also mentioned were not seeing clearing 123 (29.4%) reduced or fast fetal movement 84 (20.0%), regular contraction before 37 weeks 83 (19.8%), high fever 70 (16.7%) unusual weight gain 31 (7.4%), and headache 29 (6.9%). In response to what the major danger signs during labour and childbirth are 405 (96.7%) mentioned severe vaginal bleeding, 190 (45.3%) mentioned prolonged labour over 12 hrs and 159 (37.9%) mentioned placenta not delivered 30 minutes after baby. Also mentioned were convulsion 136 (32.5%), severe headache 16 (3.8%) and loss of consciousness 5 (1.2%). Majority of the respondents 400 (95.5%) mentioned severe vaginal bleeding as a major danger sign after delivery. Others include foul smelling vaginal discharge 199 (47.5%), high fever 164 (39.1%), blurred vision 35 (8.4%), swollen hand and face 12 (2.9%), headache 7 (1.7%) and convulsion 5 (1.2%). The majority of the respondents 215 (51.3%) had poor knowledge of the key danger signs of pregnancy, labour and postpartum, while 152 (36.3%) and 52 (12.4%) had fair and good knowledge respectively.

Objective 3: To ascertain the practice of birth preparedness and complication readiness by pregnant women

To realise this objective, questionnaire items numbers 11 to 15 were subjected to descriptive analysis using frequencies and percentages. The results of the analysis are presented on tables 5 and 6 below.

n=419

Practice of Birth Preparedness	Number of Respondents	Percentage
Have you started preparing for your delivery?		
Yes	419	100.0%
No	0	0.0%
At what month did you register for antenatal?		
1 ó 3months	66	15.8%
4 ó 6months	313	74.7%
6months & above	40	9.5%
State items bought for delivery		
Hospital items	275	65.6%
Baby items	28	6.7%
Mother items	11	2.6%
Not specified	105	25.1%
Who is your selected birth attendant?		
Doctor/Nurse /Midwife	349	83.3%
Not specified	70	16.7%
Name selected person to accompany you to place of delivery?		
Mother	101	24.1%
Husband	16	3.8%
Others	49	11.7%
Not specified	253	60.4%
Which means of transport will you use?		
Private car	247	58.9%
Keke/ Taxi	35	8.4%
Bike/ Okada	28	6.7%
Commercial bus	4	0.9%
Not specified	105	25.1%
State the amount of money saved to date for your delivery		
<N5,000	1	0.2%
N5,000 ó N10,000	39	9.3%
N11,000 ó N20,000	37	8.8%
N21,000 ó N50,000	30	7.2%
N51,000 ó N100,000	17	4.1%
Above N100,000	11	2.6%
Not specified	284	67.8%
Name your selected place of delivery		
Hospital	159	14.1%
Health centre/ post	45	10.7%
Maternity	37	8.8%
Not specified	278	66.3%

Practice of Complication Readiness	Number of Respondents	Percentage
Are you ready or is getting ready for any Complication that may arise in the course of your pregnancy?		
Yes	375	89.5%
No	44	10.5%
Who is your identified compactable blood donor?		
Husband	21	5.6%
Brother	6	1.6%
Cousin	1	0.3%
Not specified	347	92.5%
Which is your arranged means of emergency transportation?		
Private car	208	55.5%
Commercial bus	32	8.5%
Bike	29	7.7%
Keke/taxi	1	0.3%
Not specified	105	28.0%
State the amount of money saved to date for your delivery		
<N5,000	1	0.3%
N5,000 ó N10,000	37	9.9%
N11,000 ó N20,000	34	9.1%
N21,000 ó N50,000	32	8.5%
N51,000 ó N100,000	20	5.3%
Above N100,000	9	2.4%
Not specified	242	64.5%
Name the arranged person to accompany you to the place of delivery?		
Mother	108	28.8%
Mother in-law	18	4.8%
Husband	17	4.5%
Aunty	11	2.9%
Sister in-law	9	2.4%
Others (neighbour, friend, cousin, house help etc)	14	3.7%
Not specified	198	52.8%
Who will look after your home while in the hospital?		
House help	38	10.1%
Sister	32	8.5%
Mother in-law	27	7.2%
Sister in-law	13	3.5%
Mother	8	2.1%
Others (daughter, aunty, brother, father, other kids etc)	7	1.9%
Not specified	250	66.6%
Who will make decision in the absence of key decision maker?		
Self	120	32.0%
Mother/mother in-law /others	6	1.6%
Not specified	249	66.4%
Practice of birth preparedness and complication readiness		
Poor Practice	273	65.2%
Fair practice	84	20.0%
Good practice	62	14.8%

Tables 5 and 6 showed the practice of birth preparedness and complication readiness by pregnant women. All the respondents (100%) said that they have started preparing for their delivery. 66(15.8%) of them registered for antenatal care at 1-3 months, while the majority 313 (74.7%) registered at 4-6months. Only a few 40 (9.5%) registered at 6months and above. 275 (65.6%) of the respondents stated that they have bought hospital requirement needs for their delivery 28 (6.7%) bought baby items, 11 (2.6%) bought mother items while 105 (25.1%) did not buy any item for their delivery.

