

Childbirth Practices in the Akpabuyo Rural Health and Demographic Surveillance System

Ekaette Enang^{1,2}, Michael Ushie^{1,3}, Iwara Arikpo^{1,2}, Kalu Osonwa^{1,3}, Ekpereonne Esu^{1,4}, Friday Odey^{1,5},
Angela Oyo-Ita^{1,6}, Martin Meremikwu^{1,5*}.

1. Cross River Health and Demographic Surveillance System, University of Calabar, PMB 1115, Calabar
2. Department of Mathematics, Statistics & Computer Science, University of Calabar
3. Department of Sociology and Anthropology, University of Calabar
4. Department of Public Health, University of Calabar
5. Department of Paediatrics, University of Calabar
6. Department of Community Medicine, University of Calabar

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Abstract

Maternal and neonatal mortality remain high in Nigeria. The State and Federal governments have adopted several strategies to prevent maternal and infant deaths such as the Cross River State Free Health Services to pregnant women and infants, and the National Midwives' Service Scheme. This study assessed pregnancy and childbirth practices of Nigerian women in rural communities located in Akpabuyo in the Niger Delta region of Nigeria.

Women who were pregnant or had recently given birth in a population of 5,668 people under surveillance in some rural communities of Akpabuyo were interviewed to obtain information on pregnancy and childbirth practices. Validated semi-structured questionnaires were administered by well-trained field workers. Completed questionnaires were entered into electronic data forms in OpenHDS software and exported to STATA for analysis.

Results showed that, 39.5% of women reported that they had sought prenatal care from a traditional birth attendant (TBA). 84.6% of all births occurred outside the formal health system with the majority attended by TBAs. Only 15.4% of births occurred in hospitals or health centres. The implements used to cut the umbilical cord were knives (46.2%), new razor blades, old razor blades, sharp stone and scissors. The materials used for treating the umbilical cord were mostly methylated spirit (63.1%); other treatment materials were "western medicine", "black powder" and others including herbs and earth.

The study concluded that, childbirth practices that pose significant risk to maternal and newborn health remain common in these rural communities. Majority of births were attended by TBAs despite free delivery services available at the formal health facilities. TBAs should be assisted to enhance their role in health care delivery. Effort should be made to increase public awareness and interest in facility-based services.

Keywords: Maternal health, neonatal infection, longitudinal data, pregnancy.

1. Introduction

Complications during pregnancy and childbirth have been found to be the leading cause of death and disability among women of reproductive age in developing countries (WHO Health Statistics and HIS, 2011). The WHO estimates that 800 women die daily from preventable causes related to pregnancy and childbirth; and in 2010 alone, 287,000 women died during and following pregnancy and childbirth (WHO Medical Centre, 2012). Unfortunately most of these preventable deaths occurred in low resource settings.

High rates of neonatal death coexist with high maternal mortality in these low resource settings including Nigeria. Prior to increased global effort at tetanus immunization and promotion of clean delivery practices, an estimated one million cases of neonatal tetanus occurred yearly of which about 800,000 died (Whitman et al., 1992). The commonest causes of newborn deaths in Nigeria are birth asphyxia and infections including cord infections and tetanus (WHO World Health Statistics, 2011). The WHO has reported that cord infection and neonatal tetanus contribute significantly to high neonatal mortality in developing countries (WHO, 1998). Unhygienic childbirth practices such as those related to the care of the umbilical cord stump contribute to the

high incidence of neonatal sepsis and tetanus in low income countries. In high income countries, majority of births take place in hospitals and other formal health care settings where clean birth techniques (including use of sterile blades or scissors to cut the umbilical cord) are the norm thereby minimizing the risk of neonatal infections (Zupan, Garner and Omari, 2004).

On the contrary, many births in most of the low income countries occur in settings where unsterile tools and materials are commonly used to sever and dress the umbilical cord stump. A recent qualitative study in northern Ghana showed that a wide variety of tools were used in cord cutting, the most commonly used being razor blades or scissors. That study reported that a wide variety of materials were applied as dressing on the cord, and including traditional materials like shea butter, ground shea nuts, herbs, local oil and red earth (Moyer, et al., 2012). Such unhygienic birth practices coupled with low rates of maternal immunization against tetanus account for the high incidence of neonatal tetanus in Nigeria (Eregie and Ofovwe, 1993). The overall percentage of women with a live birth within 24 months of a nationwide survey in 2007 that were protected against neonatal tetanus was 51% with wide urban (72%) and rural (41%) disparity (National Bureau of Statistics, 2007).

