

**ASSESSING KNOWLEDGE, PRACTICE AND FACTORS
INFLUENCING BIRTH PREPAREDNESS AND
COMPLICATION READINESS AMONG COUPLES IN
SELECTED RURAL COMMUNITIES IN OJI RIVER LOCAL
GOVERNMENT AREA OF ENUGU STATE**

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DEDICATION

This work is dedicated to all Nurses who go extra mile to ensure quality care and evidenced based Nursing care delivery.

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ABSTRACT

This study was carried out to assess knowledge, practice and factors influencing birth preparedness and complication readiness among couples in selected rural communities in Oji River. The objectives of the study were to determine knowledge of birth preparedness and complication readiness among couples in the communities studied, couples' practice of birth preparedness and complication readiness, identify factors that hinder couples' practices of birth preparedness and complication readiness and establish the relationship between couples' socio-economic status and their practice of birth preparedness and complication readiness. A cross-sectional descriptive survey research design was used for the study in selected seven communities of Oji River L.G.A. Snowball non probability sampling technique was used to select subjects for the study. A sample of 470 was determined using the formula by Surish & Chandrashekera. Descriptive and inferential statistics were used to analyze data at 0.05 level of significance. Results were presented in tables, frequencies, means and standard deviations. Findings revealed that majority of the couples 120 (78.7%) were knowledgeable on birth preparedness and complication readiness, knowledge did not translate to practice as less than 20% actually practiced the acceptable level of birth preparedness. Financial constraint was the significant factor that hindered couples' practice of birth preparedness and complication readiness. All the socio-economic variables examined were associated with couples' practice of birth preparedness and complication readiness. There was significant difference ($P < 0.05$) in the average monthly income and educational qualification of the couples and their practice of birth preparedness and complication readiness. In conclusion, although most of the couples had good knowledge of birth preparedness and complication readiness, knowledge still did not translate to practice as few of them actually practiced the acceptable level of birth preparedness and complication readiness. Based on the findings, the recommendations that there is a need for slight shift in focus of maternal and child care projects of governments and need to improve transportation facilities suitable for pregnant women at rural communities which will improve outcomes in emergencies were made.

CHAPTER ONE

INTRODUCTION

Background to the Study

It is true that birth of baby precedes celebration but it equally poses source of concern as pregnancy and childbirth is sometimes a perilous journey especially in the developing countries, where the risk of a woman dying from pregnancy and related complications is almost 40 times greater than that of her counterparts in developed countries (Benson & Yinger, 2002). Maternal mortality remains a public health challenge world wide, and the global maternal mortality ratio of 525 per 100,000 live births annually is still unacceptably high (Hogan, 2010). A disproportionately high burden of these maternal deaths is borne by developing countries including Nigeria, with a maternal mortality ratio of 5006 1,000 per 100,000 live births (World Bank, 2013). These deaths arise from pregnancy, childbirth or postpartum complications. According to WHO (2009), maternal deaths are thought to occur in developing countries due to delay in deciding to seek appropriate care, delay in reaching an appropriate health facility, and delay in receiving adequate emergency care once at a facility. These delays may be reduced if pregnant women and their families are prepared for birth and its complications. Birth preparedness and complication readiness strategy is therefore, very relevant in this regard. This strategy can reduce the number of women dying from complications due to such delays by making a birth plan that constitutes birth-preparedness and complication-readiness measures for pregnant women, their spouses and their families (McPherson, Khadka, Moore & Sharma, 2006).

Birth-preparedness and complication-readiness is a comprehensive package aimed at promoting timely access to skilled maternal and neonatal services. It is a safe motherhood strategy whose objective is to promote the timely use of skilled maternal and neonatal care during childbirth or obstetric emergencies by reducing delays at the first, second and third levels (Maternal and Neonatal Health Program, 2007). It entails making plans prior to birth to ensure that a pregnant woman is prepared for normal birth and complications. The birth-preparedness package promotes active preparation and decision-making for delivery by pregnant women and their families. (McPherson, et al, 2006). Decision are made and documented on such issues as desired place for birth, the preferred skilled birth attendant, items required for birth, birth companion, getting a compatible blood donor and arranging in advance for transport. This stems from the fact that every pregnant woman faces risk of sudden and unpredictable life threatening complications that could end in death or injury to herself or to her baby (JHPIEGO, 2006).

Other elements of birth preparedness include knowledge of expected date of delivery, signs of labour, dangers signs, HIV testing, mobilising resources to pay for services, arranging for someone to take care of the family during delivery. Importance of post-natal care, importance of exclusive breast feeding and contraception (Maternal and Neonatal Health Program 2003). In addition, a potential blood donor and a decision maker (in case of emergencies) need to be identified (Kaye, Mirembe, Azigy, Namuelema, 2003).

Approximately 15% of pregnant women develop life-threatening complications hence need for emergency obstetric care. These complications are unpredictable and may

progress rapidly to a fatal outcome (Rogo & Aloo, 2011). Knowledge of danger signs of obstetric emergencies and appreciation of the need for rapid and appropriate response when emergencies occur may reduce delay in decision making and in reaching health facilities. Such signs in pregnancy are vaginal bleeding, severe headache, severe vomiting, swelling of hands and face, difficulty in breathing, fits, fever, reduction or absent fetal movement and drainage of liquor (WHO, 2009). Therefore, this package is a very important strategy in developing countries, where obstetric services are poor. Birth plan should be discussed on the first clinic visit, reviewed in subsequent visits and finalized by 32 weeks (Barbara & Gomez, 2007).

One of the key roles of antenatal care is to provide health education on danger signs of pregnancy and delivery, preparation of a birth plan and to encourage delivery under a skilled attendant. WHO (2009) now recommends that pregnant women should receive focused antenatal care in which birth preparedness and complication readiness is a key component (WHO, 2009), Ministry of Health, Kenya, (2012). In order to address this disturbing trend, the International Conference on Population and Development (ICPD) urged that special efforts should be made to emphasise men's shared responsibility and promote their active involvement in maternity care (JHIPIEGO, 2006). In spite of this, pregnancy and childbirth continue to be regarded as exclusively women's affairs in most African countries, especially in the rural settings (Mullick, Kunene, & Wanjiru, 2005).

Statement of the Problem

In sub-Saharan Africa, pregnancy and childbirth continues to be viewed as solely women's issues (JHIPIEGO, 2006). A male companion at antenatal care is rare and in

many rural communities, it is unthinkable to find male companions accompany a woman to the labour room during delivery (Mullick, Kunene & Wanjiru, 2005; Babalola & Fatusi, 2009). This posture of men towards BP/CR depicts lack of knowledge of their role in pregnancy and child birth. Yet, men have social and economic power, especially in Africa including Enugu State. They also, have tremendous control over their partners, so they decide the timing and conditions of sexual relations, family size and whether their spouse will utilize available health care services (Iliyasu, 2010). This situation makes male partner involvement critical if improvement in maternal health and reduction of maternal morbidity and mortality is to be realized. His engagement in maternity care seems to be lacking in developing countries especially rural communities. Male involvements will enable men to support their spouses to utilize emergency obstetric services early and the couple would adequately prepare for birth and get themselves ready for complications. This does not seem to be the case in developing countries including Nigeria and Enugu state. Birth preparedness and complication readiness is an issue that concerns both male and female (couples) for better outcome of pregnancy and delivery, but it seems to be viewed as women's responsibility. This poses a big problem. There is therefore the need to assess the knowledge, practice and factors that influence birth preparedness and complication readiness among couples in selected rural communities in Enugu State since there are documented evidence that maternal mortality is higher in rural communities than in the urban settings (WHO, 2014).

Purpose of the Study

The purpose of this study is to assess the knowledge, practice and factors that influence birth preparedness and complication readiness among couples in selected rural communities in Oji River LGA, Enugu State.

The specific objectives of the study are to :-

1. determine knowledge of birth preparedness and complication readiness among couples in the communities under study.
2. determine couples practice of birth preparedness and complication readiness.
3. Identify factors that hinder the practice of birth preparedness and complication readiness.
4. establish the relationship between couples socio-economic status and their practice of birth preparedness and complication readiness.

Research Questions

1. What is the knowledge of couples about birth preparedness and complication readiness?
2. What is the couples practice of birth preparedness and complication readiness?
3. What are the factors that hinder couples practice of birth preparedness and complication readiness?.
4. What is the relationship between couples socio-economic status and their practice of birth preparedness and complication readiness?

Hypothesis

The alternate hypothesis to guide the study is:-

1. There is association between couples' socio-economic status and their practice of birth preparedness and complication readiness.

Significance of the Study

This study has relevance to the general public, nurse practitioners, nurse administrators and nurse educators. It will be significant to the general public as findings from this study will show the need for couples and the general public to be prepared for birth and any complications that may arise, thereby reducing the risk/incidences of maternal and infant mortality. Findings from the study will equip the couples with invaluable information on birth preparedness and complication readiness, which will go a long way, if applied to ensure better and safer maternal health for the mothers.

This study will also be relevant to the nurse practitioners as they will be equipped with the findings from this study, which will enable them adequately prepare the couples for birth and possibly avoid any complication that may arise. Findings from this study can be utilized by nurse administrators who will ensure that the necessary environments are provided that will enable the nurse oversee the adoption of birth preparedness and complication readiness. This study will also provide evidence based information with respect to birth preparedness and complication readiness in rural communities which is an imperative for improving health education initiatives in rural Nigeria including Oji River L.G.A of Enugu State.

Scope of Study:

This study is delimited to couples living in seven selected communities in Oji River LGA. It will focus particularly on the knowledge, practice and factors that influence couples towards birth preparation and complication readiness activities and the relationship that exists between the couple's knowledge and their practice of birth preparedness and complication readiness as well as the relationship that exist between couple's socio-economic status and their practice of birth preparedness and complication readiness.

Operational Definition of Terms

For the purpose of this study, the following terms are defined operationally.

Birth Preparedness and Complication Readiness: This is a comprehensive strategy that focuses on promoting the timely utilization of skilled maternal and neonatal health care and includes attending antenatal care at least four times during pregnancy, identifying a skilled provider and making a plan for reaching the facility during labour, setting aside personal funds to cover the costs of traveling to and delivering with a skilled provider and any required supplies, recognizing signs of complications, knowing what community resources (emergency transport, funds, communications, etc), are available in case of emergencies and having a plan for emergencies, obstetric care and referral system for Emergency Obstetric Case.

Couple: Those who are legally married or co-habiting with children.

Knowledge: The information and understanding gained through education.

Practice: Action taken by couples towards BP/CR.

CHAPTER TWO

LITERATURE REVIEW

This chapter presents the review of related academic materials from books, journals, published and unpublished articles sourced from the University library and the internet. The literature review has been organized under conceptual, theoretical and empirical reviews. Summary of the literature is also highlighted.

Conceptual Review

Concept of BP/CR

Women and newborns need timely access to skilled care during pregnancy, childbirth, and the post-partum/newborn period. However, too often, their access to care is impeded by delays – delays in deciding to seek care, delays in reaching care, and delays in receiving care (WHO, 2009). These delays have many causes, including logistic and financial concerns, unsupportive policies, and gaps in services, as well as inadequate community and family awareness and knowledge about maternal and newborn health issues.

These delays include:

Delays in deciding to seek care may be caused by failure to recognize signs of complications, failure to perceive the severity of illness, cost considerations, previous negative experiences with the health care system and transportation difficulties.

Delays in reaching care may be created by the distance from a woman's home to a health facility or provider, the condition of roads and a lack of emergency transportation.

Delays in receiving care may result from unprofessional attitudes of providers, shortages of supplies and basic equipment, a lack of health care personnel, and poor skills of health care providers. The causes of these delays are common and predictable. However, in order to address them, women and families and the communities, providers, and health facilities that surround them must be prepared in advance and ready for rapid emergency action.

Birth preparedness and Complication Readiness (BP/CR)

BP/CR is the process of planning for normal birth and anticipating the actions needed in case of an emergency (Department of Community Medicine, 2009). Responsibility for BP/CR must be shared among all safe motherhood stakeholders – policy makers, facility managers, providers, communities, families and women- because a coordinated effort is needed to reduce the delays that contribute to maternal and new born deaths. Each stakeholder has an important role to play – from creating appropriate policies to strengthening facilities and providers to implementing effective community systems to adopting informed practices at home.

Together, stakeholders can plan for the care that women and newborns need during pregnancy, childbirth and the post-partum/newborn period, prepare to take action in emergencies, and build an enabling environment for maternal and newborn survival.

Birth preparedness can do much to improve maternal health outcomes. Birth preparedness helps ensure that women can reach professional delivery care when labour begins. In addition, birth preparedness can help reduce the delays that occur when women experience obstetric complications, such as recognizing the complication and

deciding to seek care, reaching a facility where skilled care is available and receiving care from qualified providers at the facility (Family Care International, FCI, 2013).