Most of the respondents 349 (83.3%) selected doctors, nurses and midwives as their choice of birth attendant while 70 (16.7%) did not selected a birth attendant. 166 (39.6%) of the respondents selected a person to accompany them to the place of while 253 (60.4%) did not. In response to the means of transportation to be used, 105 (25.1%) did not select any means of transportation, 247 (58.9%) indicated that they will use private car while 67(16.0%) arranged for a public means of transportation. Most of the respondents 284 (67.8%) did not save money for delivery, 1 (0.2%) saved below N5,000.00, 123 (29.4%) saved between N 5,000 to N100,000 while 11(2.6%) saved above 100.000.00. In response to question on selected place of delivery 159(38.9%) selected hospital 45 (10.7%) selected health centre /health posts 37(8.8%) selected maternity while the rest 278 (66.3%) did not selected a place for delivery. From among the respondents 275 (89.5%) of them were getting ready for any complications that may arise in the course of their pregnancy while 44(10.5%) were not. Almost all 347 (92.5%) the response did not identify a compatible blood donor were as only 28 (7.5%) did. In response to their arranged means of emergency transportation 208 (55.5%) arranged to use their private cares, 62 (16.5%) arranged to use different means of public transportation while 105 (28.0) did not arrange for any means of emergency transportation. 242 (62.5%) did not save money while 133 (35.5%) saved some amount ranging from > 5,000 to <100,000. 177 (47.2%) of the respondent arranged for a person to accompany them to the hospital however a large number 198(52.8%) did not make such arrangement. 250 (66.6%) respondents did not mention the person to look after the home

while she was in the hospital, the rest 125(33.5%) made mention of their mother, sister, house help the as the person to look after her home while she was in the hospital. 120 (32.0%) indicated that they will make decision in absence of key decision maker 6 (1.6%) indicated that other people will make the decision on their behalf while 249 (66.4%) did not have alternative decision maker. A greater number 273(65.2%) of the respondents were poor in their practice of BPCR, 84(20.0%) were fair while very few 62(14.8%) were good in their practice.

Objective 4: To identify social supports needed by pregnant women to enable them prepare for birth and its complications.

To realise this objective, questionnaire item number 16 was subjected to descriptive analysis using frequencies and percentages. The results of the analysis are presented on table 6 below.

n = 419

Social Supports Needed	No of Respondents	Percentage
What form of support do you need to enable you prepare for childbirth and complications?		
Cash	251	59.5%
Borrow from people	152	36.3%
Selling of assets	5	1.2%
Psychological support	401	95.7%
Someone to run errand	292	69.7%
Someone to take care of family when you are away	90	21.5%
Support to make an urgent decision when the need arises	44	10.5%

Table 7 above showed the social support needed by pregnant women to enable them prepare for birth and its complications. All the respondents indicate that they need one or more forms of social support. The mostly mentioned type of support was psychological support 401 (95.7%) followed by someone to run errand 292 (69.7%), thirdly was cash support 251 (59.5%). Other include borrow from people 152 (36.3%), someone to take care of family when the women was away 90 (21.5%), someone to make an urgent decisions when the need arises 44 (10.4%) while the least needed support was from selling of assets 5(1.2%).

Objective 5: To determine the relationship between socio-demographic characteristics of mothers and knowledge of birth preparedness and complication readiness.

To realise this objective, questions on socio-demographic characteristics of respondents and knowledge of birth preparedness and complication readiness were subjected to inferential statistics using Pearson Chi-square test. The results of the analysis are presented on table 7 below.

