ORIGINAL RESEARCH ARTICLE

Praying for Divine Intervention: The Reality of "The Three Delays" in Northern Nigeria

Babayo Muhammad Tukur[1], Umma Bawa[2], Kingsley Odogwu[2], Sunday Adaji[2], Paige Passano[3], Idris Suleiman[4]

[1]Department of Nursing Sciences, Faculty of Medicine, Ahmadu Bello University, Zaria; [2]Department of Obstetrics and Gynaecology, Ahmadu Bello University Teaching Hospital, Zaria; [3]The Bixby Center for Population, Health and Sustainability, University of California, Berkeley; [4]Department of Community Health, Ahmadu Bello University Teaching Hospital, Zaria.

***For Correspondence:** Babayo Muhammad Tukur. *E-mail:* tukurbm@yahoo.com.

Abstract

This paper describes how pregnant women in three northern Nigerian communities responded to maternal complications that occurred outside of a hospital setting. The sample consisted of 322 women who had recently delivered, of which 15% had at least one complication. Thirty-seven percent of women described antepartum or postpartum haemorrhage. Over 60% of women went to a health care facility, but 35% first tried herbal remedies and another 20% simply waited for their husband to return. The median interval between recognizing the problem and deciding to seek help was two hours. It took approximately one to two hours to reach the hospital and upon arrival, most respondents got care in one to two hours. Rural communities clearly have their own hierarchy of appropriate actions in the face of a household emergency which need to be understood in order to develop creative intervention strategies to reduce unnecessary risks to the life of a mother (*Afr. J. Reprod. Health* 2010; 14[3]: 113-119).

Résumé

Prière pour l'intervention divine: La réalité « des trois délais » au nord du Nigéria. Cette étude fait une description de la manière dont les femmes dans les trois communautés du nord du Nigéria ont réagi aux complications maternelles qui se produisent en dehors du milieu hospitalier. L'échantillon comprenait 322 femmes qui venaient récemment d'accoucher, dont au moins 15% avaient une complication. Trente-cinq pourcent des femmes ont décrit l'hémorragie de l'ante-partum ou de post-partum. Plus de 60% des femmes ont fréquenté un établissement de santé, mais trente-cinq pourcent ont essayé les remèdes à base de plantes et un autre 20% n'ont fait qu'attendre que leurs maris rentrent. L'intervalle moyen entre la reconnaissance du problème et la décision de rechercher l'aide était deux heures. On mettait presque deux heures pour arriver à l'hôpital et une fois là-bas, la plupart des interrogées ont reçu des soins au cours d'une heure ou deux. Les communautés rurales ont clairement leur propre hiérarchie d'actions appropriées face à une urgence familiale qu'on doit comprendre afin de développer des stratégies de l'intervention créatrice pour réduire les risques inutiles de la vie d'une mère (*Afr. J. Reprod. Health* 2010; 14[3]: 113-119).

Key words: Maternal mortality, obstetric emergency, three delays, obstetric complications, actions taken.

Introduction

Over half a million women die each year from preventable and treatable complications of pregnancy and childbirth. The odds that a woman will die from these causes in sub-Saharan Africa are 1 in 16 over the course of her lifetime, compared to 1 in 3,800 in the developed world[1]. In sub-Saharan Africa, maternal mortality is the result of a number of inter-related economic, medical, and socio-cultural factors. Maternal death occurs as a result of intra-household politics, compounded by a decaying health infrastructure in the context of an absence of political will to address maternal health. Maternal mortality is not just a health problem; it has far reaching implications for the newborn, family, community and society at large[2].

During pregnancy and childbirth, women need a continuum of care to ensure the best possible health outcome for themselves and their newborns. The continuum starts with the woman and her family in the woman's own home — self-care and prevention. This is followed by the first level of health care, ANC and other health promoting services offered at

primary health centres or through out-reach at the client's home[3]. However, the risk time for a pregnant woman is during labour and delivery, but on the African continent, only 46% of the deliveries are assisted by skilled birth attendants (SBAs)[4]. In Nigeria, the latest Demographic and Health Survey (NDHS) 2008 showed that only 39% of deliveries were attended by a skilled birth attendant. However in rural areas it drops to 25% of deliveries with 73% of deliveries occurring at home[5].