According to The Skilled Initiative (FCI, 2013), the key elements of birth preparedness comprise attending antenatal care at least four times during pregnancy; identify a skilled provider and making a plan for reaching the facility during labour, setting aside personal funds to cover the costs of traveling to and delivering with a skilled provider and any required supplies; recognizing signs of complications; knowing what community resources-emergency transport, funds, communications, etc; are available in case of emergencies; having a plan for emergencies; i.e. knowing what transport can be used to get to the hospital, setting aside funds; identifying person(s) to accompany to the hospital and/or to stay at home with family; and identifying a blood donor.

Since there is a probability of life-threatening complications occurring during the early postpartum period, birth preparedness also includes planning to access postpartum care during the first week after delivery and at six weeks after delivery.

Birth preparedness involves not only the pregnant woman, but also her family, community and available health staff. The support and involvement of these persons can be critical in ensuring that a woman can adequately prepare for delivery and carry out a birth plan.

Male-Involvement in BP/CR

Men play key role in decisions integral to maternal and newborn health in areas such as family planning, delaying first pregnancy, adequate birth spacing, reducing unplanned

pregnancies and limiting the total number of pregnancies. These activities positively impact maternal health and reduce maternal deaths (Singh, Darroch, Vlassoff, & Nadeau, 2003). Men are often responsible for decision-making about family planning and use of contraceptives (Yue, O'Donnell &, 2010) and program experience suggests that male involvement can be a more effective strategy than including women alone (Fayemi. et. al., 2011). Men also play key role in determining women's access to critical health services, including antenatal and intrapartum care (Gross, Alba & Grass; 2012, Abose, Woldie & Ololo, 2010) through such mechanisms as determining the availability of transport for women to reach a clinic (Waiswa, 2008) and decisions that affect whether a woman can be successfully referred to a higher-level facility if required (Pember, Urassa, Darj, Carlstedt & Olsson, 2008). However, in order to make informed decisions, men need to know why ANC and skilled birth attendance are important, the risks associated with pregnancy and childbirth, how to prepare for childbirth and how to recognise signs of complications. Involving men in clinical services may be one way to ensure men receive this information. Pregnancy and the birth of a child are significant events for men and women and are likely to be times when a man is open to new information about his role as father and husband (UNICEF, 2008; Natoli, 2012; Natoli, 2012). Non-intervention studies tend to suggest that men who participate in antenatal education provide information or other support to their pregnant wives and demand facility-based childbirth (Chattopadhyay, 2012; Story, 2012; Tweheyo, 2010).

During pregnancy and the breastfeeding period, there is also a particular need to involve both men and women in efforts to prevent STIs and HIV. This is because physiological changes during pregnancy and the postpartum period show that women are more

susceptible to HIV and other infections. Traditional beliefs, concerns about whether sex is safe during pregnancy, and health workers conveying incorrect information, can result in long periods of marital sexual abstinence during pregnancy and postpartum (Toole, et. al., 2006). During this time, men may be more likely to seek sex from other partners and may not use a condom (Natoli, et. al., 2012; Holmes and Otto, 2009). If an expectant father acquires an STI such as syphilis during this time, he is in danger of passing an STI to his pregnant or breastfeeding partner, which can seriously affect the health of both mother and baby (Kruger and Malleyeok, 2010). In the first weeks after infection with HIV, viral load in the blood is very high. If a man acquires HIV during extramarital sex, he will be highly infectious to his pregnant or breastfeeding partner (Toole, et. al., 2006). A new HIV infection during pregnancy or breastfeeding will further result in a high maternal viral load, which greatly increases the risk of mother to child transmission of HIV (Humphrey, et. al., 2010). To protect pregnant and breastfeeding women and their babies from HIV infection it is therefore imperative that men have adequate knowledge and skills (Holmes, 2001). This vital information is clearly stated in the Birth preparedness and Complication readiness package.

Men also have vital role to play in decisions relating to breastfeeding. Studies in high-income countries have revealed that partner support is an important factor in successful breastfeeding (Pisacane, 2005). Although most breastfeeding promotion efforts in low-income countries are aimed at women, many women do not make choices about infant feeding in isolation and experience significant influences and pressures from family members, including male partners, parents, and parents-in-law (Prasanna, 2011). There is strong evidence that exclusive or predominant breastfeeding for the first six months of

life significantly improves child survival (Darmstadt, et. al., 2005). Yet, many men have not been exposed to breastfeeding messages and have insufficient knowledge to positively influence infant feeding decisions (Aniebue, et. al, 2010).

Similarly, there is a clear rationale for including men in education on the importance of immunization. In focus group discussions and key informant interviews around child immunization held in Kampala, Uganda, researchers found that support from male partners was a major factor influencing women's decision to immunize children or not (Babirye, 2011). While men had greater power than women regarding decisions around immunization, participants reported that men rarely attended immunization clinics, due to time and employment constraints and feeling "out of place" thereby missing opportunities to receive health promotion messages. Engaging men may further positively influence timely care seeking behaviour for childhood illness. Studies in diverse settings show that fathers play an important role in decision-making around care seeking behaviour for children (Prasanna, 2011).

In addition, men may also have benefits for maternal mental health. A recent review (Fisher, et. al, 2012) found that prenatal mental disorders are common in low and lower middle-income countries. These disorders affect maternal wellbeing and the health and development of the baby. The authors noted that, when other factors were controlled, higher rates of common prenatal mental disorders were observed among women who experienced difficulties in the intimate partner relationship, including having a partner who was unsupportive and uninvolved.

Including men in maternal and child health services may have further benefits for men's own health. For women, contact with health centres during pregnancy and child rearing provides opportunity to connect with a range of services, including treatment for malaria, anemia and HIV infection. In many settings, however, men have very little contact with the formal health system, and even less engagement with preventive health services. Men more often seek curative services, and often attend a traditional healer or a pharmacy over a health centre (Shepherd, 2004). For men, as for women, pregnancy provides an opportunity to link men to the health system, to detect and treat conditions such as STIs and other infections, and to provide relevant health messages. All these are available in the Birth Preparedness and Complication Readiness Package.

Finally, research indicates that many men and women would like to see greater male involvement in maternal and child health services (Mullick, et. al, 2005; Natoli, 2012). In a qualitative study of the sexual practices of expectant fathers in Laos, focus group discussions with pregnant women reveal that although many men, particularly those from urban areas, accompany their pregnant partner to the clinic and women would like their husbands to be included in the consultation, they are rarely included. One expectant father in a men-only focus group discussion noted that Some men would like to go in with their life but instead end up asking them "what did the doctor say" oh yes, you should do that. (Natoli. et. al, 2012). Similarly, in a qualitative study of greater male involvement in maternal health in East New Britain, Papua New Guinea, expectant fathers showed concern for their wife's health and wellbeing and wanted to know what information their wives received when they attend ANC (Natoli, 2012). Men wanted to know how much work their pregnant wife can do, at what stage in the pregnancy she

should stop working, how to keep her healthy, when she should go to the clinic and whether it is safe to have sex. They also asked how to know when the baby would be born, why some babies are born early or are stillborn, and how to feed and care for the baby. Several studies have reported men's interest in learning more about how to support the health of their family and their frustration regarding lack of information (Natoli, 2012; Natoli, et. al, 2012; Engebresten, et. al, 2010). It is also clear that many men care deeply about the welfare of their families and respond positively to attempts to engage with them (Natoli, et. al, 2012).

Couple's Birth Preparedness Information Needs

Often, it is not the pregnant woman herself who decides on the place for childbirth, but rather her family members. Thus, BP/CR initiatives must target not only the woman but also those in her family circle most likely to make that decision. In societies in general, the husband or partner is the most influential decision-maker and, even if others offer their opinions, he will be the one to make the final decision. Thus, the husband/partner is the key determinant in the birth preparedness and complication readiness (Natoli, et. al, 2012).

In preparing for birth and being ready for any complication that may arise, it is expected of the couple to know the following:

Expected due date: the couple needs to know expected due date and that it is only an approximate or estimated date & labour may start two weeks before or after the expected due date.

Planning and preparation are life-saving: the couple needs to know that many obstetric complications are unpredictable and can arise suddenly and without warning. Planning or preparing for delivery does not invite such events to happen. Although it is difficult to plan for an event that will happen at an unknown date, planning and preparation can save a woman's life.

Obstetric risks and appropriate facility for delivery: If the woman is at higher risk, the couple is expected to understand why it is crucial for the woman to deliver at a health facility and when she should go (e.g. before her expected due date? When labour starts?) Which facility? Is there a maternity waiting home where she can stay near the facility before delivery? Even if the woman does not have serious risk factors, there is still need for the couple to be able to recognise signs of serious complications (Natoli, et. al, 2012). They also need to know that a health facility is the safest place to deliver. They need to know which facility she should go to for delivery and whether services are available at night.

Basic supplies needed: The couple needs to know basic items that should be had ready for delivery, how much they may cost, and where they can be obtained. It is recommended that the couple have dedicated savings to buy necessary items for the baby once it is born.

Facility charges for normal delivery and costs of early postpartum care: The couple needs to know what charges to expect for a normal delivery. They also need to know the costs associated with a caesarean section, especially if it is likely to occur given her obstetric history.

Available transport options and associated costs: The couple needs to know available options for reaching a facility where she can deliver her baby at night or during the day. They need to know the approximate travel time to the facility as well as the costs involved.

Total anticipated expenses: The couple needs to know the sum total that supplies, service delivery charges and transport to the facility are likely to cost so that sufficient funds can be set aside.

Possible sources of funds: The couple needs to realistically assess whether they will be able to put aside the required funds or brainstorm other possible sources of support – relatives, neighbours, friends, etc. They should also know of/explore other community-level resources, such as emergency loan funds, women's groups, merry-go-rounds, etc if they are in existence.

Whom to involve in birth preparations: The couple needs to know that preparing for delivery is a family responsibility and that family dialogue and discussion are essential for obtaining support and the necessary contributions. They need to assess the roles of various family members in care-related decision-making and involve these key decision-makers in discussing the issue, as well as identify individuals who can be called upon to support her during pregnancy delivery and the early postpartum period.

When to start birth preparations: Whether she is in her 2nd or her 8th month of pregnancy. The woman needs to be motivated and empowered to start preparing for skilled care during delivery and the early postpartum period as soon as possible. Given all

the preparations that need to be made, the couple needs to map out a realistic timeframe for making the preparations needed (WHO, 2009).

Key Implications for Birth Preparedness and Complication Readiness

Communities perceive pregnancy and childbirth as risky-a perception that may help motivate them to prepare for delivery. Aspects of formal antenatal care services that are valued by community members, like learning due date, knowing foetal presentation and detection of complication can serve as a starting point for birth preparedness counseling (Natoli, et. al, 2012). There are no rigid taboos that restrict family discussion or dialogue about pregnancy or delivery, and while husbands and mothers-in-law exert a strong influence over these decisions, the woman herself is usually involved or consulted. Cultural norms and beliefs support certain types of preparation, such as saving funds, however, making purchase for the baby is perceived as inadvisable and risky given that the outcome of the pregnancy cannot be known and such preparations may invite misfortune. Although, community beliefs and norms generally support putting aside money for delivery, in practice families find it difficult to save funds due to poverty as well as beliefs regarding the impossibility of planning for an event that is unpredictable (Natoli, et. al, 2012)..

When complications arise, considerable and life-threatening delays occur as families try to mobilize funds and reach a facility where care is available. Among women who experienced a complication, many first sought care at inappropriate facilities where no treatment was available; indicating that better advice and counseling is needed to ensure that families can go directly to an appropriate facility. Use of postpartum care in the first

two weeks after delivery is low and generally perceived as unnecessary if the woman is not experiencing problem.

Knowledge of Danger Signs

Every pregnancy faces risks, more so for women in low-income countries (Steven, 2010). Women individually, their partners and the communities need to be educated on danger signs so that they can seek appropriate care from skilled providers in time. Studies in low-income countries show that knowledge of obstetric danger signs especially during pregnancy and delivery among women is deficient (Pembe, et. al., 2009; Hsan & Nisar, 2002). Studies further reported that prolonged labour as a danger sign was reported by the least number of women respondents (Pembe, et. al., 2009; Anya et. al, 2008; Kumbani & McLnerney, 2006). Knowledge of a danger sign would help the women, their partners, families and communities to seek appropriate care early. Some of the danger signs include severe vaginal bleeding, swollen hands or faces and blurred vision during pregnancy. Prolonged labour (>12 hours), convulsions, retained placenta and severe vaginal bleeding during labour and childbirth are equally danger signs. Postpartum danger signs include high fever, foul smelling vaginal discharge and severe vaginal bleeding while convulsions spasms/rigidity, difficult breathing; very small baby and lethargy/unconsciousness are the danger signs that can manifest in the newborn (JHPIEGO, 2006).

