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# KNOWLEDGE OF OBSTETRIC DANGER SIGNS AMONG WOMEN OF CHILD-BEARING AGE IN THE RURAL COMMUNITIES OF CROSS RIVER STATE, NIGERIA.

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**ABSTRACT**

Maternal mortality and morbidity remains a huge health problem in Nigeria, this problem is more in the rural communities of Nigeria. Pregnancy if not well-managed could lead to obstetric dangers, and obstetric dangers if not well-managed could lead to maternal health complications and death. This study explores the knowledge and understanding of obstetric danger signs among women of child-bearing age (pregnant women and new mothers), in rural communities of Cross River State, Nigeria. The study was conducted using a qualitative descriptive approach that applied semi-structured interviews. Akpabuyo Local Government Area (LGA), one of 18 LGAs that make up Cross River State, Nigeria was used as study area. Non-probability sampling known as purposive sampling was used. The aim was to choose participants who will most benefit the study in terms of data gathering. Qualitative data analysis which involved data reduction, organisation and subsequent interpretation was done from which themes emerged. The study revealed limited knowledge regarding obstetric danger signs and the importance of hospital delivery among the rural women of the study communities. Based on these findings, recommendations made included the need for collaboration between the rural communities and nurses/midwives and other healthcare professionals, for the purpose of engaging the community to achieve the sensitisation and health education of rural women, their families and the entire community on obstetric dangers for early recognition, importance of utilising skilled care during pregnancy, delivery and postpartum for early intervention, and the hazards of home delivery, among others, thus bringing about prevention or reduction of maternal health complications and death in the rural communities.

**Keywords:** Knowledge, Obstetric Danger Sign, Maternal Health Complications, Women Of Childbearing Age, Rural Communities, Qualitative Descriptive Approach.

## Introduction

Around the world the birth of a baby is a major reason for celebration and societies expect women to bear children and honour them for their role as mothers. Yet, pregnancy and childbirth is a very dangerous journey in most of the developing countries (Ransom & Yinger, 2002). The majority of Nigerian people (women) live in rural areas where the burden of reproductive ill health is higher. The high levels of maternal morbidity and mortality that are prevalent throughout the developing world, and indeed Nigeria, are as a result of many factors, including complexities of problem recognition and decision-making during emergencies leading to delayed actions, and the acute impact of this is borne more by the rural communities (Gill, 2007). Every pregnancy faces risk, and prenatal screening may not even detect which pregnancy will develop complications (Abouzahr & Wardlaw, 2001). It is thus essential for women to have access to skilled attendants and instructors during pregnancy, delivery, and after delivery, and prompt adequate care and instructions for obstetric complications if the goal of reducing maternal morbidity and mortality must be achieved (Graham, Bell & Bullough, 2001).

Each year over half a million women die as a result of complications related to pregnancy and childbirth and the vast majority of these deaths are preventable. While women in developed countries have only a 1:2,800 chance of dying in childbirth, women in Africa have a 1:20 chance with the lifetime risk greater than 1:10 (Freedman, 2005). According to the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA) and the World Bank (2006), maternal mortality is a major public health problem in sub-Saharan Africa, where half (50.4%) of all maternal deaths occur, and the marginalised poor and rural women are the groups that are most affected. Improving maternal mortality has received recognition globally as is evidenced by the inclusion of its reduction by 75% between 1990 and 2015 in the Millennium Development Goals (MDG) (United Nations, 2004).

Nigeria contributes approximately 10% of the global burden of maternal and child deaths and thus has one of the worst maternal health outcomes (UNICEF, 2008). The World Health Organisation ranked Nigeria as having the second highest number of maternal deaths in the world, with an estimated 37,000 maternal deaths (WHO, 2004). Nigeria is one of few countries where the maternal mortality ratio (MMR) has almost doubled in the 1990-2008 figures (Hogan, Foreman & Naghavi, 2010). In the rural areas, the MMR is very high as the majority of births take place at home unassisted and or assisted by unskilled persons, thus women who develop complications rarely receive emergency services (Osubor, Fatusi & Chiwuzie, 2006).

All pregnant women face the risk of obstetric complications and even orthodox prenatal screening does not identify all of the women who will develop complications. How much more a situation where the women have limited or no access to the orthodox care as experienced in the rural communities of Nigeria? The risks are obviously greater. Obstetric danger signs refer to the common, easily recognizable signs (even by a nonmedical personnel), of serious complications during

pregnancy, childbirth, and postpartum. It is used interchangeably with maternal health complications in this study. The three most common key danger signs during pregnancy include severe vaginal bleeding, swollen hands/face, and blurred vision. Major danger signs during labour and childbirth include severe vaginal bleeding, prolonged labour (>12 hours), convulsions, and retained placenta. Major danger signs during the postpartum period include severe vaginal bleeding, foul-smelling vaginal discharge, and fever (JHPIEGO, 2004). Receiving instruction and care from a skilled provider (doctor/nurse/midwife) before and during childbirth has been identified as one of the most important strategies for increasing the knowledge of women about these dangers, and thereby mitigating the risks attached.

## Statement of the problem

Pregnancy-related poor maternal health and maternal death are still major problems in sub-Saharan Africa and it is assumed that most of these cases can be prevented when births are assisted by Skilled Birth Attendants (SBAs). The occurrence of high maternal mortality ratio is evidenced in Nigeria as a country, and Cross River State in particular, and this problem is more pronounced in the rural areas causing an untold hardship and a huge source of grief to families and communities whenever it occurs. In Cross River State, Nigeria, only 34,890 of women attend labour by skilled attendants while the majority deliver at home, the situation as revealed in a study by Archibong & Agan (2010), is worse in the rural communities. This contributes to the high ratio of maternal mortality, currently being 1,513.4:100,000 live births in the state (Archibong & Agan, 2010). Despite some interventions by the federal and state governments, such as free maternal and child healthcare services and the National Midwives Service Scheme (NMSS), the majority of the women do not use these services (Ekanem et al., 2005). Findings from the same study showed that most women are aware of the existing healthcare facilities and the free services within their locations, yet they do not appear to be interested in utilising them. Study by Ekabua, Ekabua, Odusolv, Agan, Iklaki and Etokidem (2011) identified lack of information on obstetric warning signs, birth Preparedness, complication readiness, among the factors that cause delays in seeking appropriate care, thereby hampering the abilities of rural women to participate fully in safe motherhood initiatives.

Good knowledge of danger signs means that the predictable elements of the three phases of delay can be anticipated and prepared for with a birth plan for each pregnancy (Agarwal, Sethi, Srivastava, Jha & Baqui, 2010). It was hypothesised that the implementation of Birth Preparedness/Complication Readiness concepts that focus on individual, families, and communities could reduce at least the first two phases of delay (Ekabua, Ekabua, Odusolu, Agan, Iklaki & Etokidem, 2011). Ronsman and Graham (2006), observed that targeting of interventions to the most vulnerable rural populations and poor people is essential if substantial progress is to be achieved in the reduction of maternal morbidity and mortality by 2015. In support of this, Fullerton, Killian & Gass (2005), emphasised that increasing use of skilled services through women and community education on recognition of danger signs and early intervention has been identified as a key link towards improving maternal health through addressing the delays in seeking care and reaching health facilities.

As a way to contribute solution to this felt need of rural communities and society at large, it is needful to explore the knowledge of obstetric danger signs among women of child-bearing age in rural communities of Cross River State, Nigeria. If the state of knowledge of obstetric danger signs among women of child-bearing age in rural communities could be ascertained, the information gotten could be harnessed in the fight to prevent or bring about a reduction in the maternal/child morbidity and mortality to the barest minimum in the rural communities of Cross River State and in Nigeria at large.

## Aim of the study

The objective of this study is to understand the current situation in the rural communities of Cross River State as regards the knowledge of obstetric danger signs among women of child-bearing age (pregnant and new mothers) in the rural communities of Cross River State.

## Objective of the study

This study specifically sought to explore the knowledge gap and the understanding of women of child-bearing age (pregnant and new mothers) of obstetric danger signs in the rural communities of Cross River State.