Andrew and Dala (2011), in a study in Bangladesh observed that more than 80% of women delivered at home. In 6% of cases, blades from a clean-delivery kit (CDK) were used to cut the cord; in 90% of cases, the blades used were from another source; in 4% of cases, other instruments such as bamboo strips and scissors were used to cut the cord. In 51% of cases, a substance (e.g. antibiotic powder/ointment, alcohol/spirit, mustard oil with garlic, boric powder, turmeric, and chewed rice) was applied to the stump after the cord was cut. Consequent upon these, the paper seeks to bring to the fore, some common pregnancy and birth practices among women in these rural communities in South-eastern Nigeria.

Governments of most of the 193 United Nations member States have made several efforts to achieve the Millennium Development Goals (MDG) of reducing child mortality and improving maternal health. Nigeria is not left out in these attempts, and has developed policies and programmes to address the problem of high burden of maternal and child health such as the Reproductive Health Policy which aimed to reduce maternal mortality by half by 2006 (Federal Ministry of Health, 2001), the Integrated Maternal, Newborn and Child Health Strategy of 2007 targeted at addressing 90% of causes of maternal deaths (Federal Ministry of Health, 2007) and the Midwives Service Scheme (MSS) which involved the recruitment, training and deployment of midwives at PHC level to perform Basic Emergency Obstetric Care signal functions in all States of the Nigerian Federation (National Primary Health Care Development Agency, 2010). Unfortunately, despite these efforts by government to provide maternal and child care, Nigeria still ranks very high in maternal and child mortality making it needful to appraise the level of access to and utilization of the services provided by the people.

Respective State Governments in Nigeria have taken turns to pass certain bills and launch different health promotion packages in this direction. Recently in Cross River State, Government passed a bill committing to offer free medical services for pregnant women and children under the age of 5years. This paper discusses the results of a study of childbirth practices conducted in some rural communities within a newly established health and demographic surveillance system in Cross River State.

2. Material and methods

2.1 Population

The study is carried out in 22 enumeration areas (EAs) within the Demographic Surveillance Area (DSA) of the Cross River Health Demographic Surveillance System (CRHDSS) in Akpabuyo Local Government Area of Cross River State – Nigeria. This Surveillance area, on which this study is based, had a population of 5,668 people and 1,370 households spread across a total of ten rural communities.

The study involved 130 women who had delivered within calendar 12 months of the study (with babies aged 0-12 months). The population size is relatively small, but the data sets are statistically significant because it includes all the women who have delivered within the period under study in all the communities studied; its whole population was studied, not a sample.

2.2 Data collection and Data Management Procedure

The International Network of Field Sites with continuous Demographic Evaluation of Populations and Their Health (INDEPTH) has many tested forms (questionnaire) for the core HDSS processes which was adapted and updated for use in the CRHDSS. The specific forms used to generate the data for this work are, Household Registration Book (HRB) form; Housing and Institutional facility numbering form; Household characteristics, Pregnancy registration and pregnancy outcome form. Field workers were employed to administer these forms in the different 22 Enumeration Areas (EAs) and 1,370 households that constitute our study population.

These INDEPTH adapted questionnaires were administered by trained field workers to all the women with children between 0-1 years at the time of the study. The field workers through the field supervisors submit the forms to the data clerk for entry into the computer. The completed forms are checked for consistency by the Data Entry Supervisor and queries are generated wherever inconsistencies are spotted. Data Entry clerks enter the completed questionnaires into their corresponding computerized form using the OpenHDS interface (<http://openhds.rcg.usm.maine.edu/>). From the OpenHDS, data is extracted with the help of SQL queries and exported to STATA statistical software for analysis. In this study, information on pregnancy and childbirth in the community as it relates to places where the women gave birth was tracked and issues related to quality healthcare including what was used to cut or dress the babies' umbilical cord were explored.

3. Results

3.1 Prenatal Care

Longitudinal pregnancy observations and interviews conducted side by side with interviews of recently delivered women in the same communities showed that 29 of the 48 (constituting 60.5%) of women who were at different stages of pregnancy attended antenatal care in health centres (56.3%) and hospital (4.2%). The rest of the women (39.5%) reported that they had sought prenatal care from a traditional birth attendant. Information on maternal tetanus immunization was not obtained since there were no home records showing immunization status of these pregnant women.