Theoretical Review

Thaddeus and Maine Three Delays Model

The Thaddeus and Maine (1994) model have provided the safe motherhood community with an explanatory model of maternal mortality that identifies delays in seeking, reaching and obtaining care as the key factors leading to maternal death. This explanatory model, known as the Three Delays Model, categorizes delays into three types: delays in seeking care, delays in reaching care and delays in receiving adequate care once at the point of service (Fig. 1). It explains the chain of actors responsible for the high maternal morbidity and mortality in low-income countries. The first delay is by the individual, the family or both in making a decision to seek care (delay I). This delay is due to socio-economic/or cultural factors, which include status, decision making, financial and opportunity costs. The second delay is failure to reach the health care facility due to difficult physical accessibility, cost of transportation and condition of roads (delay II). The third delay is the time taken to receive appropriate and adequate care once at the health facility due to shortage of resources or competence of personnel (delay III). However, Thaddeus and Maine conceded in their review paper that there were large gaps in the literature concerning factors affecting utilization of maternal health care and made a recommendation that more field-based research be undertaken to elaborate on factors leading to delay in different settings.

Gabrysch and Campbell (2009), in a review paper, have used the three delays model to group the determinants of delivery service use into socio-cultural, perceived need, economic and physical accessibility. Accordingly, studies on women's autonomy, which

is a socio-cultural factor and health knowledge which is in the perceived need group, have produced mixed results in as far as skilled delivery is concerned. Furthermore, there are variations across populations both within countries and across countries on use of maternal health care due to contextual factors, which are related to funding and the organization of health services (Say and Raine, 2007).

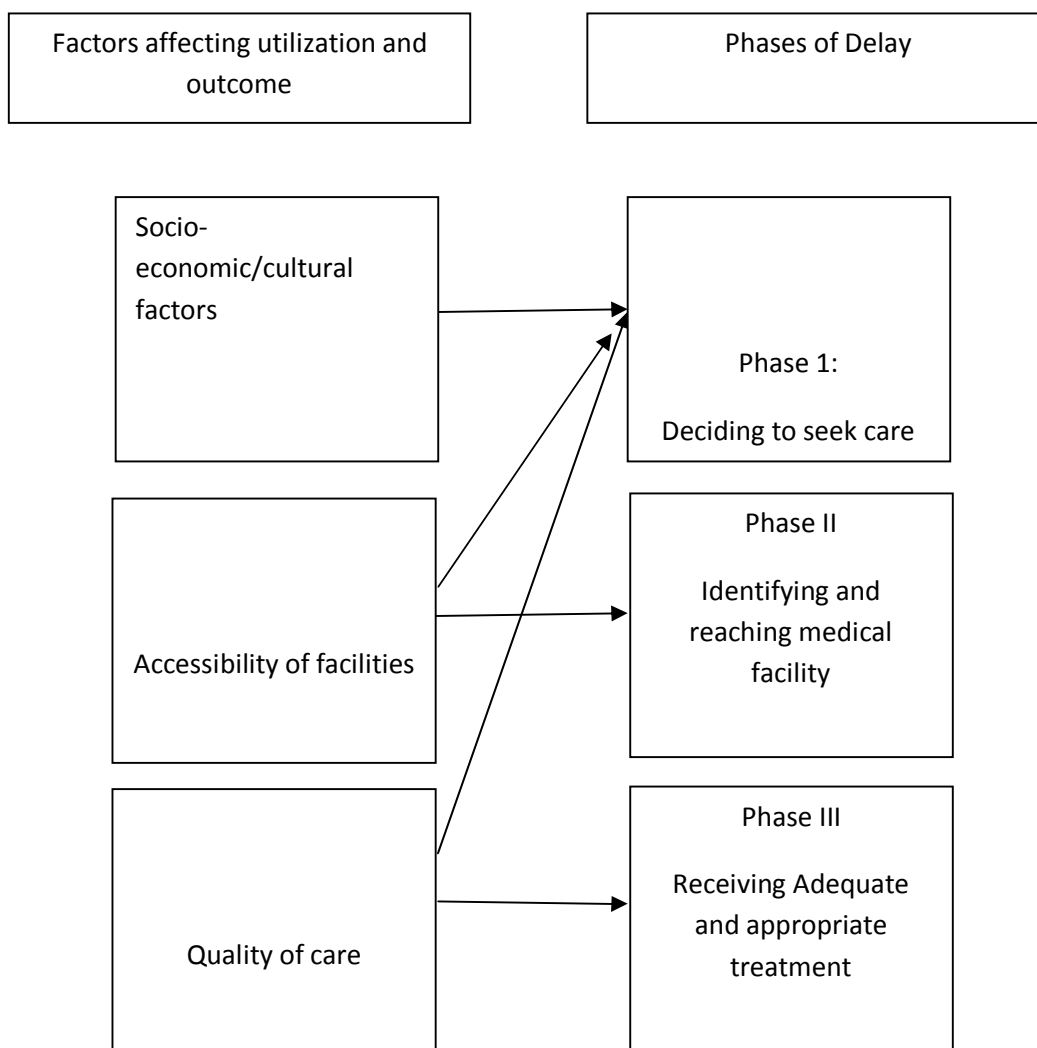


Fig. I: Thaddeus and Maine (1994) Three Delay Models

Source: JHPIEGO/Maternal and Neonatal Health (2004). Monitoring Birth Preparedness and Complication Readiness: Tools and Indicators for Maternal and Newborn Health. USA: JHPIEGO

Community Empowerment

A community is characterised by the following elements: membership, mutual influence, share needs and influence, and share emotional connection, while empowerment refers to the ability of people to gain understanding and control over personal, social, economic and political forces in order to take action to improve their life situations. Community empowerment enables individuals and organizations within to take collective actions that are aimed at improving their conditions. Communities, which are empowered, are able to put in place mechanisms such as loan schemes to assist their members in times of need. It has been noted that in order to improve maternal survival in low-income countries, there is need to scale up community-based interventions (Bhutta, et. al, 2008; Bhutta and Lassi, 2010). There is also need to link families and facilities for care at birth (Lee et. al, 2009).

Health System

According to Osrin and Prost (2010) a woman experiencing pregnancy in a low-income country has a sort of health ecosystem. This health system includes her family, friends, the non-governmental sector and the wider community (see figure 2). Ordinarily the woman would be able to attend antenatal, natal and postnatal care at a public or non-governmental institution. However, in most places the public facilities are either under resourced or far away (Stanton, 2004; Anson, 2004). Most women end up delivering at home with the assistance of family members, traditional birth attendants or in some instances having solitary delivery. In the recent years the private health care, informal and formal, has come in to offer maternal health services but only to those who can afford the costs. A woman who gets a complication of obstructed labour, more so at home, has to be transported to a facility which offers comprehensive emergency obstetric

care (blood transfusion and caesarean sections) which in most cases is located a distance from rural areas. Areas located long distances from health care facilities also have associated factors of remoteness such as poor road infrastructure, poor communication, poor incomes, and limited access to information and strong adherence to traditional values (Hounton, et. al, 2008).

A notionatal but not necessarily functional The public sector hierarchy

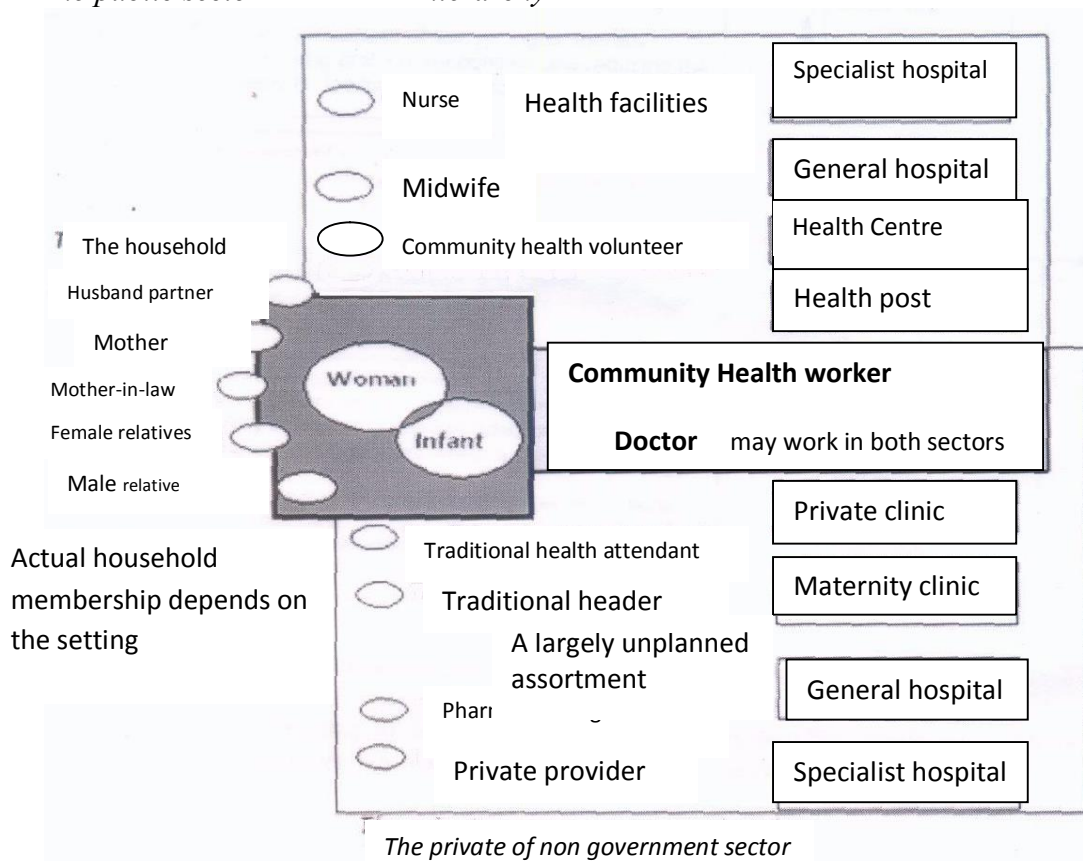


Fig. 2: Potential sources of assistance and health care for mothers and newborn infant in low-income setting.
Source: Osrin D, Prost A (2010) Perinatal interventions and survival in resource-poor settings, which work, which don't, which have the jury out? Arch Dis Child95: 1039 - 1046

Conceptual Framework

Figure 3 below illustrates the role of BP/CR in improving the use and effectiveness of key maternal and neonatal services through reducing delays. It is important to emphasize that this framework is theoretical rather than evidence-based. The pathways laid out in the diagram have not yet been tested using rigorous scientific studies. For simplicity, this explanation of the framework will focus on the use of a skilled provider at birth, since such a high proportion of life-threatening complications for both mother and newborn arise during this period. However, the framework applies equally to use of other routine and emergency services during the antenatal and postpartum periods, which also contribute to maternal and newborn survival.

According to the framework in figure 2, BP/CR reduces delays in deciding to seek care in two ways. First, birth preparedness (in a programming approach focused on skilled care during childbirth) motivates people to plan to have a skilled provider at every birth. If women and families make the decision to seek care before the onset of labor, and they successfully follow through with this plan, the woman will reach care *before* developing any potential complications during childbirth, thus avoiding the first two delays completely. Second, complication readiness raises awareness of danger signs among women, families and communities, thereby improving problem recognition and reducing the delay in deciding to seek care.

BP/CR encourages women, households and communities to make arrangements such as identifying or establishing available transport, setting aside money to pay for service fees and transport, and identifying a blood donor in order to facilitate swift decision-making

and reduce delays in reaching care once a problem arises. In sum, at the demand of BP/CR promotes the use of a skilled provider at birth through increasing demand and improving access.

BP/CR also reduces delays in receiving appropriate care. It calls on providers and facilities to be prepared to attend births and ready to treat complications. To have birth preparedness and complication readiness at the provider level, nurses, midwives and doctors must have the knowledge and skills necessary to treat or stabilize and refer women with complications, and they must employ sound normal birth practices that reduce the likelihood of preventable complications.

The BP/CR Matrix

The Birth Preparedness and Complication Readiness Matrix (see appendix 2) delineates the roles of policy makers, facility managers, providers, communities, families, and women in ensuring that women and newborns receive appropriate, effective and timely care (WHO, 2009) . It outlines plans and actions that can be implemented by each group of stakeholders to build an enabling environment for normal and emergency care.

The BP/CR Matrix can be used in a variety of ways to introduce and reinforce the concept of BP/CR, to demonstrate and support shared responsibility and accountability for safe motherhood, and to plan appropriate safe motherhood interventions and activities. Using the matrix, advocacy groups can facilitate a process that helps stakeholders see how they influence barriers and solutions to seeking, reaching, and receiving care. Program me planners can use the matrix to mobilize the necessary human and fiscal resources to adequately respond to stated needs and priorities. And health care

providers can use the matrix as a reference to reinforce facility preparedness and to more fully understand their role and the skills required to deliver care throughout pregnancy, labour and childbirth, and the postpartum/newborn period.