## Research question

The following research questions were used to guide the study:

- What are the signs/symptoms that are considered to be dangerous during pregnancy, delivery, and after delivery?
- What is the importance of being attended to by skilled healthcare providers during pregnancy, labour, and after delivery?
- What are the dangers of home delivery?

## Literature Review

Obstetric danger signs is the common, easily recognizable signs (even by a non-medical personnel), of serious complications during pregnancy, childbirth and postpartum. According to JHPIEGO, (2004), the three most common key danger signs during pregnancy include severe vaginal bleeding, swollen hands/face, and blurred vision. Major danger signs during labour and childbirth include, severe vaginal bleeding, prolonged labour (>12 hours), convulsions and retained placenta. Major danger signs during the postpartum period include, severe vaginal bleeding, foul-smelling vaginal discharge and fever. Stevens (2000) stated that when women, their partners, and their communities are knowledgeable about the obstetric danger signs, they are likely to seek appropriate care from skilled providers timeously.

## Maternal mortality in Nigeria in relation to obstetric dangers

Nigeria has one of the highest maternal mortality ratios (MMR) in the developing world (Ujah, Aisien, Mutihir, Vanderjagt, Glew & Uguru, 2005). Nigeria's maternal mortality indices are second to that of India, and maternal mortality is a critical indicator of maternal health and well-being in any country

(Idowu, Osinaike & Ajayi, 2011). In 2000, the United Nations adopted the Millennium Declaration and the MGDs as a framework for comprehensive development. Hence, the task of improving women's health is one of the most important development issues facing Nigeria. According to USAID (2008), in Africa the MDGs in maternal health cannot be met without significant improvement in the health status of Nigeria's women.

Official statistics reveal that Nigeria is the most populous country in Africa, with an estimated population of 129 million as at mid-2002. Nigeria is a multicultural society with over 300 ethnic groups, each with its cultural and traditional peculiarities and diversity (Idowu, Osinaike & Ajayi, 2011). According to Adegoke, Lawoyin, Ogundeji & Thomson, (2007), Nigeria bears a high burden of MMR, currently estimated at 800:100,000 live births. Several studies that have attempted to determine maternal death rates in Nigeria uniformly show high national levels, large urban-rural disparities, and wide variations across geographic regions (Shiffman & Okonofua, 2006). The National Planning Commission (NPLC) (2004) highlights the leading biomedical causes of maternal mortality as haemorrhage, sepsis, unsafe abortion, anaemia, malaria, toxaemia, and caphalo-pelvic disproportion.

Additionally, the quality of maternal healthcare facilities in Nigeria is poor (Idowu, Osinaike & Ajayi, 2011). NPLC, (2004), submits that approximately two-thirds of all Nigerian women and three-quarters of rural Nigerian women deliver outside of health facilities and without skilled attendance. However, the WHO's ranking of Nigeria's healthcare system performance as one of the worst in the world in 2000 has prompted a major health sector reform plan now being supported by the World Bank, the African Development Bank, and DFID assistance (WHO, 2005).

In Nigeria, maternal mortality indices vary across regions, cultures, and settings, with the worst statistics recorded in remote rural communities. The MMR in northern Nigeria is among the worst in the country, and indeed the world, with over 1,000:100,000 live births in 2008, with a very low level and quality of maternity services. Doctor, Findley, Ager, Cometto, Afenyachs, Adamu, and Green's (2009) study revealed that only 26% of the women out of 6,882 women surveyed received antenatal care, and only 1,390 delivered in a facility with a SBA for their most recent pregnancy. The same source reported that most women had little or no contact with the healthcare system for reasons of custom, lack of perceived need, distance, lack of transport, and lack of permission (Doctor et al., 2009). According to these authors, the findings indicated that social influence is important in encouraging women to seek both antenatal and delivery care. They therefore recommended that information about birth preparations and recognising and knowing how to respond to danger signs could be integrated into the local social networks and groups, such as village women committees, since the study's findings exposed the fact that "women who made at least one kind of preparation for birth were more likely to deliver with a skilled attendant" (Doctor et al., 2009). Birth preparation and Complication readiness are important component of antenatal care and should be part of community based information networks to promote birth planning and preparation among all women (Onayade, Akanbi, Okunola, Oyeniyi, Togu, and Sule, 2010). A community study of maternal mortality in south western Nigeria (Ibadan) using the indirect sisterhood method developed by (Graham, Bell, and Bullough, 2001), for developing countries, revealed a high incidence of maternal mortality with a MMR of 7,778:100,000 live births (Adegeke, Campbell, Ogudefi, Lawoyin & Thomson, 2013). Women in Ibadan were dying more from pregnancy-related complications than from any other causes (Adegeke, Campbell, Ogudefi, Lawoyin & Thomson, 2013). Maternal death rates in Sagamu, Nigeria were 103 maternal deaths out of 5320 deliveries over a 10-year period (1988-1997) (Sule-Odu, 2000). This gives a MMR of 1,936:100,000, where 86.4% of the deaths were due to obstetric complication causes, 10.7% were attributed to septic abortion, ruptured uteri (28.2%), eclampsia (12.6%), postpartum haemorrhage (12.6%), and puerperal sepsis (10.7%) (Sule-Odu, 2000).

An analysis on patterns of maternal deaths in a voluntary Agency Hospital in Abeokuta, Nigeria, revealed an overall high Maternal Mortality Ratio as related to preventable causes of haemorrhage, sepsis, anaemia, obstructed labour and eclampsia (Ariba, Inem, Biersack, Aina, Ayankogbe, & Adetoro, 2005). Likewise, in north-central Nigeria, a 17-year review of maternal mortality trends before and after the launch of the Safe Motherhood initiative in Nigeria conducted in University Teaching Hospital, Jos, revealed a high MMR of 740:100,000 in total deliveries (Ujah, Aisien, Mutihir, vanderjagt, Glew & Uguru, 2005). The greatest risk was recorded among young teenagers below 15 years and older women over 40 years who were either unbooked or illiterates and the direct causes of death were haemorrhage, (34.6%), sepsis (28.3%), eclampsia (23.6%), and unsafe abortion (9.6%) (Ujah, Aisien, Mutihir, vanderjagt, Glew & Uguru, 2005).

In Anambra state, the services of traditional and local "reproductive health experts" are preferred and sought by women during pregnancy and birth (Izugbara & Afangideh, 2005). Such experts include family members, herbalists, spiritual leaders, and TBAs (NPC & ORC Macro, 2004). Reasons advanced for this preference by Igbo women were because they want privacy and cheaper services (Izugbara & Agangideh, 2005). Additionally, beliefs in mystical forces (for example, complications may be regarded as consequences of committing abominable acts) and the supernatural aetiology of certain reproductive problems could also explain women's preferences for traditional attendants (Izugbara & Agangideh, 2005). "The intersection of lower educational levels with cultural and religious beliefs, the highly fertility rate, and a high level of maternal complications in the region of poor obstetric outcomes is associated with both lack of financial resources to access and utilisation of maternal health services and lack of prenatal care" (Filippi, Ronsmans, Campbell, Graham, Mill, Borghi & Osrin, 2006).

It is estimated that about 37% of Nigerian pregnant women do not access prenatal visits, and 47% have four or more visits during pregncies (NPC and OPC Macro, 2004). Such inconsistencies in the utilisation of antenatal services increase maternal morbidity and mortality (NPC and OPC Macro, 2004). Cultural and familiar factors deter women from timely access to obstetric care and predispose them to risks of complications (Koblinsky, Matthews, Hussein, Mavalankar,

Mridha, Anwar & Van-lerberhe, 2006).

## Maternal morbidity and mortality in Cross River State

Cross River State is a state in the Niger Delta region of Nigeria. The state covers a large area with a very difficult geographic terrain. It has a population of about 3,155,932 people, with a population growth rate of 2.9990, and 45.5% of the population are rural dwellers and about 22% is of the reproductive age (15-19 years) (National Population Census, 2009).