Demographic Characteristics	Knowledge of Birth Preparedness			Total	χ^2	P-value
	Poor Knowledge	Fair Knowledge	Good Knowledge			
Age Range						
15 ó 19years	30 (12.1%)	1 (1.2%)	0 (0.0%)	31 (7.4%)	261.31	0.000*
20 ó 24years	144 (58.3%)	9 (10.5%)	0 (0.0%)	153 (36.5%)		
25 ó 29years	49 (19.8%)	21 (24.4%)	9 (10.5%)	79 (18.9%)		
30 ó 34years	17 (6.9%)	30 (34.9%)	25 (29.1%)	72 (17.2%)		
35 ó 39years	5 (2.0%)	21 (24.4%)	30 (34.9%)	56 (13.4%)		
40years & above	2 (0.8%)	4 (4.7%)	22 (25.6%)	28 (6.7%)		
Marital Status						
Married	227 (91.9%)	77 (89.5%)	82 (95.3%)	386 (92.1%)	1.398	0.001*
Single	15 (6.1%)	1 (1.2%)	1 (1.2%)	17 (4.1%)		
Separated	1 (0.4%)	6 (7.0%)	1 (1.2%)	8 (1.9%)		
Widow	3 (1.2%)	2 (2.3%)	0 (0.0%)	5 (1.2%)		
Divorced	1 (0.4%)	0 (0.0%)	2 (2.3%)	3 (0.7%)		
Religion						
Christianity	237 (96.0%)	86 (100.0%)	86 (100.0%)	409 (97.6%)	7.134	0.129
Islam	6 (2.4%)	0 (0.0%)	0 (0.0%)	6 (1.4%)		
Others	4 (1.6%)	0 (0.0%)	0 (0.0%)	4 (1.0%)		
Highest Educational Level						
No formal education	2 (0.8%)	0 (0.0%)	0 (0.0%)	2 (0.5%)	80.749	0.000*
Primary education	19 (7.7%)	0 (0.0%)	2 (2.3%)	21 (5.0%)		
Secondary education	144 (58.3%)	19 (22.1%)	18 (20.9%)	181 (43.2%)		
Tertiary education	82 (33.2%)	67 (77.9%)	66 (76.7%)	215 (51.3%)		
Occupation						
Housewife	120 (48.6%)	6 (7.0%)	5 (5.8%)	131 (31.3%)	191.925	0.000*
Civil Servant	16 (6.5%)	53 (61.6%)	61 (70.9%)	130 (31.0%)		
Trading	59 (23.9%)	12 (14.0%)	13 (15.1%)	84 (20.0%)		
Self-employed	40 (16.2%)	15 (17.4%)	7 (8.1%)	62 (14.8%)		
Others (farming, artisan)	12 (4.9%)	0 (0.0%)	0 (0.0%)	12 (2.9%)		

* P<0.005 (Significant)

In Table 8 on the relationship between socio-demographic characteristics of mothers and knowledge of birth preparedness and complication readiness; there is significant relationship between age of mothers and knowledge of birth preparedness (P<0.05). This implies that mothers that were advanced in age had good knowledge of birth preparedness than younger mothers. Also, there is significant relationship between marital status of mothers and knowledge of birth preparedness (P<0.05). This implies that

mothers that were married had good knowledge of birth preparedness than single mothers. The educational level of the mothers had significant relationship with their knowledge on birth preparedness and complication readiness ($P < 0.05$). This implies that the higher their educational level the better their knowledge on birth preparedness. The occupation of the mothers had significant relationship with their knowledge on birth preparedness ($P < 0.05$). This implies that the civil servant had the best knowledge of birth preparedness than any mothers in other occupational group.

Objective 6: To determine the relationship between socio-demographic characteristics of mothers and practice of birth preparedness and complication readiness.

To realise this objective, questions on socio-demographic characteristics of respondents and practice of birth preparedness and complication readiness were subjected to inferential statistics using Pearson Chi-square test. The results of the analysis are presented on table 8 below.