The BP/CR Matrix can be used to facilitate dialogue among safe motherhood, partners and stakeholders (Department of Community Medicine, 2009). The concept of BP/CR can be integrated into community mobilization and clinical workshops related to safe motherhood to improve communication and buy-in among stakeholders. Facilitating dialogue encourages everyone to see their part in finding solutions to the challenges inherent in implementing safe motherhood interventions. Through discussion, the BP/CR Matrix can be used to help stakeholders identify behaviours that must change at each stakeholder level.

Participatory exercises using the BP/CR Matrix can be designed to:

- Introduce and discuss the B P/CR concept and actions;
- Encourage shared solutions to life-threatening delays; and
- Increase awareness of shared responsibility and the need for strategic partnerships.

Empirical Review

In a cross-sectional descriptive study to find out birth preparedness and complication readiness among community as well as health facilities of Rewa district of Mathya Pradesh, India by the Department of Community Medicine (2008 ô 09), SS Medical College REWA, M.P., India, it was revealed that gap exists between knowledge and

skills of health care providers. Less than 50% of HCPs were competent in diagnosing and management of complications. HCPs had adequate knowledge of antenatal care but they are not able to implement in real situation. Birth preparedness existed to some extent at community level. Also the study showed that BP index in the study population was found to be lower (47.5%). BP/CR index was significantly high in above poverty line families, higher educational level and in-service and business group. BP/CR were significantly lower in population experiencing morbidity and mortality (39.7%). It also revealed that knowledge of danger signs (18.6%), knowledge of transportation services (18.6%), 1st trimester registration (24.1%) and population saved money (44.2%) were low.

Kakaire, Kaye, and Osinde (2011) carried out a cross-sectional study on male involvement in birth preparedness and complication readiness for emergency obstetric referrals in rural Uganda. Among 140 women admitted as emergency obstetric referrals in antenatal, labour or the postpartum period at the maternity ward of Kabale regional hospital, Uganda. Data was collected on socio-demographics and birth preparedness and what roles spouses were involved in during developing the birth plan. Any woman who attended antenatal care at least 4 times, received health education on pregnancy and childbirth danger signs, saved money for emergencies, made a plan of where to deliver from and made preparations for a birth companion, was deemed as having made a birth plan. Multivariate logistic regression analysis was conducted to analyze factors that were independently associated with having a birth plan. The results of their study showed that with respect to the role played by husbands in birth preparedness, sixty-two women (44.3%) made savings for an eventuality such as pregnancy complications, 60 (42.9%) were accompanied by the husband to the antenatal clinic, while 65 (43.4%) were

accompanied to the labor ward by the husbands. It also revealed that on the factors associated with having a birth plan, the mean age as 26.8 ± 6.6 years, while mean age of the spouse was 32.8 ± 8.3 years. Over 100 (73.8%) women and 75(55.2%) of their spouses had no formal education or only primary level of education respectively. On multivariable analysis, Primigravidae compared to multigravidae (Odd-Ration (OR) 1.8; 95%CI 1.0-3.0), education level of spouse of secondary or higher versus primary level or none (OR = 3.8; 95%CI = 1.2 - 11 .0), formal occupation versus informal occupation of spouse (OR = 1.6; 95%CI = 1.1 - 2.5), presence of pregnancy complications (OR = 1.4; 95%CI = 1.1 -2.0) and the anticipated mode of delivery of caesarean section versus vaginal delivery (OR = 1.6; 95%CI = 1.0 - 2.4) were associated with having a birth plan. They concluded by noting that individual women, families and communities need to be empowered to contribute positively to making pregnancy safer by making a birth plan.

In the study carried out on "Birth Preparedness among Antenatal Clients", Mutisoet. al. (2008) evaluated birth preparedness and complication readiness among antenatal care clients. The study was a descriptive cross-sectional study, at the Antenatal care clinic at Kenyatta National Hospital, Nairobi, Kenya. Three hundred and ninety four women attending antenatal care at Kenyatta National hospital were interviewed using a pre-tested questionnaire between May 2006 and August 2006. Clients who were above 32 weeks gestation and had attended the clinic more than twice were recruited. Systematic sampling was used to select the study participants with every third client being interviewed. Their study revealed that over 60% of the respondents were counselled by health workers on various elements of birth preparedness. Eighty seven point three per cent (87.3%) of the respondents were aware of their expected date of delivery, eighty four

point 3 (84.3%) had set aside funds for transport to hospital during labour while 62.9% had funds for emergencies. Sixty seven per cent (67%) of the respondents knew at least one danger sign in pregnancy while only 6.9% knew of three or more danger signs. One hundred and nine per cent (109%) of the respondents did not have a clear plan of what to do in case of an obstetric emergency. Level of education positively influenced birth preparedness. The study concluded that education and counseling on different aspects of birth preparedness was not provided to all clients; respondents' knowledge of danger signs in pregnancy was low, and many respondents did not know about birth preparedness and had no plans for emergencies.

Iliyasu, Abubakar, Galadanci, and Aliyu (2010) carried out a descriptive cross-sectional study among 400 married men in Ungogo LGA, Kano State, Nigeria on Birth Preparedness, Complication Readiness and Fathers' Participation in Maternity Care in a Northern Nigerian Community. The study revealed that majority of pregnancies was unplanned (96%); only 32.1% of men ever accompanied their spouses for maternity care. It also showed that there was very little preparation for skilled assistance during delivery (6.2%), savings for emergencies (19.5%) or transportation during labour (24.2%). It revealed that Young paternal age (adjusted odds ratio [AOR] = 1.5, 95% confidence interval [CI] = 1.2-2.6), formal education (AOR = 1.9, 95% CI = 1.1-3.4) and non-Hausa Fulani ethnicity (AOR 2.3, 95% CI = 1.4-3.3) were independent predictors of male participation in maternity care. It concluded that there is a need to increase involvement of men in their partners' maternity care through peer-led, culturally-sensitive community education and appropriate health system reforms.

Kuteyi, Kuku, Lateef, Ogundipe, Mogbeyteren, and Banjo (2011) carried a descriptive cross-sectional study on "Birth Preparedness and Complication Readiness of Pregnant Women attending the Three Levels of Health Facilities in Ife Central Local Government, Nigeria" among 401 pregnant women. The antenatal women studied were selected proportional to client caseloads from health facilities using a semi-structured questionnaire. Univariate, bivariate and multivariate analyses were performed. The study revealed that one hundred and fifty eight (39.3%) respondents knew no danger sign in pregnancy, childbirth and postpartum period; only 24 (6.0%) had adequate knowledge of obstetric danger signs without prompting; three hundred and forty (84.8%) and 312 (78.3%) women respectively had identified a birth place and began saving money for delivery; 304 (79.4%) made no arrangement for a blood donor; and majority of pregnant women (60-82%) took five other steps towards emergency readiness. By the study criteria, 140 (34.9%) and 265 (66.1%) were birth and complication prepared respectively. They concluded that majority of pregnant women had poor knowledge of obstetric danger signs, and majority of the women booked late.

A cross-sectional, multicentre study was carried out in Benin Central Hospital and University of Benin Teaching Hospital (UBTH) Edo state among 300 women on "The Concept of Birth Preparedness in the Niger Delta of Nigeria" (Ibrahim, Owoeye and Wagbatsoma, 2013). Their study showed that 38% of the respondents revealed some level of awareness of birth preparedness however, there are statistically significant difference in the source of information, level of education and the expression of danger signs (all p value <0.005) among these group of women. Most (40.4%) embraced birth preparedness because it allows for ease of delivery, child spacing (28.1%) and to avoid

complications (23.7%); and majority of respondents in UBTH plan to achieve these goals by savings (92.1%), which is statistically different from those respondents from CUB ($z = 3.59; p = 0.000$).

The study by August, Pembe, Kayombo, Mbekenga, Axemo and Darj (2015) explored the perceptions, experiences, and challenges the community faced on BP/CR. A qualitative study design using Focused Group Discussions was conducted. Twelve focus group discussions were held with four separate groups: young men and women and older men and women in a rural community in Tanzania. Qualitative content analysis was used to analyze the data. The community members expressed a perceived need to prepare for childbirth. They were aware of the importance to attend the antenatal clinics, relied on family support for practical and financial preparations such as saving money for costs related to delivery, moving closer to the nearest hospital, and also to use traditional herbs, in favour of a positive outcome. Community recognized that pregnancy and childbirth complications are preferably treated at hospital. Facility delivery was preferred; however, certain factors including stigma on unmarried women and transportation were identified as hindering birth preparedness and hence utilization of skilled care. Challenges were related to the consequences of poverty, though the maternal health care should be free, they perceived difficulties due to informal user fees. The study revealed community perceptions that were in favour of using skilled care in BP/CR. However, issues related to inability to prepare in advance hinder the realization of the intention to use skilled care. It is important to innovate how the community reinforces BP/CR, such as using insurance schemes, using community health funds, and providing information on other birth preparedness messages via community health workers.

Bintabara, Mohamed, Mghamba, Wasswa and Wpembeni (2015) assessed the practice and determinants of Birth preparedness and complication readiness among recently delivered women in Chamwino district, Central Tanzania. A community based cross-sectional study was conducted to women who delivered two years prior to survey in January 2014 at Chamwino district, Tanzania. Woman was considered as prepared for birth and its complication if she reported at least three of these; know expected date of delivery, saved money, identified a skilled birth attendant/health facility, mode of transport and Identified two compatible blood donors. Descriptive, bivariate and multivariable logistic regression analyses were performed at P value <0.05 level of significance. They interviewed 428 women whose median age (IQR) was 26.5 (22-33) years. About 249 (58.2 %) of the respondents were considered as prepared for birth and its complications. After controlling for confounding and clustering effect, significant determinants of birth preparedness and complication readiness were found to be maternal education (AOR = 2.26, 95 % CI; 1.39, 3.67), spouse employment (AOR = 2.18, 95 % CI; 1.46, 3.25), booking at ANC (AOR = 2.03, 95 % CI; 1.11, 3.72), Four or more antenatal visits, (AOR = 1.94, 95 % CI; 1.17, 3.21) and knowledge of key danger signs (AOR = 4.16, 95 % CI; 2.32, 7.45). Prepared for birth was found to be associated with institutional delivery (AOR = 2.45, 95 % CI; 1.12, 5.34). The proportion of women who prepared for birth and its complications were found to be low. They recommended that district reproductive and child health coordinators should emphasis on early and frequent antenatal care visits, since they were among predictors of birth preparedness and complication readiness.

Debelew, Afework and Yalew (2015) examined BP/CR and factors affecting its status in Accra, Ghana. A cross-sectional study was conducted among randomly selected 3612 pregnant women from June-September 2012. The data were collected by interviewer-administered structured questionnaire and analyzed by SPSS V.20.0 and STATA 13. Mixed-effects multilevel logistic regression model was used to identify factors affecting birth preparedness and complication readiness. The status of birth preparedness and complication readiness was 23.3% (95% CI: 21.8%, 24.9%). Being in urban residence and having health center within two hours distance were among the higher level factors increasing birth preparedness and complication readiness. Educational status of primary or above, husband's occupation of employed or merchant, third or above wealth quintiles, knowledge of key danger signs during labor, attitude and frequency of antenatal care visits were among the lower level factors found to increase the likelihood of preparation for birth and its complications. The status of birth preparedness and complication readiness was low in the study area. Both community level and individual level factors had important program implications. Socio demographic, economic, knowledge of key danger signs, attitude and antenatal care use were identified as associated factors. Improving antenatal care, giving special emphasis to danger signs and community based health education are recommended.

Kaso and Addisse (2014) also assessed knowledge and practices towards birth preparedness and complication readiness and associated factors among women of reproductive age group (15-49) in Robe Woreda, Arsi Zone, Oromia Region, Ethiopia. Community-based cross-sectional study supplemented by qualitative design was conducted in January, 2012. A total of 575 women from 5 kebeles were selected after

proportionally allocated to population size and interviewed using structured and semi-structured, pre-tested questionnaires. Univariate and bivariate analysis was performed. Multiple logistic regression analysis was also done to control for possible confounding variables. Taking into account place of delivery identification, means of transportation, skilled attendant identification and saving money, about 16.5% of the respondents were prepared for birth and its complications. Preparation for birth and its complication was higher among educated mothers (AOR = 6.23, 95% CI = 1.5, 25.87). Monthly income of >716 Ethiopian birr (AOR = 1.94, 95% CI = 1.01, 3.87), ANC visit (AOR = 5.68, 95% CI = 1.27, 25.4), knowledge of obstetric complications (AOR = 2.94, 95% CI = 1.61, 5.37) and those who had given birth at health facility before their last delivery (AOR = 3.9, 95% CI = 2.04, 7.46) were also significantly associated with birth preparedness and complication readiness.