Available data for Cross River state shows that "the MMR is 831:100,000 live births" (Agan, Archibong, Ekabua, Ekanem, Abeshi, Edentekhe & Bassey, 2010). Accordingly, the very poor maternal health indices in the Cross River State has been attributed to poor antenatal, intra-natal and postnatal practices and to various socio-economic factors which expose women to adverse maternal health outcomes (Agan, Archibong, Ekabua, Ekanem, Abeshi, Edentekhe & Bassey, 2010). The fact remains that most of the deaths are preventable by simple, affordable and available interventions as well as attitudinal change, but the circumstances under which women become pregnant and deliver babies in the state remain a huge challenge as posit by (Archibong & Agan, 2010).

Apart from the common medical causes of death which include obstetric haemorrhage, eclampsia, sepsis, prolonged/obstructed labour, unsafe abortion, malaria and anaemia in pregnancy, HIV/AIDs in pregnancy and anaesthetic causes, social causes of maternal deaths include delayed referrals (Society of Gynaecology and Obstetrics of Nigeria, 2004). Same authors posits that, this problem is worsened by the activities of Pentecostal churches and "faith healers" who now conduct deliverances of their members in their churches (Society of Gynaecology and Obstetrics of Nigeria, 2004). "Faith healers have spiritual explanations for all normal and abnormal physiological and structural states, particularly in relation to pregnancy and labour and this contribute immensely to antenatal defaulting as well as negative perceptions about medical care" (Society of Gynaecology and Obstetrics of Nigeria (2004). Most of these churches manage emergency obstetric cases, only to send them to the hospital to die when they are moribund, thus spiritual belief of people of Cross River State has a serious impact on their health-seeking behaviour (Society of Gynaecology and Obstetrics of Nigeria, 2004).

An analysis of clinical data desk reviews of published and unpublished material and interviews with policy-makers and service providers conducted by (Archibong & Agan, 2010), revealed that "although 75.6% of pregnant women in the state attend at least one antenatal visit, only 34.8% are attended to by skilled birth attendants when they are in labour"(Archibong & Agan, 2010). The same authors noted that the review of hospital-based maternal mortality rate in the Cross River State over an 11-year period (1999-2009) averaged 1,513.4:100,000 live births, with a types III delay being the leading social cause of death and 73.2% of these deaths resulted from cases referred by the rural communities (Agan et al., 2010).

## Risk Periods of Maternal Mortality

Findings from a study by Hurt and Ronsmans (2002), revealed that most maternal deaths seem to occur between the third trimester and the first week after delivery. In support of this, data from Matlab, Bangladesh shows that maternal mortality rates are more than 100 times higher on the first day after birth and 30 times higher on the second day after birth and these findings provide strong support for strategising professional care during pregnancy, delivery, and post-delivery (Hurt & Ronsmans, 2002).

Women remain at increased risk of death for some time after childbirth thus maternal deaths have conventionally been defined as those occurring up to 42 days postpartum (Pradhan, West & Katz, 2002). Recently a new category has been proposed to include late deaths up to one year postpartum as there is evidence that risk of death is increased for up to six months postpartum (Hurt & Ronsmans, 2002). Mortality rates can also be especially high after an abortion or still-birth (Hoj, da Silva, Hedegard, Sandstrom & Aaby, 2003). In Bangladesh, for example, pregnancies ending as abortions or stillbirths accounted for more than half of maternal deaths within the first week after the end of the pregnancy, and 50% within the first six weeks according to (Hurt & Ronsman, 2002). This data has implications for the timing of postpartum care and the duration that women should routinely have access to skilled care after birth (Hurt & Ronsman, 2002).

## Barriers to uptake of maternal healthcare services in rural communities General barriers

Personal factors, such as lack of knowledge of a condition and its consequences, are associated with a person's denial of symptoms pointing to a condition, and of people often trying to manage the symptoms rather than accessing appropriate health services (Tod, 2001 & Lavender, 2007). Furthermore, it was noted that in most community studies, social and cultural norms and attitudes of particular communities are strongly related to personal factors, since the attitudes and patterns of coping are community specific (Tod, 2001 & Tran, 2008).

Low levels of knowledge and awareness of risk factors, causes, and treatment for given conditions was observed among those failing to take up services (Tod, 2001). Likewise, problems that communities encounter in trying to obtain information in their own language also limits knowledge about particular conditions and the services available to them. The same source indicated that knowledge might be a contributor to behavioural change (New, 2006).

The fit among personal, social, cultural, economic, and system-related factors can promote access to primary health care services among individuals, families, and communities to have a timely, needed, continuous, and satisfactory health service (Blomfield & Cayton, 2009). The above suggests that to address these barriers people need to be reached where they already are, and engaged with in an attempt to change the norms and attributes that lead to low uptake of service (Ansari, 2007).

## Knowledge of obstetric danger signs and the concept of three phase delay

Almost 90% of maternal deaths occur in developing countries (Carroli, Rooney & Villar, 2001), and while many women die because they do not receive the appropriate medical care, a significant percentage die because they do not access that

care fast enough (Carroli, Rooney & Villar, 2001). In most cases this is due to the fact that pregnant women, their families, and the community in general do not know about the danger signs and symptoms that occur during pregnancy, labour, or the puerperium (Carroli, Rooney & Villar, 2001). Delays by women with obstetric complications in reaching and accessing care are the main cause of maternal mortality (Kabakyenga, Ostergren, Turyakira & Peterson, 2012).

A three delay model was presented by Thaddeus and Maine (1994) to explain the chain of factors responsible for the high maternal morbidities and mortalities in low-income countries (Figure 1) (Thaddeus & Maine.1994). The first delay is by the individual, the family, or both, in making a decision to seek care (Delay I), and is due to socio-economic or cultural factors, which include women's status, decision-making, poor understanding of complications and risk factors in pregnancy, previous poor experience of healthcare, acceptance of maternal death, and financial implications (Thaddeus & Maine.1994). The second delay is occasioned by women failing to reach the healthcare faculties due to physical accessibility, cost of transportation, adverse road conditions, mountainous terrains, and rivers (Delay II), and the third delay is when women take time to receive appropriate and adequate care once they reach the health faculty due to poor facilities, lack of medical supplies, inadequately trained staff, poorly motivated supplies, and inadequate referral systems (delay III) (Thaddeus & Maine, 1994). Good knowledge of danger signs means that the predictable elements of the three phases of delay can be anticipated and prepared for with a birth plan for each pregnancy (Agarwal, Sethi, Srivastava, Jha & Baqui, 2010).

Gabrysch and Campbell (2009) have used the three phase delays model in their review report to group the determinants of delivery service use into sociocultural, perceived need, and economic and physical accessibility (Gabrysch & Campbell, 2009). Accordingly, Kabakyenga (2012) noted that studies on women's autonomy (which is a socio-cultural factor), and health knowledge (which is the perceived need group) have produced mixed results across populations both within and across countries regarding the use of maternal healthcare in relation to funding and the organisation of health services (Say & Raine, 2007). Therefore, the authors recommended that, there is a dire need for context-specific studies to help design interventions to reduce the three delays and consequently reduce maternal morbidity and mortality (Say & Raine, 2007).