Demographic Characteristics	Practice of Birth Preparedness			Total	χ^2	P-value
	Poor Practice	Fair Practice	Good Practice			
Age Range						
15 ó 19years	25 (9.2%)	5 (6.0%)	1 (1.6%)	31 (7.4%)	67.500	0.000*
20 ó 24years	116 (42.5%)	26 (31.0%)	11 (17.7%)	153 (36.5%)		
25 ó 29years	56 (20.5%)	14 (16.7%)	9 (14.5%)	79 (18.9%)		
30 ó 34years	46 (16.8%)	16 (19.0%)	10 (16.1%)	72 (17.2%)		
35 ó 39years	26 (9.5%)	14 (16.7%)	16 (25.8%)	56 (13.4%)		
40years & above	4 (1.5%)	9 (10.7%)	15 (24.2%)	28 (6.7%)		
Marital Status						
Married	246 (90.1%)	81 (96.4%)	59 (95.2%)	386 (92.1%)	13.478	0.096
Single	15 (2.9%)	1 (1.2%)	1 (1.2%)	17 (4.1%)		
Separated	6 (2.2%)	0 (0.0%)	2 (3.2%)	8 (1.9%)		
Widow	5 (1.8%)	0 (0.0%)	0 (0.0%)	5 (1.2%)		
Divorced	1 (0.4%)	2 (2.4%)	0 (0.0%)	3 (0.7%)		
Religion						
Christianity	268 (98.2%)	81 (96.4%)	60 (96.8%)	409 (97.6%)	1.250	0.870
Islam	3 (1.1%)	2 (2.4%)	1 (1.6%)	6 (1.4%)		
Others	2 (0.9%)	1 (1.2%)	1 (1.6%)	4 (1.0%)		
Highest Edu Level						
No formal education	2 (0.7%)	0 (0.0%)	0 (0.0%)	2 (0.5%)	35.620	0.000*
Primary education	13 (4.8%)	6 (7.1%)	3 (3.2%)	21 (5.0%)		
Secondary education	145 (53.1%)	22 (26.2%)	14 (22.6%)	181 (43.2%)		
Tertiary education	113 (41.4%)	56 (66.7%)	46 (74.2%)	215 (51.3%)		
Occupation						
Housewife	108 (39.6%)	16 (19.0%)	7 (11.3%)	131 (31.3%)	70.142	0.000*
Civil Servant	50 (18.3%)	41 (48.8%)	39 (62.9%)	130 (31.0%)		
Trading	61 (22.3%)	17 (20.2%)	6 (9.7%)	84 (20.0%)		
Self-employed	43 (15.8%)	9 (10.7%)	10 (16.1%)	62 (14.8%)		
Others (farming, artisan)	11 (4.0%)	1 (1.2%)	0 (0.0%)	12 (2.9%)		

* P<0.005 (Significant)

The result in Table 9 on the relationship between socio-demographic characteristics of mothers and practice of birth preparedness and complication readiness, only the age(P<0.05), educational level (P<0.05), and occupation(P<0.05) of the mothers had significant relationship with their practice of birth preparedness and complication readiness This implies that the higher their age and educational

level the higher their practice on birth preparedness and complication readiness. Also, the civil servant had the best practice of birth preparedness than any mothers in other occupational group.

Summary of major findings

As regards to knowledge of birth preparedness and complication readiness, majority of the respondents were not able to elicit at least 5 items of the components of birth preparedness and at least 4 items of complication readiness thus lacked good knowledge about preparation for birth and its complications.

Almost all the respondents mentioned vaginal bleeding as the key danger sign of pregnancy, labour and post partum. A majority also mentioned swollen face and leg and abdominal pains as danger signs of pregnancy. Most of the respondents could not mention any other key danger signs of labour and postpartum apart from vaginal bleeding.

Majority of the respondents registered for antenatal care in their second trimester and have selected a qualified birth attendant which was the most practiced component of birth preparations. The least practiced components of birth preparedness by the respondents were saving money. The least practiced components of complication readiness was selection of a compatible blood donor while the most practiced components was arrangement of a person to accompany the pregnant woman to the place of delivery. Most of the respondents were not good in their practice birth preparedness and complication readiness.

Almost all the respondents need psychological support and someone to run errand for them.

Relationship was established between the respondent's age, marital status, level of education and occupation and their knowledge of birth preparedness and complication readiness.

Relationship was established between the age, education level and occupation of the respondents and their practice of birth preparedness and complication readiness.

CHAPTER FIVE

DISCUSSION OF FINDINGS

This chapter present discussion of the major findings of the study, summary of finding implication of study to nursing, suggestion for further studies, conclusion and recommendation.

Pregnant women's knowledge about preparation for birth and its complications.

The findings showed that health talk on birth preparedness and complication readiness was one of the services provided to pregnant women during their antenatal visits. Although all the respondents agreed that a woman should prepare in advance for the birth of her child, most of them (67.3%) said that the appropriate time to start the preparation for child birth is the second trimester. This could be due to the fact that most pregnant women feel that it is best to wait till they are in the later stages of pregnancy before they can start getting prepared as they are almost sure the pregnancy is for real at that time. Those in early pregnancy feel they have ample time to get prepared for delivery hence they wait till the pregnancy is advanced before initiating any form of preparation.