Agbodohu (2013) assessed the knowledge and practices of birth preparedness and complication readiness among expectant mothers in Accra specifically to determine the association between socio-demographic factors and birth preparedness and complication readiness. A cross sectional design was employed with a sample size of 400 expectant mothers in their third trimester at the Ridge Regional Hospital. A simple random sampling of pregnant women visiting the RRH was done using the lottery method to select the participants. Analysis was done using SPSS version 16. Though many of the mothers (77.3%) were aware of the fact that they may need blood during labour only 16.4% of mothers actually had blood in the blood bank and 31.6% said they had arranged for a blood donor. There was a significant relationship between level of preparedness (p-

value = 0.008) and educational level, also with ANC attendance ($p = 0.032$). It was observed that almost two-thirds of the respondents knew some danger signs and gave one or two examples. Two-thirds did not know anything about Eclampsia or pregnancy induced hypertension. Almost all respondents (96%) had identified a close family member as a companion when in labour. The respondents demonstrated little knowledge on danger signs in pregnancy and many respondents did not know about birth preparedness especially in the area of blood donation. It is suggested that strategies be put in place for effective implementation of the policy on blood donation so that by the seventh month of pregnancy every expectant mother, irrespective of her haemoglobin level must have her blood ready in the blood bank to ensure complication readiness. It is recommended that the standard for focused antenatal care is fully implemented as this will improve upon one on one provision of information and health education on danger signs in pregnancy. In doing so, there will be a general increase on the level of birth preparedness and complication readiness.

Similarly Tobin, Ofili, Enebeli and Enueze (2015) assessed BP/CR among pregnant women attending Antenatal care in Primary Health Care Centres in Oredo Local Government Area (LGA) in Benin City, Edo State. Data were collected using structured questionnaires, and analyzed using the Statistical Package for Social sciences (SPSS) Version 16.0. Descriptive data were presented in frequency tables. Statistical testing using Chi-square was carried out with level of significance set as $P < 0.05$. One hundred and fourteen pregnant women (49.6%) were aware of at least one danger sign associated with pregnancy, labor, and postpartum, while 201 women (87.4%) had identified a skilled

birth attendant. Twenty-six (11.3%) had saved money for obstetric care, and 143 (62.2%) had purchased or made plans to purchase birth supplies. Two hundred and one (87.4%) respondents were found to be well-prepared for the birth. Having a tertiary education and being married were factors found to be significantly associated with BP. Majority of the women had BP/CR in place. However, emphasis should be placed on identifying target groups and practice gaps, for intensified health education.

Summary of Literature Review

Birth preparedness and complication readiness have been extensively studied, particularly in developed countries. However, several of these studies focused on birth preparedness and complication for emergency obstetric referrals, male involvement, among antenatal clients to the three levels of health facilities and the general concept of birth preparedness. These reviews all showed the need for birth preparedness. However, the studies were not able to point the roles of couples (both male and female partners as a unit) in birth preparation and complication readiness. Most of the studies were health facility based, to the neglect of the community setting where there is increased morbidity and mortality of pregnant women and children. Thus, a gap exists. Therefore the need to determine the knowledge of couples towards birth preparedness and complication readiness, their practice and what influences their practice in selected rural communities in Oji River LGA. Enugu State.

CHAPTER THREE

RESEARCH METHOD

This chapter presents the research design, area of study, population of study, sample and sampling technique, instrument for data collection, reliability and validity of instrument, ethical consideration, procedure for data collection and method of data analysis.

Research Design

The research design that was adopted for this study was the descriptive cross-sectional survey design. This design was successfully used by scholars for similar studies (Iliyasu, et. al., 2010 and Ibrahim et. al., 2013), therefore the researcher deems it fit, since similar variables are being measured in the study. This design was thus adjudged suitable for this study because it involved the description of some characteristics from a given population as it exists.

Area of Study

This study was carried out in Oji River LGA of Enugu State. Oji River is a [Local Government Area](#) of [Enugu State, Nigeria](#) to the south bordering [Anambra State](#) and [Abia State](#). Its headquarters are in the town called Oji River. The towns within Oji River LGA are: Awlaw, Achi Uno, Achi Agu, Oji Urban, Ugwuoba, Inyi and Akpugo-Eze. It has an area of approximately 403 km². The main occupation is farming and trading but the literate ones are mainly civil servants.

Oji River has one general hospital and one Joint hospital run by the mission. Each community has at least a health centre or a health post. Social amenities like electricity, good water supply, phone services, recreational centres and many markets are available. Most of the main access roads that lead into each community are tarred and connected. However, the roads that lead into the villages are fairly motor able.

Population of Study

The total population of Oji River LGA is 126,587 at the 2006 census (NPC, 2006). However, the target population of the study (population of couples in Oji River LGA) is unknown as there is no statistical evidence of population of couples in Oji River LGA. Hence, the population of the study is unknown.

Sample

A sample size of 470 was determined using the following formula by Suresh and Chandrashekara (2012) for unknown populations.

$$N = \frac{Z_{\alpha/2}^2 * P * (1-p) * D}{E^2}$$

where;

- P is the prevalence or proportion of event of interest for the study,
- E is the Precision (or margin of error) with which a researcher want to measure something. Generally, E will be 5% of P; and
- $Z_{\alpha/2}$ is normal deviate for two-tailed alternative hypothesis at a level of significance; For example, for 5% level of significance, $Z_{\alpha/2}$ is 1.96 and for 1% level of significance it is 2.58.
- D is the design effect reflects the sampling design used in the survey type of study.

- This is 1 for simple random sampling and higher values (usually 1 to 2) for other designs such as stratified, systematic, cluster random sampling etc, estimated to compensate for deviation from simple random sampling procedure.
- The design effect for cluster random sampling is taken as 1.5 to 2.
- For the purposive sampling, convenience or judgment sampling, D will cross 10. Higher the D, the more will be sample size required for a study.
- Simple random sampling is unlikely to be the sampling method in an actual filed survey.
- If another sampling method such as systematic, stratified, cluster sampling etc. Is used, a larger sample size is likely to be needed because of the design effect.
- In case of impact study, P may be estimated at 50% to reflect the assumption that an impact is expected in 50% of the population.
- A P of 50% is also a conservative estimate;

(Suresh, KP and Chandrashekara, S., 2012)

Based on the foregoing, the parameters for calculating the sample size for this study are:

P = 90% (being sampling method is purposive, convenience or judgment)

E = 10%

Z_{1/2} = 1.96 (at 95% confidence interval or 5% level of significance)

D = 11

Thus, the sample size is calculated thus;

$$N = (Z_{1/2})^2 P(1-P) * 1 / E^2$$

$$= (1.96)^2 * 0.90 * (1-0.90) * 11 / (0.1 * 0.90)^2$$

$$= 3.8416 * 0.99 / 0.0081$$

$$= 3.803184 / 0.0081$$

= 469.53

é 470 for a purposive, convenience or judgment sampling design.

Hence, sample size of 470 was required to conduct the survey.

Based on the sample size, a maximum of 68 copies of questionnaire will be allocated to each of the seven communities in Oji River LGA.

Sampling Procedure

The exponential non-discriminative snowball sampling (also known as chain referral) technique was used for the study. Snowball sampling is a non-probability sampling technique that is used by researchers to identify potential subjects in studies where subjects are hard to locate (Michael & Alan, 2004). This method suits the study as the couples did not have a particular place where they met; and each couple met made referrals to two other couples, thereby ensuring a wider distribution of couples that were covered in the study. This process was continued until the sample size was reached covering the seven communities.

Instrument for Data Collection

Data collection was done by researcher-constructed questionnaire developed by the researcher. It was aimed at determining the knowledge and practice of couples towards birth preparedness and complication readiness as well as determining the factors that hindered birth preparedness and complication readiness among couples. The instrument comprised of four (4) sections: A ó D. Section òAö elicited responses on the demographic character of the study participants. Thus data on couplesø age, occupation,

highest educational qualification, average monthly income, number of children and number of years together as a couple were obtained. Section 'B' was designed to assess couples knowledge of birth preparedness and complication readiness. Twenty-five questions were raised covering danger signs before, during and after delivery and other birth preparedness issues. The response options were a 4-point Likert scale with 4 denoting 'Strongly Agree' and 1, 'Strongly Disagree'.

Section 'C' provided dichotomous responses (Yes or No) for ten questions aimed at assessing couples' practice of birth preparedness and complication readiness. The last Section, 'D' was designed to obtain responses on respondents' ranking of factors that influenced their practice of birth preparedness and complication readiness. A 4-point Likert scale was used to enable respondents rank these factors. Consequently, 'Strong Influence' (SI) was scored 4, while strongly disagree (SD) was scored 1.

Validity of Instrument

The face and content validity of the instrument were done by the supervisor and two experts in Measurement and Evaluation from Department of Nursing Sciences. Their observations and comments were used to effect corrections before the instrument was administered to the respondents.

Reliability of Instrument

The reliability of instrument was determined by first pilot testing it on fifty couples from Enugu South LGA who are not involved in the main study but share similar characteristics of the study population. Test-retest method was used to collect data and Cronbach's Alpha was used to calculate the reliability of the instrument. An alpha of

0.819 and a standardized item (inter item) coefficient of 0.804 were obtained for the research instrument and therefore deemed reliable.

Ethical Consideration

Ethical approval will be obtained from the Research Ethical Committee of University of Nigeria Teaching Hospital (UNTH), Ituku Ozalla. (See appendix 1).

An administrative permission to carry out this study will be obtained from the local government and presented to the head of different communities. A written informed consent will be obtained from the respondents after the purpose of the study had been clearly explained to their understanding. Participation will be voluntary. Respondents will be free to withdraw from the study at anytime and this will be properly communicated to them.

Procedure for Data Collection

The ethical approval and introductory letter from the Department of Nursing Science University of Nigeria, administrative permit that will be obtained from the Chairman of Orji River LGA and subsequently the heads of the seven (7) communities in Orji River LGA, which will enable the researcher administer the questionnaire. Four research assistants will be trained on the purpose of study and how to collect data from the respondents. Both the researcher and the assistants will administer the 470 copies of the questionnaire to the respondents in their various homes and retrieval will be done as soon as each participant completes the questionnaire. Data collection will last for thirty days.

Method of Data Analysis

Data generated will be collated, tallied and analyzed using statistical package for social sciences (SPSS) 17.0. Data will be presented descriptively using frequency and percentage tables, mean, standard deviation and charts. A 4-point Likert scale was used for responses to section B (knowledge) and was scored 4 and 3 for "Strongly Agree" and "Agree" respectively. "Disagree" and "Strongly Disagree" were scored 2 and 1 respectively. The maximum score obtainable is 100 points. The ranges for assessing respondents' Knowledge of Birth Preparedness and Complication Readiness (KBPCR) were: Scores > 80 =Very Good KBPCR; 65 ó 80 =Good KBPCR; 55 ó 64 = Poor KBPCR; and Scores < 55 = Very Poor KBPCR. In the same vein, the maximum score for respondents' Practice of Birth Preparedness and Complication Readiness (PBPCR) was 100 points. The dichotomous responses (Yes or No) for ten questions means each question has 10 points. The ranges for assessing respondents' PBPCR were: Scores > 50 = Good PBPCR; 40 ó 50 = Fair PBPCR; and Scores < 40 = Poor PBPCR. Relative Importance Index (RII) will be used to identify and rank the factors that hinder the practice of birth preparedness and complication readiness amongst the respondents. Analysis of Variance (ANOVA) will be used to establish the relationship between couples economic status and their practice of birth preparedness and complication readiness. For all the inferential statistical tests, P will be set at 0.05 level of significance.

**CHAPTER FOUR
PRESENTATION OF RESULTS**

This chapter focused on the presentation results from data analysis. Out of a total number of 470 questionnaires administered, 390 were correctly filled giving a response rate of 82.98%.