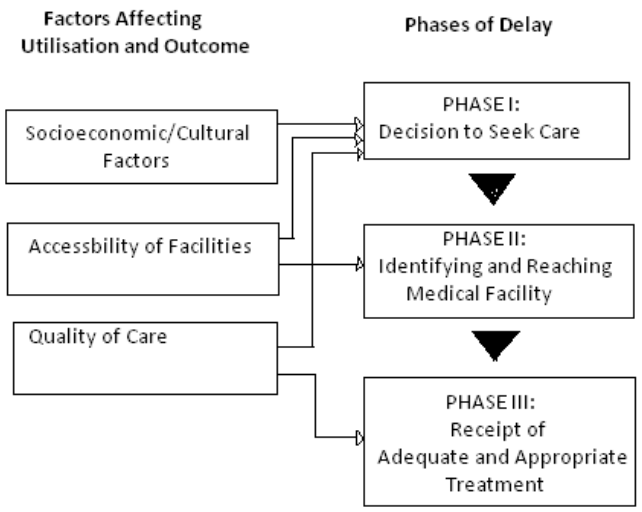


**FIGURE 1: Three Delays Model**

Source: Thaddeus and Maine (1994)

## Impacts of health education and counselling on knowledge of obstetric danger signs

Health education is a process of impacting knowledge on health-related issues whether by skilled or unskilled personnel, and health education is usually provided through Ante natal care (ANC) services Ensor, Quigley, Green, Badru, Kaluba, & Siziya, (2013). Same authors observed that findings from various studies have revealed an association between knowledge and use of delivery and ante natal care services (Ensor, et al., 2013). As suggested by studies in other countries such as India, increasing contacts through ANC with skilled healthcare providers appears to increase the likelihood of later use of facility for delivery (Mishra & Retherford, 2008), while ANC provided at home by unskilled personnel appears to reinforce home delivery (Ensor, et al., 2013). Therefore, health education from skilled ANC has a positive influence on knowledge of obstetric danger signs, birth preparedness and complication readiness, that enhance the use services particularly in remote areas (Yanagisawa, Oum, & Wakai, 2006). In accord, Pembe, Urassa, Carlstedt, Lindmark & Nystrom (2009) submits that health education provides an opportunity to inform women about the signs of obstetric complications, birth preparedness, complication readiness, and cost of services and means of transport in emergencies which are important in preventing maternal mortality. In developing countries like Nigeria, routine prenatal visits is the best time for improving women's knowledge about these signs (Perreira, Bailey, deBocaletti, 2002).

Studies conducted in sub-Saharan countries report low rates of birth-preparedness (Hiluf & Fantahun, 2007; Moran et al., 2007; Mutiso et al., 2008; Hailu et al., 2011). High levels of Birth Preparedness have been shown to be strongly associated with increased levels of use of Skilled Birth Attendants (Moran et al., 2007; Mutiso, Qureshi & Kinuthia, 2008; Hailu, Gebremariam, Alemseged & Deribe, 2011). Studies in low-income countries show that knowledge of obstetric danger signs among women, especially during pregnancy and delivery is deficient (Pembe, Urassa, Carlstedt, Lindmark & Nystrom, 2009; Hasan & Nisar, 2002). Information, education, and

counselling play vital roles in prevention of maternal death and this could be achieved by making the pregnant women (and their partners) aware of the consequences of late recognition of danger signs, delays in seeking care, and delays in receiving prompt care (Ronsmans & Filippi, 2004). These could be achieved through appropriate health literacy programme or behavioural change communication (Ronsmans & Filippi, 2004). Optimal management of pregnancy, labour, and childbirth ensures maternal survival by ensuring that pregnant women (as well as women in labour and their newborns) have access to life-saving interventions for managing obstetric and newborn complications (Ronsmans & Filippi, 2004).

Where care is unavailable at a Primary Health Care level, mothers are referred to a secondary or tertiary facility where care may be obtained and this process can leads to delays in receiving prompt, appropriate care which may be worsened by failure to recognise the need to refer the mother in time, unavailability of transport, failure to meet transport costs, or absence of someone to accompany the referred patient (Kakaire, Kaye & Osinde, 2011). Once the birth plan is implemented, it is critical in addressing the first and second of the three delays to receive prompt care during pregnancy and childbirth complications (Kakaire, Kaye & Osinde, 2011). Their findings are in alignment with other authors such as Adisasmita, Deviany, Nandiaty, Stanton & Ronsmans, (2008) and Oladapo, Sule-Odu, Olatunji, and Daniel, (2005), who observed that many patients are referred when they already have life-threatening complications which is a reflection of the quality of antenatal care at peripheral units (where such complications may be identified early), the quality of obstetric care at the referring units, and the efficiency of the referral system (Adisasmita, Deviany, Nandiaty, Stanton & Ronsmans, 2008; Oladapo, Sule-Odu, Olatunji, & Daniel, 2005).

Also the finding that many of the referrals were in critical condition at admission suggests possible delays in the course of decision to refer, delays in reaching the referral hospital, or poor quality of care at the referring health facility which may be as a result of diagnostic delays and misdiagnoses due to poor knowledge (Filippi, Ganaba, Baggaley, Marshall, Storeng & Sombie, 2007; Onwudiegwu & Ezechi, 2001).

In a study from Nigeria, 61% of the pregnant women studied made adequate preparations for delivery while only 4.8% were prepared for emergencies or complications (Onayade et al., 2010). The authors thus recommended that greater emphasis should be placed on education regarding danger signs, emergency/complication readiness during antenatal care (Onayade et al., 2010).

A study in Kenya revealed that "87.3% of the respondents were aware of their expected date of delivery, 84.3% had set aside funds for transport to hospital during labour, while 62.9% had funds for emergencies. 67% knew at least one danger sign in pregnancy, while only 6.9% knew of three or more danger signs" (Mutiso et al. 2008). Similarly, men who had obtained knowledge of ANC services from a health worker, and those whose spouses utilised skilled delivery during their last pregnancy were more likely to accompany their spouses at ANC facilities (Tweheyo, et al., 2010). Studies submit that some antenatal counselling messages about birth preparations and recognising and knowing how to respond to danger signs could be integrated into the local social networks and groups, such as village women's committees, as women who made at least one kind of preparation for their baby's birth were more likely to deliver with a nurse-midwife (Doctor, et al., 2012).

## Impacts of maternal health literacy on knowledge of obstetric danger signs

According to Nutbeam (2008), the conceptualisation of health literacy as an asset focuses on the development of skills and capacities intended to enable people to exert greater control over their health and the factors that shape health. These include more personal forms of communication and community-based educational outreach. Not surprisingly, low literacy in a population is associated both directly and indirectly with a range of poor health outcomes (Parker, 2000).

The Institute of Medicine (2004) defines health literacy as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. The institute's definition goes on to recognise the social context of health decision-making, based on the interaction of the individual's skills with health contexts and broad social and cultural factors at home, at work, and in the community. This conceptualisation of health literacy as a set of capacities also implies that health literacy is partly knowledge-based, and may be developed through educational intervention. It also emphasises that health literacy is context-specific and subject to influence by healthcare interactions and structures, such as the way in which services are organised and delivered.

WHO has also adopted a broader definition of health literacy that reflects a health promotion orientation and views health literacy as representing the cognitive and social skills that determine the motivation and ability of individuals to gain access to, understand, and use information in ways that promote and maintain good health (Nutbeam, 2000). The WHO's definition implies the achievement of a level of knowledge, personal skills, and confidence to take action to improve personal and community health by changing personal life styles and living conditions (Nutbeam, 2008). Thus, health literacy means more than being able to read pamphlets and make appointments. By improving people's access to health information and their capacity to use it effectively, health literacy is critical to empowerment (Nutbeam,1998; 2008).

This understanding of health literacy identifies it as a distinct concept rather than a derivative one, thus, people who have better developed health literacy will thus have skills and capabilities that enable them to engage in a range of health enhancing actions, including personal behaviours (Nutbeam, 2008), as well as social actions for health and the capability of influencing others towards healthy decisions, such as participating in preventive screening programs or utilising healthcare facilities for skilled care (Department of Education and Skills, 2006; DeWalt, Berkman, Sheridan, Lohr & Pignone, 2004). The result is not only improved health outcomes but also a wider range of options and opportunities for health (DeWalt, Boone & Pignone, 2007). Improving health literacy in a population involves more than the transmission of health information, although that remains the fundamental task (Nutbeam, 2008). Helping people to develop confidence to act

on that knowledge and the ability to work with and support others will best be achieved through more personal forms of communication, and through community-based education outreach, if the goal of promoting greater independence in health decision-making and empowerment among the individuals and communities is to be achieved (Nutbeam, 2008).

### Knowledge of obstetric danger sign as a vital component of Birth Preparedness and Complication Readiness

According to John Hopkins Program for International Education in Gynaecology and Obstetrics [JHPIGO], (2001), birth preparedness (BP) and complication readiness (CR) are two interventions that address the delays in seeking skilled maternal care, by encouraging pregnant women, their families, and communities to effectively plan for births and deal with emergencies, if they occur (JHPIEGO,2001). These concepts include identifying a trained birth attendant for delivery, identifying a health facility in the case of emergency, arranging for transport for delivery and/or an obstetric emergency, and saving money for delivery (JHPIGO, 2001).