Despite being availed of the information on birth preparedness and complication readiness findings from the study revealed poor knowledge about preparation for birth and its complication by the pregnant women. 76.6% of the pregnant women were not able to mention at least five items of the components of birth preparedness and four items of the components of complication readiness. Mostly mentioned among the components birth preparedness were buying of delivery requirement (94.3%) knowing the expected date of delivery (90.7%) and saving money (69.5%). Only a few (30.3%) knew that they should select a qualified birth attendant which is very vital in ensuring a safe delivery. More so mostly mentioned components of complication readiness were arrange access to emergency money (76.6%) and being able to identify the danger signs of pregnancy, labour and childbirth (69.5%). Very few pregnant women (7.4%) knew that they are supposed to arrange for blood which is vital components of complication readiness based on the fact that bleeding is one of the key danger signs

of pregnancy, labour and childbirth. Very few of the respondents (19.8%) and (7.4%) knew that they were supposed to arrange for transportation and emergency transportation as the case maybe. Adequate transportation arrangement is very necessary is preventing the second delivery in seeking help during obstetric complication which is delay in arriving at the appropriate facility. When a woman with obstetric complication arrives at the appropriate facility on time, there is high possibility of saving the lives of the woman and that of the baby. It was obvious that a greater number of the respondents lacked good knowledge of BPCR. The possible reason for poor knowledge of the components of BPCR might be that in-dept information was not passed across to the pregnant woman during health talks at the antenatal clinic. These findings were consistent with the work of Markos and Bogale (2014) and Mihret and Mesganaw (2006), which found that majority of the study participant were not knowledgeable about birth preparedness and complication readiness. Ekabua et al (2011) recorded high awareness of the concept of BPCR among respondent which is not consistent with the finding of this study.

Pregnant women's level of knowledge on danger signs during pregnancy labour and postpartum periods.

Findings from the study showed lack of knowledge of key danger signs of pregnancy, labour and childbirth as 87.6% of the respondents were not able to mention at least 3 key danger signs of pregnancy and labour and postpartum. 98.6%, 96.7% and 95.5% of the respondents mentioned vaginal bleeding as one of the major danger signs of pregnancy, labour and postpartum respectively. This maybe an indication of the awareness by the women that bleeding is the main and fastest cause of material mortality (Ozumba, 2008), A reasonable number of the respondents 74.9% and 70.2% mentioned pelvic or abdominal pain and swollen face and legs as the major danger signs of pregnancy. Other danger signs of pregnancy which includes not seeing clearly, reduced or fast fetal movement and regular contraction before 37 weeks were mentioned by as few as 29.4%, 20.0% and 19.8% of the respondents respectively. It is worrying that most of the respondents failed to mention not seeing

clearly which addition to swollen face is and legs are the danger signs which indicate severe pre-eclampsia and eclampsia. With the exception of mentioning severe vaginal bleeding as the major danger sign of labour and childbirth, only a few respondents 45.390 knew that prolonged labour over 12 hours, placenta not being delivered 37.9% and convulsion 32.5% are among the key danger signs. More so only 47.5% and 39.1% of the respondents knew that foul smelling vaginal discharge and high fever are among the key danger signs after postpartum.

The knowledge of danger signs is very important to the pregnant woman as this help her to recognize the signs and symptoms of obstetric complications and aids in her decision to seek care on time to avoid delay. This finding is similar to that of Miliret and Mesganaw (2006), where relatively small proportion of the respondents mentioned three key dangers signs of pregnancy, two key danger signs of labour and postpartum. This finding is also in contrary of Urassa, Pembe and Mganga (2012) where the obstetric danger signs most commonly mention were foul smelling vaginal discharge, baby stops moving prolonged labour over 12hours and convulsion. This showed that most of the respondents were no well informed about te danger signs of pregnancy, labour and postpartum. This low level of knowledge of key obstetric danger signs in developing countries may be indication that less attention might have been given to key danger signs while giving health education and advice during antenatal care.

Practice of birth preparedness and complication readiness by pregnant women.

Findings from this study revealed that despite the affirmation by all the respondents (100%) that they were practicing birth preparedness and 89.5% practicing complication readiness, only 14.8% practiced BPCR comprehensively. Most of the respondents 74.3% registered for antenatal care at 4-6 months and almost all 83.2% selected trained medical personnel (doctors, nurses and midwives) as their choice of birth attendant. The respondents who practiced BPCR included 74.8% of them that brought items for delivery, 57.5% that selected appropriate places for delivery, 74.9% and 72.0% that selected different

means of transportation and emergency transportation respectively, 60.4% of the respondents did not select a person to accompany them to the place of delivery when normal labour occurs while 52.8% did not arrange for a person to accompany them to the place of delivery when complication occurs. 67.8% and 64.5% of the respondents did not save money for normal deliver and for emergency fund in time of complication.