Table 1: Summary of demographic characteristics of study participants

Demographic Variable	Husbands		Wives	
	f	%	f	%
Age				
<30 years	19	4.9	327	83.8
30 – 40 years	146	37.4	63	16.2
>40years	225	57.7	0	0
Occupation				
Civil Servant	65	16.7	190	48.7
Private Sector Professional	15	3.8	44	11.3
Artisan	52	13.3	0	0
Apprentice	8	2.1	7	1.8
Trader	136	34.9	45	11.5
Farmer	114	29.2	38	9.7
Student	0	0	29	7.4
Unemployed	0	0	37	9.5
Highest Educational Qualification				
Post-tertiary	9	2.3	0	0
Tertiary	64	16.4	78	20.0
Secondary School	276	70.8	192	49.2
Primary Education	15	3.8	87	22.3
No Formal Education	26	6.7	33	8.5
Average Monthly Income				
<N20,000	19	4.9	271	69.5
N20,000 – N40,000	260	66.7	109	27.9
N40,001 – N60,000	51	13.1	10	2.6
N60,001 – N80,000	35	9.0	0	0
>N80,000	25	6.4	0	0
Number of Children				
None	133	34.1	133	34.1
<3	203	52.1	203	52.1
3 – 5	44	11.3	44	11.3
>5	10	2.6	10	2.6
Number of years married/together				
<5 years	299	76.7	299	76.7
5 – 10 years	81	20.8	81	20.8
>10 years	10	2.6	10	2.6

*Mean (Husbands: 39.13; Wives: 30.11) **SD (Husbands: ± 5.2914 ; Wives: ± 7.8172)

Table 1 above presents the frequency distribution of the demographic characteristics of the study participants. The first four demographic variables of the couples were presented differently as the responses of the male respondents differed from their and female counterparts. The last two were presented based on their responses as a couple. Out of the 390 participants, no woman was above 40 years of age while 19(4.9%) of the male respondents were below 30 years. Most of the women 327(83.3%) were within the same age bracket. The modal age bracket for the male respondents was above forty years of age. This was followed by those within ages 30 ó 40 years. The occupation of the respondents reveals that the modal occupation for husbands was trading 136(34.9%), while the wives were civil servants 190(48.7%).

The male respondents were predominantly secondary school certificate holders 276(70.8%), while 64(16.4%) and 9(2.3%) of them had tertiary and post tertiary degrees. Twenty percent of females (78) were graduates while 192(49.2%) had secondary school certificates. According to average monthly income amongst the respondents, no female earned above N60, 000 per month, but most of them 271(69.5%) earned less than N20, 000. On the other hand, less than 10% of the males earned above N60, 000 per month. The modal income range for men was N20, 000 ó N40, 000.

The modal range for number of children of the couples 203(52.1%) was less than 3. Only 10 respondents (2.6%) had more than five children. The 133 couples were expecting their first child and as such had no children yet. The length of marriage revealed that 299(76.7%) were less than 5 years together, while 81(20.8%) fell within 5 ó 10 years.

RESEARCH QUESTION ONE

What is the knowledge of couples about birth preparedness and complication readiness?

Table 2: Distribution of Couples' responses on their knowledge of birth preparedness and complication readiness in Oji River LGA, Enugu state

KNOWLEDGE VARIABLES	Str Agree		Agree		Disagree		Str Disagree		N
	F	%	F	%	F	%	F	%	
<i>During Pregnancy</i>									
Vaginal bleeding	24	6.15	250	64.1	89	22.8	27	6.92	390
Anaemia(Paleness of lips, nailbed & conjunctiva)	87	22.3	258	66.2	41	10.5	4	1.03	390
Reduced/loss of foetal movement	121	31	170	43.6	56	14.4	43	11	390
Water breaks before labour pains	86	22.1	189	48.5	55	14.1	60	15.4	390
Continuing drainage of liquor	74	19	247	63.3	52	13.3	17	4.36	390
Swelling of hands, face, entire body	41	10.5	197	50.5	92	23.6	60	15.4	390
Severe headache	12	3.08	255	65.4	98	25.1	25	6.41	390
Dizziness/Blurred vision	39	10	230	59	53	13.6	68	17.4	390
Loss of consciousness	77	19.7	198	50.8	58	14.9	57	14.6	390
Convulsions	198	50.8	147	37.7	28	7.18	17	4.36	390
<i>During or After Childbirth</i>									
Prolonged labour (more than 1 night to sunrise or vice versa)	52	13.3	196	50.3	68	17.4	74	19	390
Heavy vaginal bleeding during or after delivery	34	8.72	255	65.4	54	13.8	47	12.1	390
Delayed Placenta delivery	89	22.8	244	62.6	29	7.44	28	7.18	390
Part of baby showing other than the head	61	15.6	213	54.6	68	17.4	48	12.3	390
Cord presentation	32	8.21	151	38.7	144	36.9	63	16.2	390
Offensive odour from the vagina	11	2.82	210	53.8	102	26.2	67	17.2	390
<i>Birth Preparedness</i>									
Awareness of expected date of delivery	67	17.2	254	65.1	41	10.5	28	7.18	390
Awareness that labour may start before due date	32	8.21	211	54.1	89	22.8	58	14.9	390
Identification of transport to be used to hospital at night	109	27.9	71	18.2	147	37.7	63	16.2	390
Keeping funds aside for transport and other incidentals when labour starts	168	43.1	187	47.9	23	5.9	12	3.08	390
Identifying a birth companion	74	19	195	50	95	24.4	26	6.67	390
Identifying a blood donor	142	36.4	158	40.5	51	13.1	39	10	390
Identifying decision-making process in case of obstetric emergency	89	22.8	111	28.5	102	26.2	88	22.6	390
Arranging skilled assistance	100	25.6	89	22.8	130	33.3	71	18.2	390
Making decision on place of delivery	100	25.6	206	52.8	68	17.4	16	4.1	390

Table 2 presents the frequency counts and percentages of couples' responses to the 4-point Likert scale designed to assess their knowledge of birth preparedness and complication readiness. The knowledge component was broken down into various variables during pregnancy, during or after childbirth, and birth preparedness. More than 60% of the couples were aware of the danger signs during pregnancy as they checked the right responses for the knowledge variables. Therefore issues of vaginal bleeding, loss of consciousness, and loss of foetal movement- to mention a few, were known to be danger signs during pregnancy. Couples' responses in the section dealing with danger signs during or after childbirth were slightly different from the previous section. Prolonged labour, heavy vaginal bleeding and the timing of the placenta coming out after delivery were known to be danger signs by more than 60% of the couples. However, cord presentation was not perceived to be a danger sign by approximately 52% of the couples. Issues bordering on birth preparedness was examined in the last section in the table. 82% of the study participants knew that there was a need to be continuously aware of the expected delivery date; while 62% were aware that labour could start before that due date. The need to save for emergencies was a known fact for 67% of the couples while identifying a blood donor and birth companion were not considered very necessary by less than 32% of the respondents.

Table 3: Summary of respondents' knowledge of birth preparedness and complication readiness in Oji River LGA, Enugu state (n=390)

KNOWLEDGE LEVEL	Frequency	Percent	Valid Percent	Cumulative Percent
Very Good (>80%)	42	10.8	10.8	10.8
Good (70% ó 80%)	265	67.9	67.9	78.7
Fair (65% - 70%)	41	10.5	10.5	89.2
Poor (55% - 64%)	25	6.4	6.4	95.6
Very Poor (<55%)	17	4.4	4.4	100.0
Total	390	100.0	100.0	

Table 3 above presents the summary of the respondents' knowledge adequacy with respect to birth preparedness and complication readiness. The scores assigned in five ranges were used to determine respondents' level of knowledge. The table shows that the study participants have an appreciably high knowledge of birth preparedness and complication readiness in the study area. More than 42(10%) respondents had very good knowledge scoring above 80% in the assessment. 256(67.9%) of the respondents scored between 70 and 80%, showing they had good knowledge of issues pertaining to birth preparedness and complication readiness. Forty-one respondents (10.5%) had fair knowledge while less than 11% had poor or very poor knowledge on the subject of investigation.

RESEARCH QUESTION TWO

What is the couples' practice of preparedness and complication readiness?

Table 4: Distribution of Couples' responses on their practice of birth preparedness and complication readiness in Oji River LGA, Enugu state

PRACTICE VARIABLES	YES		NO	
	F	%	F	%
Attended antenatal care at least 4 times	104	26.7	286	73.3
Put in use health education on pregnancy and childbirth complications	168	43.1	222	56.9
Made a plan of the facility to deliver from	88	22.6	302	77.4
Saved money in case of pregnancy/birth complications	83	21.3	307	78.7
Arranged to have a birth companion or attendant during delivery	274	70.3	116	29.7
Provide transport or keep money aside for transport	102	26.2	288	73.8
Makes provision for blood donation	76	19.5	314	80.5
Buys baby's clothing and other requirements	100	25.6	290	74.4
Makes arrangement for care of the home during mother's absence	191	49	199	51

Couples responses on their practice of birth preparedness and complication readiness were markedly different from their knowledge level. Except in making domestic arrangements for care of home during mother's absence, a birth companion and health education on pregnancy and its complications, less than 30% of study participants practiced good birth preparedness and complication readiness. 26.7% attended antenatal at least 4 times. Only 76 (19.5%) made provision for blood donation while 26% provided transport or its monetary equivalent. One hundred couples bought baby clothes and 112 had health education on childbirth and its complications.

Table 5: Summary of respondents' practice of birth preparedness and complication readiness in Oji River LGA, Enugu state

COUPLES' PRACTICE	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Good (>50%)	76	19.5	19.5	19.5
Fair (40% - 50%)	168	43.1	43.1	62.6
Poor (<40%)	146	37.4	37.4	100.0
Total	390	100.0	100.0	

Only 76 respondents, representing approximately 20% of the entire sample, actually engaged in good birth preparedness and complication readiness practices. The table also revealed that 146 (37.4%) and 168 (43.1%) of the respondents had practiced poor and fair birth preparedness and complication readiness respectively.

RESEARCH QUESTION THREE

What are the factors that hinder couples' practice of birth preparedness and complication readiness?

Table 6: Factors that hinder couples practice of birth preparedness and complication readiness in Oji River LGA, Enugu state

Factors	4	3	2	1	RII
Location of health facility	67	129	127	67	0.625641
Lack of blood donors	57	136	161	36	0.637179
Financial constraint	214	130	46	0	0.857692
Insecurity mitigating access to health facility	45	138	154	53	0.612179
Lack of support/assistance (financial)	69	123	153	45	0.638462
Lack of transportation particularly at night	77	169	93	51	0.674359
Premature delivery	96	178	72	44	0.708974

All the factors examined in this study had a negative influence on couples' practice of birth preparedness and complication readiness, though in varying degrees. Consequently, these factors were ranked using Relative Importance Index (RII) which is presented in Table 5 above. Of the seven factors examined, 'financial constraint' had the highest RII (.857) and was thus ranked the most critical factor that negatively influenced or hindered couples' practice of birth preparedness and complication readiness. This factor was followed by the incidence of premature delivery (RII=.708). Lack of transportation particularly at night (RII=.674); lack of support/assistance (RII=.638); and lack of blood donors (RII=.637) were ranked third, fourth and fifth respectively. The location of health facilities and insecurity mitigating access to health centre were ranked sixth and seventh respectively with RIIs of .625 and .612.

RESEARCH QUESTION FOUR

What is the relationship between couples' socio-economic status and their practice of birth preparedness and complication readiness?

The relationship between couples' socio-economic status and their practice of birth preparedness and complication readiness was analyzed using Spearman's Correlation. Since the couples (husbands and wives) do not share similar socio-economic statuses, the results (correlation coefficient and *p*-value) for husbands and their wives varied in some instances. The results are presented in Table 6 below.

Table 7: Summary of Spearman's Correlation of couples' socio-economic status and their practice of birth preparedness and complication readiness in Oji River LGA, Enugu state.

DEMOGRAPHIC VARIABLE	CORRELATION COEFFICIENT	SIG. (p<0.05)	REMARKS
<i>Age</i>			Weak positive correlation; not significant
Husband	.112	.080	
Wife	.288	.061	
<i>Occupation</i>			Strong positive correlation; not significant
Husband	.704	.174	
Wife	.502	.068	
<i>Highest educational qualification</i>			Positive correlation and significant
Husband	.572	.002**	
Wife	.106	.050**	
<i>Average monthly income</i>			Strong positive correlation and significant
Husband	.732	.017**	
Wife	.649	.003**	
<i>Number of children</i>	-.521	.133	Negative correlation, not significant
<i>Number of years together</i>	.644	.005**	Positive correlation and significant

**correlation significant at p<0.05

Table 7 shows that correlation between age of the husbands their practice of birth preparedness and complication readiness was positive ($\rho = 0.122$). The same applied to their wives ($\rho = 0.288$). Although these correlations were positive, they were not statistically significant given their p -values of .080 and .061. The occupation of the respondents was categorized and weighted accordingly to reflect their socio-economic status with artisans/farmers at the lowest rung and professionals at the highest rung of the scale. The correlation revealed that respondents' occupation had a strong positive correlation with their practice of birth preparedness and complication readiness. Unlike in the previous demographic status (Age), the occupation of the husbands had a stronger correlation ($\rho = .704$) than that of the wives ($\rho = .502$). These strong correlations were however not statistically significant. Couples' educational exposure captured by their highest educational qualification had a positive statistically significant correlation with their practice of birth preparedness and complication readiness. The male respondents had a higher correlation coefficient ($\rho = 0.572$; $p = 0.002$) than their female counterparts ($\rho = .102$; $p = 0.050$).