The presence of a skilled birth attendant at delivery is recognised as essential to preventing maternal mortality according to (WHO, 2001; WHO, 2004). A strategy to reduce the three phase delays should begin at the community level and be linked to improving access to basic essential obstetric care (White Ribbon Alliance for Safe Mother/India 2002; WHO, 2004; Mother Care Matters, 2000). There is no universal definition of birth preparation but many packages addressing this includes preparedness for normal birth by selecting a skilled birth attendant (SBA) and a place of delivery, preparedness of essential items for delivery, such as clean delivery-kit, knowledge of danger signs for mother and newborn, and when to seek help, knowledge of where and to whom to go to for help, arranging access to funds and means for emergency transportation to medical care and prior identification of blood donors (JHPIEGO, 2004).

In Nepal, a Birth Preparedness Index (BPI) originally developed by the SUMATA Project was used to measure the results of various Birth Preparedness programme related efforts (McPherson et al., 2006). The BPI is comprised of seven concepts that measure different aspects of the Birth Preparedness process and the percentage is calculated at the level of the individual responses regarding her most recent pregnancy/delivery to cover the number of antenatal care received from a skilled provider, ability to name prolonged labour as a danger sign during delivery, named excessive bleeding as a danger sign during delivery, made financial preparedness for emergencies during pregnancy, made preparedness for emergency transportation during pregnancy, delivery attended by an Skilled Birth Attendant, and received postnatal care within six weeks of delivery (Russel et al., 2004). While the study commended Birth Preparedness programmes as positively impacting on household-level behaviour, birth-planning, and promote the utilization of maternal health services, it also found that the influence of exposure to the BPP materials may differ depending on the message (Russel et al., 2004).

In Siraha the low use of skill birth attendants (SBAs) was traced to women's faith in a traditional delivery services that views delivery as a natural event which should take place at home (Borghi, Ensor, Neupans & Tiuari, 2006; Griffiths & Stephenson, 2001). Additionally, many women view modern health services and SBAs as a "last resort", to be used only when complications develops (Borghi et al., 2006; Griffiths & Stephenson, 2001). Furthermore, studies in South Asia supports the fact that the high cost associated with emergency transport and health services is a deterrent to the use of services (Borghi et al., 2006; Griffiths & Stephenson, 2001).

Sibley et al., (2005) recommends that any community-based programme that seeks to address the first phase delay must go not only dwell on merely increasing household members' knowledge of danger signs, but must also focus on changing household perceptions regarding the susceptibility of mothers and newborns during delivery and the post-partum period, thus limiting the second phase delay (Sibley et al., 2005). In a similar study on Birth Preparedness and Complication Readiness among slim women in Indore city, India, findings highlighted that maternal literacy and the access to antenatal services were important predictors of Birth Preparedness and Complication Readiness and was positively associated with Skilled Birth Attendance (Agarwal, Sethi, Srivastava, Jha, & Baqui, 2010). These findings reinforced the widely-held notion that Birth Preparedness and Complication Readiness should be promoted during pregnancy in settings where home deliveries are common (JHPIEGO, 2001). The same study suggested that while improving knowledge and helping mothers to prepare for birth and emergences is important, efforts are also required to address the barriers that hinder skilled birth attendance and the use of health facilities for delivery (Agarwal, 2004).

## Methodology

### Study Approach

The study was conducted using a qualitative descriptive approach that utilised semi-structured interviews. Using a qualitative approach results in the investigation of phenomena typically in an in-depth and holistic fashion (Polit & Beck, 2012:739), and the investigations are conducted without the manipulation of the researcher. Qualitative research is concerned with a subjective exploration of reality from the perspective of the person experiencing the phenomenon (Fouché & Schurink, 2012). It is based on a naturalistic inquiry, which implies that the experiences of the participants and their interpretation thereof will be studied in their natural state (Patton, 2002). In this study the researcher using the qualitative approach method is able to explain the relationships between the social, cultural, political, physical environments, and the individual by analysing the stories they tell (Parse, 2001). The research delves in-depth into the complexities and the process of the participants' real life experiences (Creswell, 2007) and is designed to provide a complete and accurate description of a particular situation, social setting, or relationship (Schurink & Fouche in De Vos, 2011).

### Study Area

The Akpabuyo Local Government Area (LGA) is one of 18 LGAs that make up Cross River State, Nigeria. It was created out of the former Odukpani LGA on the 27th Day of August

1991 as the 14th LGA in Cross River State, and the 589th LGA in Nigeria. The wet season is experienced from March until October. November marks the beginning of the dry season with December and January as the driest months. The wet season is far longer than the dry season by a ratio of 2:1. Akpabuyo is predominantly an Efik migration and expansion area. Efik rural areas or plantations cover the whole hinterland.

The Akpabuyo LGA is bounded by Calabar Municipality and the Calabar South LGA to the west, Akamkpa LGA in the north, Bakassi LGA in the south, and an international boundary with the Republic of Cameroun on the east. Akpabuyo is situated between latitude 4.47'N and 5.00'N and longitude 8.25E and 8.37E. It is a territory harnessed by a series of river tributaries. The watershed tends to divide Akpabuyo into two parts, with villages lying on either side of the river to enjoy and exploit the economic benefits of the river. The ethnic groups are the Efiks, Quas, and Efuts, and over the years the Akpabuyo LGA has witnessed migrant settlers from the Anang- and Ibibio-speaking people of the present Akwa-Ibom State.

## Participants

The study included 20 purposively selected women of reproductive age who met the inclusion criteria of being pregnant at any given gestational age or women who have recently given birth (babies within 12 months of age). Women of non-reproductive age (below 15 years and above 49 years) were excluded. The participants comprised an equal number of participants (10) from each of the two communities under study (Idundu and Anyanghanse). Entry was gained into the community through the community women leaders who identified the participants in their communities based on the inclusion criteria for the study.

**TABLE 1**: Participants demographics

| Demographics | Idundu (Community A) (n=10) | Anyanghanse (Community B) (n=10) |
|---|---|---|
| **State:** Pregnant | 6 | 2 |
| New mothers | 4 | 8 |
| **Age:** 15-24 years | 5 | 3 |
| 25-34 years | 3 | 7 |
| 35-45 years | 2 | 0 |
| **Marrital Status:** | | |
| Single | 2 | 2 |
| Married | 8 | 7 |
| Widow | 0 | 1 |
| **Occupation:** House Wives | 3 | 2 |
| Farmers | 2 | 3 |
| Traders/Business | 3 | 5 |
| Workers | 2 | 0 |
| **Total** | 10 | 10 |

## Sampling

Non-probability sampling known as purposive sampling was used. This type of sampling is based on the judgment of the researcher (Brink, 2012:141). The aim of is to choose individuals who will most benefit the study. It was assumed that the selected participants (pregnant women and nursing mothers) having had pregnancy and/or delivery experiences will form a rich source of information to meet the focus of the study. The first step in the sampling was to purposively select two specific communities characterised by low use/patronage of orthodox medical care. The Akpabuyo Local Government Chairman was visited through the Primary Health Center (PHC) co-ordinator, for the purpose of obtaining permission for the study and intimating him of the study aims and objectives. Through the PHC Coordinator, the researcher was able to access the PHC facilities register to identify those communities that least utilise the Primary healthcare facilities for delivery. From there, the choice of the two communities under study (Idundu and Anyanganse) was made. The second step of the sampling process was to purposively select the participants. Visits to the clan heads of the two communities were made for their approval of the study. The clan heads introduced the community women leaders to the researchers, to assist in identifying the pregnant women and the new mothers in their communities for the study.

## Research instrument

Semi- structured interview was used to elicit information using an interview schedule. The interview schedule was developed using the guiding principles from Birth Preparedness /Complication Readiness matrix adapted into community Maternal and Newborn Health programmes (JHPIEGO, 2004), and questions were in sections to address the three phase delays to obtaining skilled care (Thaddeus & Maine, 1994).