Almost all 92.6% of the respondents did not identify a compactable blood donor while 66.6% of the respondents made no arrangement for the person to look after the home while she was in the hospital. 66.4% did not make an alternative arrangement for a decision maker in the absence of key decision maker although 32.0% mentioned that they will make decision. In general, the level of practice of BPCR among the respondents was not encouraging as the majority 81.9% were not good in their practice . The finding that most of the respondents made arrangement for transport could be because of the study was conducted in urban /semi urban setting where different means of transportation are readily available. More so, selection of birth attendants and places of delivery by the respondents could be motivated by the availability of health care facilities managed by qualified birth attendants. Worrysome though is the findings that almost all the respondents did not identify a compactable blood donor, this might be due to the fact that most pregnant women do not want to anticipate undesirable events in pregnancy, labour and after delivery, hence they make no plans for emergencies, hoping and believing that everything will be normal.

Findings from this study is similar to that of Agarwal et al (2010), Urassa, Pembe and Mganga (2012), Muhammedawal and Mestin (2013), where majority of the respondents identified a place of delivery, identified means of transportation, selected a qualified birth attendant and purchases items needed for delivery. However, there is a slight contract in the finds of this study and Urassa, Pembe and

Mganga (2012), where majority of the respondents identified someone to care for the family and a person to make decisions in absence of key decision maker.

Social support needed by pregnant women to enable them prepare for birth and complications

Findings from the study showed that all the respondents needed at least two forms of social support to enable them prepare for childbirth and its complication. Almost all 95.7% needed psychological support while 69.7% and 59.5% needed someone to run errand and cash support respectively. Someone to take care of the family, when the women was away was needed by 21.5% while 10.5% needed someone to make urgent decision when the need arise. Only 1.2% of the respondents needed support from selling of assets. It is quite obvious that practically all the types of support needed by the respondents could be provided by the community with minimal contribution from healthcare provides. These findings brought to bear the need for community support in birth preparedness and complication readiness. This support could come from the woman's husband, other women, natal family members and husband's relatives as well as the community at large.

The findings from this study is consistent with Edmond et al (2011), where the most frequently mentioned support by the respondents were practical help with routine activities, information and advice, emotional support and maternal goods, information and advice were from mothers and sister in laws.

Relationship between social demographic characteristics of mothers and knowledge of birth preparedness and complication readiness.

The findings on the relationship between the socio-demographic characteristics of mothers and knowledge of birth preparedness and complication readiness revealed that age $P=0.000$, marital status $P=0.001$, level of educational $P=0.000$ and occupation $P=0.000$ of the mothers were significantly related with their knowledge on BPCR. Respondents within the age range of 30-39years showed evidence of good knowledge of BPCR than the respondents within the age range of 15-29years. This

could be because the older women are more matured and experienced than the younger ones and can ask questions about pregnancy related matters without feeling shy. More so married women are more likely to be share their experiences and make enquires on issues pertaining to pregnancy, labour and childbirth than their unmarried counterparts. The findings also shows that the higher the educational level of the respondents, the higher their knowledge on BPCR. Better educated women are more aware of health problems, know more about availability of health care services and use the information more effectively to maintain or achieve good health status. Respondents who are civil servants are more knowledgeable than the rest. Because of their regular income, they can afford to visit the health care facility for antenatal care and buy books on pregnancy related issues from which they can gain more knowledge. The findings from this study agrees with Ekabua et al (2011), Mihret & Mesganaw (2006), Muhammedawal & Mesfin (2013) and Kuganab- Lem, Dogudugu & Kanton (2014), where educational status, age, marital status, occupation, wealth index/incom were predictor of knowledge of concept of BPCR. But completely in contrast with Gurmesa, Mesganaw and Alemayehu (2014), where being urban residence and having health centre within two hours distance were among the higher level factors associated with knowledge of birth preparedness and complication readiness.

Relationship between socio-demographic characteristics of mothers and practice of birth preparedness and complication readiness.

Findings from the study shows that age $P=0.000$, level of educational $P=0.000$ and occupation $P=0.000$ are significantly related to the practice of birth preparedness and complication readiness among the respondents. This revealed that the higher the age and educational level the higher their practice of birth preparedness and complication readiness. Furthermore, the respondents that are civil servants practiced BPCR more than the respondents from other occupational groups The findings might be related to the fact that women who are educated and employed are more likely to be financially independent and also have better negotiating power and are able to make their own decision in matters

concerning their health than women who are uneducated and unemployed (Urassa, Pembe and Mgangen, 2012). More so educated women are more prepared for birth and complications because of their ability to better understand health messages and search for more information regarding health issues (Kabakyenga et al (2011). Likewise, age of the pregnant women could be a determining factor of the wealth of experience and knowledge as older women tend to be more informed on issues regarding pregnancy, labour and delivery than the younger ones.