The table also revealed that respondents' average monthly income also had a strong positive correlation with their practice of birth preparedness and complication readiness. The correlation was also significant for both husbands ($\rho = .732$; $p = 0.017$) and wives ($\rho = .649$; $p = 0.003$). The last two socio-economic factors- "Number of Children" and "Number of Years together" were not correlated dichotomously (husbands and wives separately), hence the correlation coefficient was computed for each couple. The number of children couples had together had a negative, though insignificant, correlation with their practice of birth preparedness and complication readiness ($\rho = -0.521$; $p = 0.133$).

The couples' number of years together had a strong positive correlation ($\rho=0.644$) with their practice of birth preparedness and complication readiness. The correlation was also statistically significant at $p=0.005$.

Test of Hypothesis

The alternate hypothesis that guided this study was:

There is association between couples' socio-economic status and their practice of birth preparedness and complication readiness.

Based on the analysis of data presented in Table 4, the remarks as contained in the fourth column show that couples' socio-economic status was associated with their practice of birth preparedness and complication readiness. Consequently, the alternate hypothesis was accepted.

CHAPTER FIVE

DISCUSSION

This chapter discussed the major findings of the study. It also presented conclusions, recommendations, limitations of the study, summary and suggestions for further studies.

Discussion of major findings

Knowledge of birth preparedness and complication readiness at Oji River LGA, Enugu

The knowledge of birth preparedness and complication readiness among the study participants was relatively high. The study revealed that 307(78.7%) couples had good knowledge of birth preparedness and complication readiness based on the assessment scores earned from Section B in the study questionnaire. In the same vein, less than 25% of them scored below 70% and as such were classified as having fair to very poor knowledge of the subject matter. The danger signs during pregnancy were well known by more than 60% of the study participants. The modal frequencies for the right knowledge of danger signs during pregnancy were for convulsions and Anaemia. The reason for the good knowledge level amongst respondents may be attributable to the fact that these were very obvious danger signs that are also traditionally recognizable in the study area. Bleeding was also widely known as danger signs that could lead to complications if left unattended. The danger signs during or after childbirth were also examined. The findings show that 63% understood that prolonged labour was dangerous as well as heavy vaginal bleeding. Cord presentation was not considered a major danger sign by approximately 60% of the couples. Their awareness levels on birth preparedness assessment showed that arranging for skilled assistance was not known to be a priority for the respondents.

Overall, the couples ó though predominantly rural dwellers- showed they were quite knowledgeable on issues bordering on birth preparedness and complication readiness. This finding is in consonance with that of Mutisoet et al (2008) who found an appreciably high knowledge of birth preparedness and complication readiness amongst respondents in Nairobi. It is however at odds with a similar research by Kuteyi et al (2011) and Agbodolu (2013) who found out that a lower number of respondents (39.3%) and (33%) were aware of danger signs during pregnancy and child birth as well as the postpartum stage respectively.

Practice of birth preparedness and complication readiness at Oji River LGA, Enugu

Knowledge did not translate to practice as presented by the tables in the previous chapter. Only 76 respondents, representing approximately 20% of the entire sample, actually engaged in what could be termed good birth preparedness and complication readiness practices. This finding appears to be prevalent in sub Saharan African as a similar research in central Tanzania by Bintabara et al (2015) and Debelew et al (2014) in Southwest Ethiopia also revealed that the practice of BP/CR was found to be low among young mothers and pregnant women respectively. The tables also revealed that 146 (37.4%) and 168 (43.1%) of the respondents had practiced poor and fair birth preparedness and complication readiness respectively. The attendance to antenatal was poor for more than 70% of the respondents. Only 88 couples actually made a plan to deliver at a specific health facility. It was only in the arrangement to have a birth companion that majority (70%) of the respondents exhibited good practice of birth preparedness and complication readiness. The good social support structure in rural communities actually explains this particular practice. However, when compared to their

knowledge of the subject of investigation, respondents' knowledge level did not always translate to practice. This suggests that other factors besides knowledge adequacy may have been responsible for the poor practice of the study participants.

Factors that hinder couples practice of birth preparedness and complication readiness in Oji River LGA, Enugu state.

Since couples' practice of birth preparedness and complication readiness did not reflect their high knowledge level, factors that hindered their ability to put to practice what they knew were investigated. Findings from this study revealed that 'financial constraints' was the most critical factor that hindered couples' practice. On the RII scale, it was given the highest ranking (RII=.857). The respondents were quite knowledgeable, but it did not translate to practice. Majority of the couples earned less than N30,000 per month and this explains the dearth of funds to attend to issues during pregnancy. This finding agrees with that of August et al (2015) and Debelew et al (2014) who highlighted poverty as a major challenge militating against the practice of birth preparedness and complication readiness among community members in rural Tanzania. The incidence of premature delivery also contributed to factors that hindered their practice. This was closely linked to couples' ability to save up prior delivery. In the same vein, premature births often exacerbated the already poor financial status of respondents. Again, lack of appropriate transportation at night, which was also reported by August (2015), was found to be another constraint limiting couples practice of BP/CR. Lack of financial assistance, and availability of blood donors and location of health facility were also contributory factors. This situation also corroborates the observations of Iliyasu et al (2010) and Tobin et al (2015) who found out *inter alia* that savings for emergencies was significantly low and

affected preparations for childbirth among men in Ungogo LGA, Kano state and Oredo LGA, Edo state respectively.

Socio-economic factors associated with couples' practice of birth preparedness and complication readiness in Oji River LGA, Enugu state.

The findings reveal that the age and occupation of the couples (husbands and wives) was positively, though not significantly associated with their practice of birth preparedness and complication readiness. Couples' number of children was negatively associated with their practice. Couples with larger number of children had lower levels of good practice. The association was however not significant also. Couples' educational exposure, average monthly income and number of years they had spent together were all significant and positively associated with their practice of birth preparedness and complication readiness. This finding is similar to that of Bintabara et al (2015) in Chamwino district in Central Tanzania on BP/CR among recently delivered women. They found spouse employment was associated with BP/CR status. Similarly, Debelew et al (2015) found educational status, husband's occupation and income to be associated with BP/CR status. The findings suggest that higher educational attainment and income levels enhance the chances of couples' practice of birth preparedness and complication readiness.

Conclusion

Based on the findings of this study, the following conclusions have been made.

- Most of the couples 307(78.7%) had good knowledge of birth preparedness and complication readiness.

- Knowledge did not translate to practice as less than 20% of the couples actually practiced the acceptable level of practice of birth preparedness and complication readiness.
- Financial constraint was the most critical factor that hindered couples' practice of birth preparedness and complication readiness.
- All the socio-economic variables examined were associated with couples' practice of birth preparedness and complication readiness. Educational exposure, income and number of years together had significant positive associations with the subject matter while age and occupation were not significant.

Implication to Nursing

Birth preparedness and complication readiness is an important factor in reduction of maternal morbidity and mortality as well as infant morbidity and mortality. Therefore, there is need to assess the knowledge, practice and factors influencing birth preparedness and complication readiness among couples in the rural communities so that nurses can channel health education to the appropriate areas during community outreach programmes to reduce morbidity and mortality of both mothers and children.

Recommendations

Based on the findings, the following recommendations are made.

- There is a need for slight shift in focus on maternal and child care projects of government. Investments in improving awareness on danger signs appear to have paid off, however improving access by lowering financial requirements is imperative.

- There is also a need to improve transportation facilities suitable for pregnant women at the rural communities. This will significantly improve outcomes especially when emergencies occur and the need for referrals arise.
- Non-governmental Organizations (NGOs) and Faith-Based Organizations (FBOs) should focus on improving access to cheaper medical services for majority of low income earners in rural communities.

Limitations of Study

The researcher encountered certain difficulties in the course of this research and they include:

- The challenging terrain to access the communities examined.
- Some of the responses given by the respondents may have been estimations or even exaggerations. This has also been reported in similar studies.

Summary

This study assessed the knowledge, practice and factors that influenced birth preparedness and complication readiness amongst couples in selected communities in Oji River LGA, Enugu state. The study was designed to:

- Determine the knowledge of birth preparedness and complication readiness in the communities under study;
- Determine couples' practice of birth preparedness and complication readiness in the communities under study;
- Identify factors that hinder couples' practice of birth preparedness and complication readiness in the study area; and

- Establish the relationship between couples' socio-economic status and their practice of birth preparedness and complication readiness.

Literature was reviewed under conceptual review and empirical studies which were based on the objectives and research questions raised. Descriptive survey research design was employed and a sample of 390 was drawn from the study population. Validated questionnaire was administered to the respondents and their responses were analyzed using descriptive and inferential statistics. The study revealed that although most couples had good knowledge of birth preparedness and complication readiness, knowledge only translated to practice for less than 20% of the study participants.

Suggestion for further studies

This study showed that financial constraint was responsible for the gap between knowledge and practice among couples in the study area. There is a need to further investigate if similar situations exist in other local government areas, especially those with similar socio-economic statuses. This will significantly improve the ability of the state government to improve on maternal and child health outcomes through the design of apposite programmes.

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APPENDIX 1

Questionnaire

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

Dear Respondent,

This questionnaire is designed to obtain information on **ASSESSING KNOWLEDGE, PRACTICE AND FACTORS THAT INFLUENCE BIRTH PREPAREDNESS AND COMPLICATION READINESS AMONG COUPLES IN SELECTED RURAL COMMUNITIES IN OJI RIVER L.G.A., ENUGU STATE**

This research work is purely academic exercise and every information supplied, will be treated in confidence.

Thanks for your co-operation.

Yours faithfully,

Section A: Demographic Characteristics

1) Age:

Husband:]

Wife:

2) Occupation

Husband: (a) Civil Servant [] (b) Public Servant [] (c) Professional [] (d) Artisan []
(e) Apprentice [] (f) Student [] (g) Unemployed [] (h) Others(please specify)

Wife: (a) Civil Servant [] (b) Public Servant [] (c) Professional [] (d) Artisan []

(e)Apprentice [] (f) Student [] (g) Unemployed [] (h) Others (please specify)

3) Highest Educational Qualification

Husband: (a) No formal education [] (b) Primary education [] (c) Secondary education [] (d) Tertiary education [] (e) Post-Tertiary Education []

Wife: (a) No formal education [] (b) First School Leaving Certificate [] (c) Senior Secondary Education Certificate [] (d) Ordinary National Diploma(OND) [] (e) First Degree/HND []

4) Average Monthly Income

Husband:(a) Less than N20,000 [] (b) N20,000 -N40,000 [] (c) N40,001 - N60,000 [] (d) N60,001 -N80,000 [] (e) Above N80,000[]

Wife: (a) Less than N20,000[] (b) N20,000 - N40,000 [] (c) N40,001 - N60,000 [] (d) N60,001-N80,000 [] (e) Above N80,000 []

5) Number of Children: (a) 0 [] (b) 1 -2 [] (c) 3 -4 [] (d) 5 and above []

6) Number of years married/together: (a) < 5 yrs [] (b) 5 -9yrs [] (c) 10 - 14yrs [] (d) 15 - 19yrs [] (e) 20 yrs and above []

Section B: Knowledge of Birth preparedness and Complication Readiness

Danger Signs	Strongly agree (4)	Agree (3)	Disagree (2)	Strongly disagree(1)
<i>During pregnancy</i>				
Vaginal Bleeding				
Anaemia(Paleness of lips, nail bed &conjunctiva)				
Reduced/loss of foetal movement				
Water breaks before labour pains				
Continuing drainage of liquor (water)				
Swelling of hands, face, entire body				
Severe headache				
Dizziness/blurred vision				
Loss of consciousness				
High fever				
Convulsions("ihe odudo")				
<i>During or after childbirth</i>				
Prolonged labour (more than 1 night to sunrise or vice versa)				
Heavy vaginal bleeding during or after delivery				
Delayed placenta delivery				
Part of baby showing other than the head				
Cord presentation				
<i>Birth Preparedness</i>				
Awareness of expected date of delivery				
Awareness that labour may start before due date				
Identification of transport to be used to hospital at night				

Keeping funds aside for transport and other incidentals when labour starts				
Identifying a birth companion				
Identifying a blood donor				
Identifying decision making process in case of obstetric emergency				
Arranging for skilled assistance				
Making decision on place of delivery				

SECTION C: Practice of Birth Preparedness and Complication Readiness

Practice	Yes (1)	No (0)
Attended antenatal care at least four (4) times		
Put in use health education on pregnancy and its complications		
Put in use health education on childbirth and its complications		
Make plan of the facility to deliver		
Save money in case of pregnancy/ birth complications		
Arrange to have a birth companion or attendant during delivery		
Provide transport or keep money aside for transportation		
Makes provision for blood donation		
Buy baby's clothings and other requirements.		
Make arrangement for care of the home during mother's absence		

SECTION D: Factors that influence the practice of birth preparedness and complication readiness