## Data collection and analysis

The data collection process for this study was done in participants' homes. This venue is both private and allowed for the out of sight voice recording of the face-to-face interview. The interview was approximately 45 minutes to an hour long. Field note taking was done alongside therefore allowing for the highest possible reliability of data (Polit & Beck, 2012). Data was collected until data saturation was achieved; this means that both emergent themes developed and continued until no additional information was provided (Brink, 2012). The data was analysed using standard qualitative data analysis techniques.

## Qualitative data analysis

Data analysis involved data reduction, organisation and subsequent interpretation using themes (Burns & Grove 2003:479).The researcher translated and transcribed the tape-recorded interviews, then read and re-read the interviews in their entirety, reflecting on the interviews as a whole. Then, she summarised the interviews; keeping in mind that more than one theme might exist in a set of interviews. Once identified, the themes that appeared to be significant and concepts-linking were written down and entered on computer (Morse & Field, 1996).

In the data analysis process, the researcher used Tesch's proposed eight steps in data analysis:

(1) The researcher carefully read through all the transcriptions, making notes of ideas that came to mind.

(2) The researcher selected one interview and read it to try to get meaning in the information, writing down thoughts coming to mind.

(3) After going through the transcripts, the researcher arranged

the similar topics in groups by forming columns labelled major topics; unique topics; and leftovers.

(4) The researcher then abbreviated the topics as codes and wrote the codes next to the appropriate segment of the text. The researcher then observed the organisation of data to check if new categories or codes emerged.

(5) The researcher found the most descriptive wording for the topics and converted them into categories. The aim was to reduce the total list of categories by grouping topics together that relate to each other. Lines drawn between the categories indicated interrelationship of categories.

(6) A final decision was then made on the abbreviation of each category and the codes were arranged logically.

(7) The data material belonging to each category was put together in one place and preliminary analysis performed.

(8) Recoding of the data was done (de Vos, 2002; Bruce, 2010).

## Results

The following themes emerged based on the analysis of the data generated and transcriptions from the in-depth interviews: Participants had limited knowledge of obstetric danger signs; moderate knowledge on benefits of hospital care; and moderate knowledge of the dangers of home deliveries (Table 2).

**Table 2: Themes and sub-themes emerging from the study**

| Themes | Sub-themes |
|---|---|
| 1. Limited knowledge of obstetric danger signs | • Limited knowledge of obstetric dangers with knowledge of only a few danger signs<br>• Knowledge is centred on waiting at home for abnormal signs<br>• Knowledge is the role of the care giver |
| 2. Moderate knowledge of benefits of skilled care in hospitals/health Centres | • Some knowledge on the benefits of skilled health care<br>• Knowledge is influenced by previous experiences<br>• Role of hospital in providing and health education<br>• Recognition of importance of role of hospital to provide immunisation |
| 3.Moderate knowledge of dangers of home delivery | • Some awareness of TBA lack of knowledge and skills for emergency interventions;<br>• Lack of receiving immunisation for baby when attending a TBA<br>• The possibly unsanitary environment of home delivery |

### Theme 1: Limited knowledge of obstetric danger signs

Three sub-themes emerged from this theme, namely limited knowledge of obstetric dangers with knowledge of only a few danger signs; knowledge is centred on waiting at home for abnormal signs, and the rural women do not see it as their role to have knowledge of obstetric dangers.

*Limited knowledge of obstetric danger signs:* Contributions from the respondents indicated that women in rural communities have limited knowledge of obstetric danger signs and symptoms during pregnancy, delivery, or after delivery. Some of the women interviewed affirmed not knowing and being unable to mention any of the key danger signs.

*"I don't know!"*

*"I have no idea".*

About 12 out of the 20 respondents could mention only one or two correct signs and symptoms related to obstetric dangers. Among the key signs mentioned was bleeding, swollen legs (oedema), high fever, severe vomiting, paleness (anaemia), weakness, severe lower abdominal pain, liquid drainage, prolonged labour, and retained placenta though the words used to describe these dangers were often tacit and simplistic.

*"if she is not well sometimes water starts entering her, also she has to go to hospital or sometimes since she started pregnancy she has been sickly.".*

*"[The] problem was that since when that pregnancy started I was really sick, I was sick, real sick. Whatever I put in my mouth, I will vomit, It did me somehow, somehow in my body, was really sick".*

*"[W]hen it is time for me to born the baby, water used to come out first before, but in this particular child, it was blood that came out first, blood came out plenty that I said God what could cause this? I went and told somebody who advised me to come to the hospital, I was told that it was labour. So that particular sign made me to know that… that is not the normal kind of labour... Blood to come out because I have never seen before".*

*"I think those kind of signs that someone can see that can be bad signs during pregnancy… sometimes, one can notice bleeding … I think that is a bad sign or water coming out of a pregnant woman's body, she has to rush to see a doctor".*

*"Those signs that can occur that can take a woman's life are excessive profuse bleeding can occur, labour could start without the baby moving in the belly, labour can last up to one week. Those kinds of things can take one's life".*

*"One of the dangerous signs during pregnancy that can cause danger is bleeding from the body and if the bleeding should continue without doctor or whatever …it's miscarriage, then the second one is fever, as in when the person is having fever …fever comes up very strongly or she has lower abdominal pain or waist pain like that so there are bad signs. Then swelling of the face and legs also contribute".*

*"[W]hat I know myself is that if a woman is pregnant and she looks pale and her lips looks pale it shows that there is no blood and is something that she should go to the hospital".*

*Knowledge is centred on waiting at home for abnormal signs:* During the interviews it emerged strongly that the knowledge is centred round waiting at home until there is an abnormal or painful irritation at which time they then visit caregiver.

*"This one is not my first pregnancy the first one, it was in fact I suffered and before I put to birth they do operation. So I suffered then when I was in labour, it took me one week... I suffer, I cry! Then later on they took [referred] me to hospital. They said I should do operation".*

*Knowledge is the role of the caregivers:* One participants also felt that it was not her duty to know the danger signs since she was not a caregiver and that they would normally submit themselves to the professional examination of the caregivers.

*"I cannot know, I cannot know since I am not a TBA."*

## Discussion

Before a woman decides to seek care, it is important that she must be able to recognise the signs and symptoms that indicate the need for care; however this study found limited knowledge of obstetric danger signs among the rural women studied. This has been confirmed in other studies with similar populations as highlighted by Pembe, et al., (2009) and Hasan and Nisar's (2002) whose studies in low-income countries show that knowledge of obstetric danger signs among rural women in Nigeria was deficient. Kabakyenga, Ostergren, Turyakira & Peterson (2012) observed that the delay by women with obstetric complications in reaching and accessing care (Phase 1: delay in seeking care) is the main cause of maternal mortality. Women's autonomy and health knowledge regarding risk factors have been significantly associated with this "Phase 1 delay" (Kabakyenga et al, 2012).

Reasons for this low knowledge may be lack of educational opportunity leading to poor understanding of health-related issues. An explanation is also provided by Tod (2001) and Lavender (2007) who found in their study that low levels of knowledge and awareness about risk factors, causes, and treatment for given conditions were observed among those failing to take up services. Lavender (2007) believed that personal factors are associated with both personal denial of having a condition in the face of symptoms and often trying to manage the symptoms rather than accessing health services. New (2006), added that problems of communities to obtain information in their language could also limit knowledge about particular conditions and the services that are available to them thus contributing to this low knowledge.

An important reason identified with low knowledge of maternal health problems relate to the community's perceptions of the problems. Several studies in Nigeria have highlighted community members' perception and knowledge of maternal health problems and how this play an integral role in their care-seeking behaviour. Osubor, Falusi, & Chiwuzie's (2005) found that local beliefs, such as those that view pregnancy-related problems as being associated with witchcraft and other supernatural causes, deter women in seeking skilled maternal care in hospital/clinics. In addition, warning signs in pregnancy, such as bleeding episodes and swollen feet, were seen by some women as being normal in pregnancy and these opinions and folklore were likely to result in delays in seeking medical attention timeously (Osubor et al., 2005). Furthermore, when family and community members consider spiritual factors as being responsible for a particular problem, they often consider that orthodox medical practitioners won't be able to manage such problems (Osubor et al., 2005). Falusi (2004) supported this notion by noting that in most Nigerian communities, women with such problems are taken to traditional healers and Traditional Birth Attendants rather than orthodox health facilities.