3.2 Place of childbirth

Analysis of information on birth practices obtained from interview of 130 women who had recently given birth in the community showed that 84.6% of all births occurred outside the formal health system with the majority attended by traditional birth attendants (TBAs). Only small proportion of the births (15.4%) occurred in hospitals or health centres (see Figure 1).

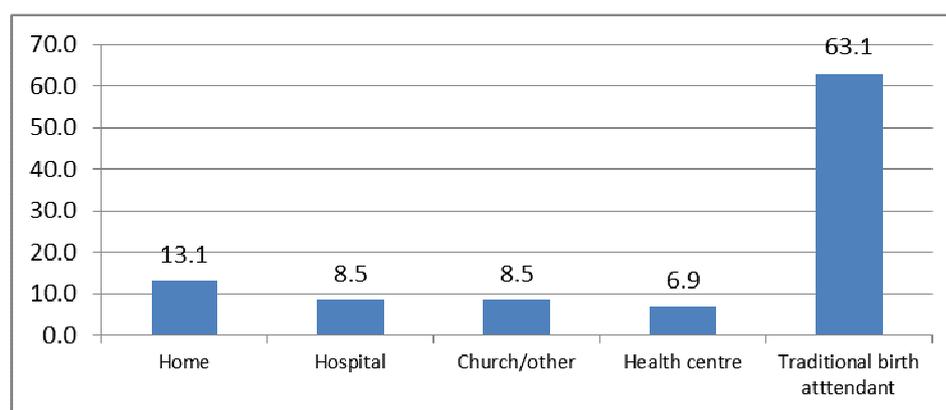


Figure 1. Places of birth for 130 deliveries studied in Akpabuyo HDSS

3.3 Umbilical cord care practices

On issues related to the quality of the care of the umbilical cord, result of analysis on objects used in cutting the umbilical cord revealed that the commonest cutting implements used to cut the cord were the knife (46.2%) and new razor (30.8%). The other objects used were sharp stone, old razor blade and scissors. Table 1 shows the frequency distribution of these cutting implements by place of childbirth. Of the 82 deliveries by TBAs, umbilical cord was cut with the knife in 39 cases (47.6%) and with new razor in 23 (28%). The knife was used to

cut the cord in majority of the births that occurred at home (9 of 17) and the church (7 of 11). No information was obtained about the cleanliness or any effort made to disinfect these cutting implements.

Table 2 shows the types of materials used for treating the umbilical cord in 130 births studied in the Akpabuyo HDSS. The commonest materials used were methylated spirit and “western medicine” referring to topically applied medicine of unspecified description but assumed to be probably antiseptic. Herbal and other types of traditional mixtures were reported to have been used in only a few cases.

Table 1. Tools used for cutting umbilical cord in Akpabuyo

Tools used to cut the cord	Frequency of use/Places of childbirth					Total	
	Hospital	Health centre	TBA	Home	Church/other	Frequency	%
Knife	2	3	39	9	7	60	46.2
New razor	5	5	23	4	3	40	30.8
Old razor	0	0	2	0	0	2	1.5
Sharp stone	0	0	2	0	1	3	2.3
Scissors	3	0	8	0	0	11	8.5
Don't know	1	1	8	4	0	14	10.8

Table 2. Materials used for treating the umbilical cord of babies in Akpabuyo

Materials used for treating umbilicus	Number of babies whose umbilical cord were treated	% treated
Spirit	82	63.1
Western medicine*	31	23.8
Other(herbal, earth, etc)	6	4.6
Nothing used	2	1.5
Black powder	1	0.8
Don't know	8	6.2

Notes: *Topically applied medicines (probably antiseptic)

4. Discussion

The results of this study of all childbirths within a number of communities making up 1,370 households which have been under health and demographic surveillance from 2011 shows that majority of childbirths in this rural Nigerian population occur outside the formal health system. The proportion of women who delivered in formal health facilities was markedly less than those who sought prenatal care in these health facilities. This observation is similar to the results of the 2008 Demographic and Health Survey which showed that 45.9% of the pregnant women in rural communities across the country attended antenatal clinics (ANC) but only about half that number (24.1%) delivered in health facilities (National Population Commission, 2009). Research and routine surveys results have also shown that majority of women in rural areas who attend antenatal clinics prefer to give birth with traditional birth attendants (TBA). A study carried out in Kenya has shown that, although over 88% of Kenyan women attend an antenatal clinic at least once during each pregnancy, there are regional disparities in where a woman delivers and who provides support at delivery. In the Western Kenyan Province, TBAs still

attend over 34% of deliveries, whereas a skilled attendant delivers 28% of women. In contrast, a TBA delivers only 6% women in Central Province and 70% women deliver with a skilled attendant (The Safe Motherhood Demonstration Project, 2003). The continued preference for TBAs in Western Province according to the study was attributed to several factors, including the TBAs' proximity to the woman's home, TBAs' respectful attitude for women, regardless of age or parity, and flexible modes of payment.