Factors	Strongly agree (4)	Agree (3)	Disagree(2)	Strongly disagree(1)
Location (nearness or distance) of health facility				
Lack of blood donor				
Financial constraints (lack of money)				
Lack of transportation, particularly late at night				
Lack of support/assistance from family members, relatives and friends				
Pre-mature delivery				
Insecurity (fear of arm robbery attack if labour starts at night)				

APPENDIX 2

THE BP/CR MATRIX:

PREGNANCY

POLICE MAKER	FACILITY	PROVIDER
<p>Create an environment that support the survival of pregnancy women and newborns</p>	<p>Is equipped, staffed and managed to provide skilled care for the pregnant woman and newborns</p>	<p>Provides skilled care for normal and complicated pregnancies birth and the post partum period</p>
<p>Promotes health and survival for pregnant women and newborns</p> <p>Ensures that skilled antenatal care polices are evidenced based in place and politically endorsed</p> <p>Uses evidence based information to support systems that routinely update service delivery and cadre-specific guidelines</p> <p>Promotes and facilitates the adoption of evidence-based antenatal care.</p> <p>Ensure that adequate levels of resources (finance, material and human) are dedicated to supporting antenatal care and an emergency of referral system</p> <p>Encourage and facilitates participation in policy making and resource</p>	<p>Has essential drugs and equipments follows infection prevention principle and practices</p> <p>Has a functional emergency system including:</p> <ul style="list-style-type: none"> • Communication • Transportation • Safe blood supply • Emergency funds <p>Has service delivery guidelines on appropriate management during the antenatal period</p> <p>Has job aids to assist providers in performing appropriate antenatal care</p> <p>Ensures availability of a skilled provider 24 hours a day, 7 days a week.</p> <p>Is gender and culturally sensitive client – centered and friendly</p>	<p>Provides skilled antenatal care including:</p> <ul style="list-style-type: none"> • Detecting and managing complications • Promoting health and preventing diseases including <ul style="list-style-type: none"> - Provision of immunization and tetanus toxoid - Vitamin A and iodine in areas with deficiencies - Presumption treatment of malaria and worms in area of prevalence - Encourages use of bed nets - Screening for and maintaining HIV/AIDS tuberculosis and STD - Assisting the woman to prepare for birth including: <ul style="list-style-type: none"> - Items needed for clean birth - Identification of skilled providers for the birth - Plan for reaching provider at time and delivery - Identification of support people to help with transportation, care of children, household and accompaniment to health facility. - Complication readiness plan in case of emergency, emergence finds transportation, blood donors and decision making. - Counseling/educating the woman and family on danger signs, nutrition, family planning, breast feeding <p>HIV/AIDS</p> <ul style="list-style-type: none"> - Informing woman and family of existence of emergency funds - Referring to higher levels of care when appropriate. - Honouring the pregnant woman choices <p>Supports the community she derives</p>

<p>allocation for safe child birth and emergency reference service by communities, families, individuals and advocacy groups</p> <p>Coordinate donor support to integrate birth preparedness and complication readiness into antenatal services</p> <p>Has a national policy document that includes specific objectives for reducing maternal and newborn deaths.</p> <p>Ensure that products are placed for clinical management, blood donation, anesthesia, surgical intervention, infection prevention and physical infrastructure</p> <p>Advocates birth preparedness and complication readiness through all possible venues (e.g. national campaign, press conferences, community talks, local cautions, supportive facilities)</p>	<p>Involves community in quality of care</p> <ul style="list-style-type: none"> • Review case management of maternal and neonatal morbidity and mortality 	<p>Respects community's expectations and wants within that setting.</p> <p>Educates community members and birth preparedness and complications readiness.</p> <p>Promotes concept of birth preparedness and dispels misconception and harmful practices that could prevent birth preparedness and complication readiness.</p>
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COMMUNITY	FAMILY	WOMAN
Advocates and facilitates preparedness and readiness actions	Supports pregnant women's plan, during pregnancy, child birth and the post partum period	Prepares for birth, values and seeks skilled care delivery pregnancy, child birth and the postpartum period.
Support and values the use of antenatal care	Advocates for skilled health care for women	Attends at least four antenatal visits (obtains money, transports)
Supports special treatment for a woman during pregnancy	Supports and values the woman's use of antenatal care, adjusts responsibilities to allow attendance.	Makes a birth plan with provider, husband, family
Recognizes danger signs and supports implementing the complications readiness plan.	Makes plan with women to normal birth and complications	Decides and acts on where she was to give birth with a skilled provider.
Supports mother and baby-friendly decision making for normal birth and obstetric emergencies.	Identifies a skilled provider or child birth and the means to contact or reach the provider.	Identifies a skilled provider for birth and knows how to contact or reach the provider.
Has a function transportation infrastructure for women to reach care when needed.	Recognizes danger signs and facilitates the implementing the complication readiness plan.	Recognizes danger signs and implements the complications readiness plan.
Has a functional blood donor system	Identifies decision making process in case of obstetric emergency	Knows transportation system, where to go in case of emergency and support persons to accompany and stay with family.
Has community financing plan for obstetric emergencies	Knows transportation systems, where to go in case of emergency and supports persons to accompany and stay with family.	Speaks out and act on behalf of her and her child's health, safety and survival.
Can access facility and community emergency funds	Supports provider and woman in reaching referral site, if needed.	Knows that community and facility emergency funds are available.
Conducts dialogue with providers to ensure quality of care.	Knows supplies to bring	Has personal savings and can access in case of need.

	to	
<p>Dialogue and works together with provider on expectations</p> <p>Supports the facility that serves the community</p> <p>Educates members of the community about birth preparedness and complication readiness.</p> <p>Advocates for policies that supports skilled health care</p> <p>Promotes concept of birth preparedness and dispels misconceptions and harmful practices that could prevent birth preparedness and complication readiness.</p>	<p>Facilitate or have in the home.</p> <p>Know how to access community and facilitating emergency funds</p> <p>Has personal savings for costs associated with emergency care or normal birth.</p> <p>Know how and when to access community blood donor system</p> <p>Identifies blood donor</p>	<p>Knows who the blood donor is</p>

THE BO/CR MATRIX

LABOUR AND CHILD

POLICY MAKER	FACILITY	PROVIDER
Creates an environment that supports the survival of pregnant woman and newborns	Is equipped, staffed and managed to provide skilled for the pregnant women and new born	Provides skilled care for normal and complicated pregnancies birth and post partum period.
<p>Promote improved care during labour and child birth</p> <p>Ensures that skilled care polices for labour and child birth are evidenced-based in place and politically endorsed.</p>		

THE BP/CR MATRIX

LABOUR AND CHILD

POLICY MAKER	FACILITY	PROVIDER
<p>Creates an environment that supports the survival of pregnant women and newborns</p>	<p>Is equipped, staffed and managed to provide skilled care for the pregnant women and newborn.</p>	<p>Provides skilled care for normal and complicated pregnancies, birth and postpartum period.</p>
<p>Promotes improved care during labour and child birth</p> <p>Ensures that skilled care policies for labour and child birth are evidenced-based, in place and politically endorsed.</p> <p>Use evidence-based information to support systems that routinely update service delivery and cadre-specific guidelines.</p> <p>Promotes and facilitates that adoption of evidenced-based practices</p> <p>Supports policies for management of complications based on appropriate epidemiological, financial and socio-cultural data.</p> <p>Ensure that adequate levels of resources (financial, material, human) are dedicated to skilled care of birth and an effective emergency referral system.</p> <p>Encourages and facilitates participation in policy</p>	<p>Has essential drugs and equipments</p> <p>Follow infection prevention, principle and practice.</p> <p>Has appropriate space for birthing.</p> <p>Has a functional emergency system including:</p> <ul style="list-style-type: none"> • Communication • Transportation • Safe blood supply • Emergency funds <p>Has service delivery guidelines on appropriate management of labour and child birth.</p> <p>Has job aids to assist providers in performing labour and child birth procedures.</p> <p>Ensure availability of a skilled provider 24 hours a day and 7 days a week.</p> <p>Is gender and culturally sensitive, client centered and friendly.</p>	<p>Provides skilled care during labour and child birth including assessing and monitoring women during labour, using the partograph.</p> <ul style="list-style-type: none"> • Providing emotional and physical support through labour and child birth • Conducting a clean and safe delivery including active management of third stage of labour • Recognizing complications and provide appropriate management • Informing women and family of existence of emergency funds if available. • Referring to higher level of care when appropriate. <p>Supports the community she serves.</p> <p>Respect the community's expectation and wants within that setting</p> <p>Educates community about birth preparedness and complication readiness.</p> <p>Promotes concept of birth preparedness and dispels misconceptions</p>

<p>making and resource allocation for safe child birth and emergency of referral services by communities, families, individuals and advocacy growth.</p> <p>Coordinates donor supports for improving management of labour and child birth</p> <p>Ensures that protocols are in place for clinical management, blood donation, anesthesia, surgical intervention, infection prevention and physical infrastructure.</p> <p>Advocates birth preparedness and complication readiness through all possible venues (eg national campaigns, press conferences, community talks, local cautions supportive facilities.</p>	<p>Involves community in quality of care</p> <p>Reviews case management of maternal and neonatal morbidity and mortality</p>	<p>and harmful practices that could prevent birth preparedness and complication readiness.</p>
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COMMUNITY	FAMILY	WOMAN
Advocates and facilitates preparedness and readiness actions	Support pregnant woman's plan during pregnancy, child birth and postpartum period.	Prepares for birth venues and seeks skilled care during pregnancy, child birth and the post partum period.
Supports and values use of skilled providers at child birth.	Advocates for skilled health care for women.	Chooses provider and place of birth in antenatal period.
Supports implementing the woman's birth preparedness plan.	Recognizes normal labour and facilities implementing birth preparedness plan.	Recognize normal labour and understands birth preparedness plans.
Makes sure that the woman is not alone during labour, child birth and immediate post partum period.	Support woman in reaching place and provider for choice.	Recognizes danger signs and understands complications readiness plans.
Supports the woman in reaching place and provider of her choice.	Support provider and woman in reaching referral site if needed.	Knows transportation systems, where to go in case of emergency and support persons to stay with family
Has a functional blood donor system	Agrees with women in decision making process in case of obstetric emergency	Can assess community and facility emergency funds.
Recognizes danger signs and supports implementing the complications readiness plan.	Recognizes danger signs and facilities implementing the complication to reduce plan.	Has personal savings and can assess in case of need.
Supports mother and baby friendly decision making in case of obstetric emergencies.	Discusses with and supports woman labour and birthing decisions.	
Can assess facility and community emergency funds.	Know transportation systems, where to go in case of emergency and support persons to stay with family.	
Supports timely transportation of woman	Knows how to assess community and facility emergency funds.	

<p>Promotes community norms, that emphasise promoting of transportation for pregnant women and obstetric emergencies.</p> <p>Dialogues and works together with providers on expectation.</p> <p>Supports the facility that serves the community.</p> <p>Advocates for policies that supports skilled health care</p> <p>Promotes concept of birth preparedness and dispels misconception and harmful practices that could prevent birth preparedness and complications readiness.</p>	<p>Has personal savings for cost of associated with emerging care and on normal birth.</p> <p>Purchase necessary drugs or supply.</p> <p>Knows how and when to assess community blood donor system.</p> <p>Identifies blood donor</p>	
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APPENDI X 3

CRONBACH'S ALPHA RELIABILITY ANALYSIS RESULT FOR RESEARCH QUESTIONNAIRE

Scale: **ALL VARIABLES**

Case Processing Summary

	N	%
Cases: Valid	45	90.0
Excluded ^a	50	10.0
Total	25	100.0

a. Listwise deletion based on all variables in the procedure

Reliability Statistics

Source : *SPSS 17.0 Output File*

Cronbach's Alpha	Cronbach's Alpha based on Standardised items	No of items
.819	.804	40.
		10.0
		100.0

Source : *SPSS 17.0 Output File*

**APPENDIX
INFORMED CONSENT**

Introduction: My name is Ilo, Ijeoma J. a post graduate student of the Department of Nursing Sciences, Faculty of Health Sciences and Technology, University of Nigeria, Enugu Campus

Voluntary nature of participation: Subjects participation in this study is entirely voluntary. You have the right to withdraw consent and discontinue participation in the study at any given time

Study procedure: I am carrying out a study on Assessing Knowledge, Practice And Factors That Influence Birth Preparedness And Complication Readiness Among Couples In Selected Rural Communities In Enugu State. In this study you will be required to fill the questionnaire. Please feel free to ask for clarification on any question you do not understand.

Risk: The process of filling the questionnaire will not cause you any harm or injury

Confidentiality: Please note that information you give will be kept confidential and your name will never be used in connection with any information you give.

Feedback: in case of any clarification you can contact me on 08037467734.

Response: The study has been explained to me and I finally understand the consent of the study process. I will be willing to participate in the study described above.

í í í í í í í í í .
Signature of participant

í í í í í í í í í .
Signature of witness

í í í í í í í í í .
Signature of researcher

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Date

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