Limited knowledge of obstetric signs is a health risk which needs to be addressed, especially in low income countries where the risks associated with pregnancy is higher. Engaging the community in improving health literacy is one strategy which has been suggested. Stevens (2000) stated that women, their partners, and their communities need to be educated on obstetric danger signs so that they can seek appropriate care from skilled providers timeously (Stevens, 2000). Similarly, Doctor et al. (2012) asserts that some of the antenatal counselling information regarding birth preparation and recognising and knowing how to respond to danger signs could be integrated into the local social networks and groups, such as village women's committees. Nutbeam (2000) also emphasised the importance of health literacy for community women in the development of context-specific health knowledge and the self-efficacy necessary to put that knowledge into practice in ways that enable people to have greater control over their health and health-related decisions. A Health Foundation community engagement initiative in rural Malawi, found that although studies have suggested that women as individuals did not have a comprehensive awareness of the problems that affect them, this capacity was accessed and channelled through women meeting and collectively discussing these issues (Rosato, Laverack, Grabman, Tripathy, Nair & Mwansambo, 2008). The authors felt that the women's own perceptions of their problems could form a vital resource for communities and policy-makers and that this process could enable women to clearly identify their maternal health problems, recognise their importance, and generate the motivation to address them (Rosate et al, 2008).

A study in Calabar, Nigeria, revealed less progress in the rural areas in comparison to progress in the urban areas (Ekanem, Etuk, Ekanem, &Ekabua, 2005). This may be due to gross under-utilisation of healthcare facilities and delays in seeking skilled attendant by pregnant women in the rural communities of which may be linked to unawareness of the danger signs of obstetric complications, deep-rooted traditions in birth practices, and lack of communities' involvement in healthcare service planning (Archibong & Agan, 2010). Study by Ekabua, Ekabua, Odusolv, Agan, Iklaki and Etokidem's (2011) identified lack of information on obstetric warning signs, birth Preparedness, complication readiness, women's limited autonomy in decision- making to seek healthcare, negative cultural beliefs and practices, and lack of community involvement in programme designing and implementation as factors that cause delays in seeking appropriate care, thereby hampering the abilities of rural women to participate fully in safe motherhood initiatives.

### Theme 2: Moderate knowledge of benefits of skilled care in hospitals/health centres

Four sub-themes emerged from this theme, namely, some

knowledge about the benefits of skilled health care; the role of hospitals to provide health education; knowledge being influenced by previous experience and the recognition of the importance of hospitals in providing immunisation.

*Some knowledge about the benefits of skilled health care:* Some of the participants could not state any benefits because they had never accessed antenatal or postnatal care provided by orthodox health facilities. Contributions from other participants indicated that most women in the rural communities are knowledgeable about the basic advantages and benefits that accrue to mother and child in the hands of a skilled healthcare provider at a certified health facility.

*"I know, because it helps the woman on the day of delivery. The woman will not have problems, and the baby also will not have problems. You will have your baby free and peacefully, no bad sickness will enter your baby's body".*

Some key benefits mentioned by the participants include: Not picking up infections; laboratory tests; availability of drugs and emergency equipment to conduct Caesarean section operations or prevent the likelihood of bleeding. However, according to them, these benefits are only provided at the general hospital level and not at the Primary Health Care (PHC) level as at PHC level, referrals are always made.

*"I know ... those benefits that goes with attending hospital are that when you go to the hospital, nurses, doctor will know and test the body to know what the problem is and also gives you drugs that respond to that problem".*

*"Importance is that in the hospital here ... there are many things that nurses, they can do for you that the other person cannot do because when you go to native doctor, the only thing I used to see, they will cook something inside the pot, maybe when you want to put to bed you bleed ... the blood will come out before the baby, you can die but in hospital maybe when you. They know that you are weak, they can use drip, and that drip will give you the strength that the baby will come outside".*

*"The benefit that is in the hospital is that when you deliver your baby, that first day you deliver, they will come and give injection because there are some our women that deliver, and they don't remove Odon [Tetanus] from their body so when they see that you have your baby, they bring themselves in, they carry their hands and touch that baby so that things will harm the baby bringing death to that baby".*

*"Benefits that accompany women who deliver in the hospital is that hospitals looks after them in terms of injecting them and giving drugs and in looking after the women and the babies they deliver. They look after them in the hospital [rather] than in the house".*

However, it was also noted that though some of the participants have accessed either antenatal or postnatal care and hence have good knowledge of some essential services obtainable, they also affirmed that they have never nor will (their current pregnancy) deliver at a hospital.

*"In my own opinion in that [re]spect, is that because of how the world is like this now* [changes mood, becomes sombre] *some people decides to go to TBA to deliver their babies, but I usually encourage people to go to hospital ... so that they can check their body and I also encourage those who wish to deliver in hospital to go, but for me ... I wont tell lies here ... I have never deliver[ed] in hospital and will never ... [I] prefer to deliver with TBA*".

*Knowledge is influenced by previous experience:* It was observed that contributions from the women were strongly associated with their experiences at government health facilities at one time or the other.

*"The benefits that accompanies somebody that goes to the hospital to deliver are that you can go to that hospital to deliver… For example like this my own when I went to the clinic, I was brought to the clinic, when labour became too difficult, they transferred me that I should go to general hospital… Labour still was very difficult; they then sent me to teaching hospital. So there, they put me drip so that it can give me power so that I can push out the baby when it's time for me to born my baby".*

*"Because Hospital is good, if you have your baby. There are some TBA's places that collect from you more than ten thousand but if hospital, if you register in the hospital, they will not collect from you as much as a TBA would, they make it easier for you because it is under the government ... the problem is that, some things the TBA does not know, but if they bring you to the hospital, the hospital will help".*

*Role of hospital in providing health education*: The provision of health education and knowledge was acknowledged by some respondents as some of the benefits of attending hospital.

*"I know because those things ... you will have knowledge about those things you never knew about. Like me… the children I used to born, after delivery, people ... they will teach me how I am to stay, while in the TBA house ... those friends that deliver their babies with the TBA, they don't used to tell them any knowledge they gain from there, but if it is in hospital, like health centre, Anyanganse I used to attend, they used to teach us knowledge, upon knowledge on how a woman should stay or how to take care of her baby".*

*Recognition of the importance of the role of the hospital to provide immunisation:* Participants voiced a high recognition of the importance of immunisation. From the responses, it became obvious that rural women give high preference to immunisation and the health of their babies. The study revealed high patronage of immunisation services, even by those who do not utilise antenatal and delivery services. This may partly be due to the fact that immunisation services are given wide publicity in the communities and even by the TBAs, and it is almost mandatory for those who are due for it. Some responses were captured verbatim as thus:

*"When she is pregnant and goes to the hospital, it will be good because they will [inject her immunisation and give her small drugs that she will use and take. From there when she use ... the drugs will be good to her and she will then see benefit, she will see some improvement in her body".*

*"One good thing I know when you keep going to the hospital, they will give you immunisation and will not allow you to be sick and will also, when your baby is born, it will be healthy".*

*"Aunty, she will surely have problems because she was not going to inject immunisations and was not going to receive other treatments to meet up, problems can reach her anytime".*

*"Why I decided to deliver in the hospital is because I used to receive immunisation in the hospital until the day I was to deliver, saying that when that day reaches I will deliver freely without anything happening".*

## Discussion

Our study found moderate experiential knowledge of the benefits of skilled care in hospitals. This is supported by the findings from Okafor, Sekoni, Ezeiru, Ugboaja, and Inem (2014) in a qualitative study on orthodox versus unorthodox care which found that when rural women seek care during pregnancy and childbirth in Nigeria, they experience the conduction of regular check-ups and investigations (BP, weight checks, ultrasound scans, and urine and blood tests), better management of postdate pregnancy and prolonged labour, and immunisation of the newborn, all of which are their reasons for choosing orthodox care.