The majority of the deliveries reported in the present study were attended by traditional birth attendants indicating that the women preferred the services delivered by this cadre of community-based maternal care providers. It is common knowledge that traditional birth attendants are widely patronized in Nigeria and other African countries like Ghana (Andreatta, et al., 2011), Sierra Leone (Oyerinde, et al., 2008) and Kenya (Ochako, et al., 2011). TBAs have been associated with unsafe delivery services that contribute to maternal and neonatal morbidity and mortality but many countries have embarked on various training programmes to improve the quality of services delivered by TBAs (Naisho, et al., 1989; Sibley, et al., 2007). Conclusions of evaluation of these TBA training initiatives have been varied and leave unresolved questions about the quality and usefulness of the services rendered by TBAs (Piper, 1997; Harrison, 2011).

There have been major efforts in recent times to increase the proportion of births attended by trained personnel such as National Midwives Services Scheme (National Primary Health Care Development Agency, 2010). In Cross River State where this study was conducted; the Government has recently begun to offer free antenatal and delivery services in State health facilities to all pregnant women in the State. The reasons for the observed low utilization of delivery services of the government health facilities despite the offer of cost-free services need to be carefully studied and interpreted.

A recent qualitative study of pregnant women in other parts of southern Nigeria identified some of the reasons why women may choose to use the services of traditional birth attendants to include proximity, affordability and cultural acceptability (Ebuehi and Akintujoye, 2012). Other authors (Chakraborty et al., 2002; Kulmala, et al., 2000; Kabir, et al., 2005; Awusi, et al., 2009) have shown that the use of health-care services is related to the availability, quality and cost of services, as well as to the social structure, health beliefs and personal characteristics of the users. Some other factors as identified by Awusi et al (2009) to be responsible for poor utilization of services included lack of motivation, non-accessibility, cultural and negative role played by husbands, overconfidence, lack of education of women and partners, cost of services, inaccessibility of available services are similar to findings elsewhere.

The report of a qualitative study on Traditional Birth Attendants and maternal health care in Ghana has asserted that the decision of where to give birth by a woman is a very personal choice and one that has a number of reasons behind it (Kennedy, 1999). A woman may choose the TBA over the hospital because of lack of finances, proximity and fear of intimidation from the doctor while another chooses to go to hospital because she does not trust the medicines administered by TBA or for the fear of having a difficult delivery which the TBA may not be able to handle or because she is used to using the hospitals for her other ailments and it is just convenient to deliver there. Whatever the case, it is ultimately the woman and her family's decision as to where to go for antenatal care or child birth.

The argument on why women may prefer TBAs addresses an aspect of explanation for the low utilization of formal health facilities for childbirth in our study community despite the incentive provided by free health care policy of government. There is no doubt that births attended by trained personnel with clean environment of health facilities carries lower risk of maternal and newborn morbidity and mortality than births attended by untrained persons. For instance, evidence from some analyses of hospital-based morbidity and mortality in Nigeria shows that deliveries outside the health facilities are likely to be conducted by untrained persons and associated with high rates of morbidity and mortality (Omoigberale, et al., 2010; Orimadegun, et al., 2008). The obvious benefits of facility-based births by trained personnel has led to the implementation of several health promotion interventions to make the women change their behaviour to the effect that they would choose facility-based births instead of the more risky births by inadequately trained traditional attendants. One study show that the expected behaviour change has not been achieved hence the persistence of home and TBA attended births.

The debate on reasons and choices that may explain the failure or delay in achieving increased utilization of free facility-based maternal and child health services would be more logical if the discourse is done in the light of a suitable health promotion theory. Debates on the choices that people make for preventive and curative health care should derive from one or more of these known theories of health promotion; and this would make the

attendant issues and questions more amenable to scientific investigation and possible proof. The choices women make regarding when and where to receive care during pregnancy and childbirth are likely to be a product of the complex interaction of personal attributes and the influences of human and physical factors in the woman's immediate environment. The Ecological perspective theory offers a broad framework for the understanding of the multi-level perspective to the processes and factors that determine change in health behavior (McLaren and Hawe, 2005). Going by the postulate of this theory, it would follow that the failure or delay in the process of convincing the women to change their current health behaviour of using TBAs could be explained by the complex interplay of intrapersonal or individual factors; interpersonal factors; institutional or organizational factors; community factors; and public policy factors.