The finding is in contrast to Mihret and Mesganaw (2006), where there was statistically significant association between parity and preparation for birth and its complication. The findings is somewhat similar to that of Muhammedawel and Mesfin (2013), Markos and Bogale (2014), Gurmesa, Mesganaw and Alemayehu (2014), which reported significant relationship between level of education, age, and occupation and practice of BPCR.

Summary of major findings

Demographic characteristics showed that the age of the respondents ranges from 15 to above 40 years, with majority within the age range of 20-24years (36.5%). Almost all the respondents were married (92.1%), of Christian religion (97.6%), the majority had tertiary education (51.3%) and were income earners (68.7%).

Obstetric characteristics showed that almost all the respondents had between 1-4 pregnancies (96.9%), a greater percentage had between 1-4 delivery 94.0%, and quite a number of them had 1-4 children alive (5.2%). Majority neither lost a child nor had a child that died within one month 90.7%. Majority knew their expected dates of delivery (95.5%).

All the respondents were availed of health talk during antenatal care, and were taught about how to prepare for childbirth and the complications that may arise during pregnancy, labour and childbirth. Although all of them agreed that a woman could prepare in advance for the birth of her child, majority lacked good knowledge of the components of BPCR.

All the respondents thought that woman can develop some problems at any point during her pregnancy, labour and delivery but the majority did not know up to 3 key danger signs pregnancy, labour and delivery (87.6%).

All the respondents affirmed that they prepared for normal delivery, (89.5%) affirmed that they prepared for complications while the majority were poor and fair in their practice BPCR (81.9%).

All the respondents needed some form of support to enable them prepared for childbirth and complication. There was a relationship between the respondent's age , marital status , level of education and occupation and their knowledge of BPCR, likewise between their age, educational level and occupation and their practice of BPCR.

Implication for nursing

Since it is the responsibility of nurses and midwives to give health talks to pregnant women during their antenatal visits, they should lay more emphasis on birth preparedness and complication readiness, which will go a long way in reducing the delays that hinder quality care thereby reducing the rate of maternal mortality and morbidity.

Summary

The study investigated birth preparation and complication readiness among pregnant women in selected health facilities in Enugu south. The study aimed to assess their knowledge and practice of BPCR, identify the form of social supports needed, and determine the relation between their socio-demographic characteristics and their knowledge and practice of BPCR. The populations comprised of pregnant women receiving antenatal care in public and private health care facilities. Multi stage sampling technique was used to select the samples from the health care facilities. Data collection was done using interviewer administered questionnaire and data generated was analyzed used SPSS version 17 for windows.

Suggestion for further studied

Further studies need to be done on the content of health talk given to pregnant women during their antenatal visits.

More studies are recommended in determine the effectiveness of antenatal care education being implemented.

Exploring the social support available in the community will help create the awareness of the need if not already existing.

There is need to study the knowledge and practice of BPCR of women in other local government areas in Enugu State.

Recommendations

Based on the findings of the study the following are recommended.

Health education and health promotion talks on the components of BPCR should be intensified by nurses and midwives.

Danger signs of pregnancy, labour and delivery and post partum should always be emphasized during health talk session.

Emphasis should be laid on the importance of having a compatible blood donor or compatible pints of blood at hand since bleeding is the major cause of maternal mortality.

Community based education about BPCR and empowerment of woman by expanding educational opportunities are important factors in enhancing both preparedness and hence reducing the effect of pregnancy related complication

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Questionnaire

Department of Nursing Sciences,
Faculty of Health Sciences and Technology,
College of Medicine,
University of Nigeria, Enugu Campus.

Dear Respondent,

I am a Masters Degree student from the Department of Nursing Sciences, College of Medicine, University of Nigeria, Enugu Campus. This interview guide is designed to obtain information from pregnant women in Enugu South L.G.A about "Birth Preparedness and Complication Readiness". I wish to assure you that all information provided will be used specifically for academic and research purposes and will be treated with utmost confidentiality.