However, there is ongoing concern about the low uptake of orthodox health care and the need to improve this, especially around the recognition of obstetric danger signs. Sibley et al., (2004) showed that several studies confirmed there has been no improvement in Maternal Mortality Rates (MMRs) where TBAs are the main provider of care to the pregnant woman. De Bernis et al. (2003) also found an association between the lower association of maternal mortality and births attended to by skilled health personnel. Starrs (2006); Starrs, (2007); and De Bernis et al. (2003) concluded that skilled birth attendance is one of the strategies aimed at reducing maternal and newborn mortality and the proportion of birth conducted by Skilled Birth Attendants (SBA) is a key indicator for MDG 5 of improving maternal health and its target of reducing maternal mortality.

## Theme 3: Moderate knowledge on dangers of delivering at home

Three sub-themes emerged from this theme, namely, some awareness of TBA lack of knowledge and skills for emergency interventions; lack of receiving immunisation for baby when attending a TBA and the possibly unsanitary environment of home delivery.

*Some awareness of TBA's lack of knowledge and skills for emergency interventions:* Only one respondent (who was just delivered of a baby by a TBA) confirmed not having any knowledge on the likely dangers associated to home deliver or TBA-assisted home delivery. According to her:

"*I have no idea".*

Contributions from most of the participants indicated that they were aware of the likely complications and implications for carrying out deliveries at home or at a TBA home. The participants highlighted lack of knowledge and skills in emergency situations was also highlighted. Unavailability of emergency equipment for use by the TBA in the event of emergencies such as retained placenta and bleeding was noted.

*"…also the mother too they don't give that mother treatment too. Bleeding used to happen to a woman too who delivers at home, without help … from there she may die".*

*"Problem … problems that can befall them when …they go to TBA is No.1 … they can deliver without the placenta coming out . No.2 ... they can labour with suffering for long without delivering. Then when you go to the hospital, … the nurses and the doctors will test you and know all the problems … all those small problems since when you were pregnant from one month to seven months onwards, they will give you drugs … because TBA only knows enema without knowing what the problem is inside one's body".*

*"Those bad things that can happen to a woman who goes to the goes to receive treatment …and not go to the hospital, she then goes to TBA to deliver her baby, then the placenta refuse[s] to come out or it remains and this TBA does not know the type of leaves … to give to this woman for the placenta to come out. It is there that the mother used to die and the baby lives or mother dies".*

A participant highlighted why access to maternal care by a TBA rather than a professional birth attendant poses a danger. She claimed that a TBA helps the pregnant woman to have an easy delivery because TBAs uses local herbs and palpations to ease labour pains, unlike the orthodox hospitals who rather inject and conduct a CS on the mother; this according to her, scares many pregnant women away from hospitals.

*"the problems that could follow such a woman… because there are many things are there that a TBA can [do] … there are leaves, if labour is difficult that they can take and give you …you chew … so that you deliver fast because some ... of these our women are afraid that when they go to the hospital and labour is too difficult they will take them to theatre and operate them, there are problems, and problems that women fear about operation, fear small knife".*

*Lack of baby receiving immunisation when attending TBA:* The main reason offered to justify the limitations of the TBA was that the baby is not likely to receive antibiotics (in their own words "immunisation") immediately after birth.

*"She will surely have problems because she was not going to inject immunisations and was not going to receive other treatments to meet up, problems can reach her anytime".*

*"The problem that can happen to them is that as they are delivering that baby at their home … delivering at home without giving that baby immunisation that first day, that the baby is born".*

*"Those bad signs that can happen to women who deliver at home are that you can deliver that baby at home … because you did not attend anti-natal in the hospital, they don't give you injection".*

*Possible unsanitary environment of home delivery:* Another sub-theme that emerged was the untidy and uncomfortable delivery room for mother and child.

*"The place she sleeps to delivers is not good, sometimes the treatment given to her at home is not good with that baby, maybe that baby can have problem".*

*"Some problems used to affect them, also Nwanga [yawning] can happen to them. Secondly, also that can … bad person can come in … somebody who had delivered a baby and suffers from [akpa] comes in and touch the baby, and the baby dies, that is not good".*

## Discussion

Our study found moderate knowledge by the mothers on the dangers of home delivery, though there are some preference for the attendance to TBAs.

While it is recognised that TBAs can and do provide emotional and social support to the mother and can provide key health education messages, women rely on TBAs where there are no Skilled Birth Attendants available or where they cannot afford the cost of professional services (Ogunjobi, 2015). However, according to several studies, TBAs are not an acceptable substitute for Skilled Birth Attendants (SBAs) at birth (WHO, 2007). Imogie (2000), Ofili and Okojie, (2005), and Titaley, Hunter, Dibley, and Heywood (2010) all describe a typical TBA as an illiterate person who may lack the potential to recognise birth complications. TBA-provided maternal health services on their own are believed not to be safe and it has not contributed to a decrease in maternal mortality (Ofili & Okojie, 2005). Several studies as observed by Sibley et al. (2004) point to the fact that there has been no improvement in Maternal Mortality Rates where TBAs are the main provider of care to pregnant women. This may be due to some practices of TBAs as shown by the findings from a study on the assessment of the role of TBAs in maternal healthcare in Nigeria, which revealed that the infection control methods employed by the TBAs was found to be poor (Ofili and Okojie, 2005). According to Imogie, Agwubike, Aluko (2002), Traditional Birth Attendants (TBAs) are very much in short supply of modern facilities and most times are forced to use whatever is available which are often substandard. Ebuhi & Akintujoye (2012), in her study revealed that respondents acknowledged that complications could arise from TBA care. Likewise, findings from studies by Oshonwoh, Nwankwo & Ekiyor, (2014), revealed that majority of the provided services by TBAs are unhygienic as only very few of them use any form of personal protective devices or equivalents in the course of their duties.

In 1999, WHO explicitly stated "there is no reason to believe that TBA training can contribute to MMR reduction in isolation" (WHO, 1999). This was amply demonstrated in a study in Pakistan where TBA interventions led to a decrease in perinatal mortality but did not lead to a significant reduction in the Maternal Mortality Rate (Jokhio, 2005). Therefore, some studies, such as those of Sibley and Sipe (2006) and Pyone et al. (2014), suggested that in low resource settings, training and re-orientating TBAs to change their roles from recognition of "at risk" women and referrals for skilled obstetric intervention to that of companion and promoter of facility-based maternity care including delivery, can improve healthcare access for women, and can result in an increased number of women receiving skilled maternity care. Similarly, in a systematic review of strategies adopted to reduce the MMR, Campbell, Graham, & Lancet Maternal Survival Series Steering Group (2006), concluded that a comprehensive package of services is required with a continuum of care approach from Birth Preparedness, including Ante Natal Ccare, to delivery interventions, postpartum care with intra-partum care identified as the most critical phase when complications can occur and therefore should be managed by qualified health professionals (Skilled Birth Attendants).

## Conclusion

This study explored the knowledge and understanding of women of childbearing age (pregnant and new mothers) of obstetric danger signs in the rural communities of Cross River State. The study established that the rural women of Idundu and Anyanganse have limited knowledge regarding obstetric danger signs and the importance of hospital delivery. These were partly the reason for phase 1 delay (delay in decision to seek care) and women's failure to take up healthcare services.

## Recommendation

Based on the findings of this study, the following recommendations were made:

**1.** There should be a collaboration between the rural communities and nurses/ midwives and other health professionals serving in the communities, for the purpose of engaging the communities particularly the rural women in health education on obstetric dangers, and the importance of utilising skilled care during pregnancy, delivery and postpartum, thus bringing about prevention of maternal health complications and maternal mortality in the rural communities.

**2.** The collaborative approach should lead to the formation of a Community Engagement Group (CEG), whose duty should be to sensitise the women, families and indeed the entire community on obstetric danger signs for early recognition, the importance of utilisation of skilled care by pregnant women for early intervention, and the hazards of patronizing unskilled traditional birth attendants. This would bring about increase utilisation of orthodox maternal healthcare services by rural community women.

**3.** Maternal health literacy should be carried out by the Community Engagement Group (CEG) for the purpose of correcting baseless traditions and assumptions by rural women regarding healthcare facilities, providers, and certain health procedures, thereby promoting utilisation of skilled care by the rural women and the resultant reduction in maternal morbidity and mortality.

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