Understanding the meaning and mechanism of interaction of these ecological theoretical concepts would offer the researcher investigating the reason for the persistence of low utilization of facility-base delivery services the pathways to the likely multi-level explanations for the failure or delay in achieving the desired change in health behaviour. Understanding and applying theories in exploring the root cause of such public health problems as the persistence of low utilization of antenatal and delivery services in Akpabuyo would offer a logical framework to conceptualize suitable health promotion interventions (Rychetnik, et al., 2002).

This study has also shown that the practice of care of the umbilical cord remain suboptimal. The use of knife to cut umbilical cords of babies was prevalent. There is no indication that these knives were sterilized in the community setting where this was widely practiced. Many of the TBAs used new razor to cut the umbilical cord, and these are unlikely to be contaminated and therefore constitute a safe practice. It is also a positive observation that a good proportion of the TBAs used methylated spirit to clean the cord. A wide variety of methods and materials have been reported for care of the umbilical stump in these non-formal settings (Whitmore, 2010; McConnell, et al., 2004; Vural and Kisa, 2006; WHO 1998; Zupan, et al., 2004). Some of the substance that have been used on umbilical cord stumps include; plant extracts, coins, olive oil, coconut oil, colostrum, triple dye, povidone-iodine (Betadine), various antibiotics, sterile water, alcohol (70 % isopropyl alcohol), and no treatment at all but evidence on the effectiveness of many of these materials remain inconclusive (Zupan, et al., 2004).

A recent report on the evaluation of the effectiveness 4% chlorhexidine for the care of umbilical cord showed significant reduction in umbilical cord infections (omphalitis) and neonatal mortality (Goldenberg, 2012). An overview of studies on the effect of improved birth practices in Asia showed that the use of clean delivery kits was associated with reduction in neonatal mortality. Specifically, these studies suggested that using a plastic sheet during delivery, boiling the blade used to cut the cord and the thread used to tie the cord, as well as cleaning the umbilicus with antiseptic lotion each contributed significantly to reductions in neonatal mortality (Seward, 2012).

The number of pregnancies and deliveries observed in this study is small but remains significant because it involves a whole population and not based on a sample. All the pregnancies and recent childbirths in the whole of the study community were assessed.

5. Conclusion

Most child births still occur outside facilities and majority are attended by TBAs. Since the choice of place of birth is arguably the main reason for the poor birth practices reported in this study, it would follow that efforts to improve childbirths in health facilities is bound to improve cord care practice and reduce the incidence of neonatal infections and mortality. Promotion of safe practices like use of clean delivery kits by community-based birth attendants especially TBAs should be encouraged as this has been shown to reduce neonatal and maternal mortality. It will be interesting to find out why women have so much confidence in TBAs despite the risks involved. It is therefore important to investigate the factors and mechanism that influence the choice of women for antenatal care and place of birth.

The Government's free health program is at its early stage. This study will help in evaluating the success of this policy. Government may also put effective policy monitoring systems on ground to ensure that the end users benefit from the laudable policies. There is also the need to initiate a reward system for mothers who deliver in the hospital and step up community based campaign where women are exposed to the dangers associated with some of these common practices.

Since, the use of TBAs cannot be discouraged in the rural community; there is need for training, retraining and supervision of TBAs to do their work more effectively.

TBAs in various rural communities should be identified and assisted with up to date equipment to take up deliveries. Partnership between the TBAs and the primary health care providers for the purpose of referrals should be encouraged for effective practice.

6. Possible Future Research Directions

This paper has highlighted the need to study the key factors and mechanisms that determine choice of place of childbirth among the women in these rural communities. The same multi-disciplinary research program should also explore factors responsible for limited utilization of formal health service facilities for childbirth in rural Nigeria. Intervention studies will be required to identify effective strategies for improving the quality of services rendered by traditional birth attendants (TBAs). Priority area of research should include identifying mechanisms for integrating this cadre of community health providers into the national health system with a view to increasing the opportunity to offer supporting supervision and establish semi-formal regulation of the practice.

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