Thanks for your cooperation

Obi H.N

PG/M.Sc/08/53350

SECTION A

Demographic Data:

You are to tick [] in the box as applicable to you

- (1) What is your age in years í í í í í í í í í í ..
- (2) What is your marital status?
(a) Married [] (b) Single [] (c) Widow []
(d) Separated [] (e) Divorced []
- (3) What is your religion?
(a) Christianity [] (b) Islam [] (c) Others specifyí í í í í í í í í í
- (4) What is your highest level of Education?
(a) None [] (b) Primary Education [] (c) Secondary Education []
(d) Tertiary Education [] (e) Others specifyí í í í í í í í í í í í ...
- (5) What is your Occupation?
(a) House wife [] (b) Civil servant [] (c) Trading []
(d) Self employ [] (e) Others specifyí í í í í í í í í í í í ...

SECTION B

Obstetric Data

- (1) Number of pregnancies í í í í í í í í í í í í
- (2) Number of deliveries í í í í í í í í í í í í í
- (3) Number of children alive/dead í í í í í í í í í í .
- (4) Any deaths within one month of birth í í í í í í ..
- (5) Your expected date of delivery is í í í í í í í í .
No idea í í í í í í í .

SECTION C

- (1) Is health talk one of the services provided in the antenatal clinic?
(a) Yes [] (b) No []
- (2) If yes, have you been taught about how to prepare for childbirth and the complications that may arise during pregnancy, labour and childbirth (a) Yes [] (b) No []
- (3) Do you think a woman should prepare in advance for the birth of her child?

- (a) Yes [] (b) No []
- (4) If yes, when should a woman start preparing for the birth of her child?
(a) 1 ó 3 months [] (b) 4 ó 6 months [] (c) 7 ó 9 months []
- (5) If you have been taught, what are you supposed to do in preparation for childbirth (Tick as many as you know)
(a) Know your expected date of delivery []
(b) Select a qualified birth attendant []
(c) Buy delivery requirements []
(d) Arrange for someone to accompany you to the place of delivery []
(e) Arrange for transportation []
(f) Save some money []
(g) Select a place for delivery []
- (6) What are you supposed to do in preparation for any complication that may arise? (Tick as many as you know)
(a) Be able to identify the danger signs of pregnancy, labour and childbirth when they occur []
(b) Plan for emergency transportation []
(c) Arrange for blood []
(d) Make a plan for decision making in case your husband is away []
(e) Arrange access to emergency funds/money []
- (7) Do you think that a woman can develop some problems at any point during her pregnancy till delivery? (a) Yes [] (b) []
- (8) What are the problems a woman may experience during pregnancy?
(Select as many as you know)
(a) Headache []
(b) High fever []
(c) Bleeding or gush of fluid from the vagina []
(d) Not seeing clearly []
(e) Swollen face and leg []
(f) Unusual weight gain []

(e) State the amount of money saved to date for your delivery. í í í í í í í í í í í í ..

(f) Name your selected place for delivery. í í í í í í í í í í í í í í í í í í ..

(14) Are you ready or is getting ready for any complication that may arise in the course of your pregnancy, labour or delivery?

(a) Yes [] (b) No []

(16) If òyesò what are the things you have prepared in order to take care of any complication that may arise? (Select as many as you know)

(a) Who is your identified compactable blood donor?

(b) Which is your arranged means of emergency transportation? í í í í í í í

(c) State amount set aside for some emergency fund. í í í í í í í í í í í í í í í í ..

(d) Name the arranged person to accompany you to the place of delivery. í í í í í í í .

(e) Who will look after your home while in the hospital? í í í í í í í í í í í í í ..

(f) Who will make decision in the absence of key decision maker? í í í í í í í í í ..

(17) What form of support do you need to enable you prepare for childbirth and complications.

(a) Cash. []

(b) Borrow from people. []

(c) Selling of assets. []

(d) Psychological support. []

(e) Someone to run errands for you. []

(f) Someone to take care of your family when you are away. []

(g) Support to make an urgent decision when the need arises. []

(h) Others í ..

Department of Nursing Sciences
Faculty of Health Sciences &
Technology
University of Nigeria,
Enugu Campus
29th July, 2015

The Hon. Commissioner

Enugu State Ministry of Health
Enugu

Attention: The Chairman
Ethical Committee
Enugu State Ministry of Health
Enugu

Sir,

REQUEST FOR ETHICAL CLEARANCE

I am a post graduate student of the Department of Nursing Sciences, University of Nigeria Enugu Campus.

I humbly apply for Ethical Clearance to enable me carry out a study on the **Birth Preparedness And Complication Readiness Among Pregnant Women In Selected Health Facilities In Enugu South Local Government Area, Enugu State**

My study population is pregnant women attending antenatal clinic in hospitals in the state and I intend to collect data from them.

The study is a prerequisite for the award of M.Sc Nursing Sciences by the University. My Proposal is hereby attached.

Yours faithfully

OBI HOPE NKIRU