Roughly 10% of the world's maternal mortality occurs in Nigeria, even though the country only makes up 2% of the population of the globe. The MMR has decreased in some areas in recent years, and the official national estimate is 545 per 100,000 but the MMR in the North remains stubbornly high, reaching up to 1,549/100,000[6]. This places northern Nigeria in the company of only a few other countries such as Sierra Leone, Afghanistan, and other countries that have suffered years of war and instability. Nigeria is one of the wealthiest countries that has failed to bring the MMR and IMR down, and as the 2015 deadline for the Millennium Development Goals (MDGs) approaches, the world is watching to see how Nigeria will overcome this threat to the well-being of its people.

A study conducted in 1995 in Zaria, northern Nigeria, showed that despite an increase of personnel and efforts to upgrade the infrastructure in health facilities, there were no improvements in the use of emergency obstetric care (EmOC) services[7]. This indicates that to reduce the number of women dying during childbirth, there is much more work to be done outside of health facilities to address the attitudes, practices, and barriers that keep women away from health facilities, and contribute to delays in the decision to seek EmOC services during emergencies[8]. In addition, there is a need to increase access to SBAs and close the policy gaps that prevent women from accessing skilled care outside of hospitals facility[9,10,11].

The 'three delay' model described by Thaddeus and Maine[13] over 16 years ago remains a relevant and useful framework to analyze the factors contributing to adverse maternal health outcomes. The first delay refers to the time it takes a family to recognize that complications during pregnancy or childbirth are severe enough to require medical attention at a health facility. Individuals influencing the decision making process include the woman herself, her husband and extended family, traditional birth attendants (TBAs), and any other person involved in the woman's care. Contributing factors in the decision include financial and opportunity costs, perceived quality of care, and past experiences with the health care system[7,12]. The second delay, referring to the time it takes from decision to seek outside care to reaching the health facility, is affected by physical accessibility, travel time from home to facility, availability and cost of trans-portation, and the condition of the roads. The third delay occurs after arriving at the facility. It is a mea-sure of the time it takes between arrival at a facility and consultation by health professionals[13].

About 15% of women develop obstetric complications, and while most complications are unpredictable and unpreventable, many are treatable through EmOC[14]. Postpartum haemorrhage, eclampsia, complications of abortion, puerperal sepsis and obstructed labour are the leading obstetric causes of maternal death in developing countries, all of which can be treated[15,16]. Each of these conditions is worsened by delays in accessing a health facility. A recent hospital-based study in six northern Nigerian states by Okonofua et al. revealed that the hospitals' MMR was an alarming 3,974 per 100,000 live births[17]. In a region where the population based MMR is 1000 to 1500, the only reason for case-fatality rates to approach 4000 per 100,000 is because delays in referral are so long that the women who finally arrive at the hospital are already on death's door. A better understanding of the decision making process causing the delays will help efforts to reduce maternal mortality by increasing the number of women who arrive at the health facility early enough to receive care.

The objective of this study was to better understand, and clearly describe, the hierarchy of care-seeking behaviour that women go through at the onset of obstetric emergencies. It also tries to identify key factors affecting their families' choices when accessing services along this continuum of care. It is hoped that this study's findings will help inform policy makers and contribute to the collective efforts in Nigeria to achieve the fifth MDG.

Methods

A cross-sectional household-based survey was conducted to investigate the hierarchy of care seeking behaviour following the development of pregnancy complications among 322 women living in three communities in Zazzau Emirate of Kaduna state, Nigeria in 2008. The three communities, Dakace, Shika Dam and Tsibiri, have a total population of 7,621. The community members are mainly Hausa-Fulani and of the Islamic faith. Their primary occupations are farming and fishing.

Systematic random sampling was used to select households, and simple random sampling via balloting was carried out in cases where there was more than one woman in a household who was eligible. All consenting women who delivered during the 24 months preceding the study were recruited after obtaining consent from village heads. Ethical approval was received from the ethical review board of Ahmadu Bello University Teaching Hospital (ABUTH),

Table 1. Socio-demographic characteristics (n = 332).

Characteristic	Frequency	%
Age		
<20	39	11.7
20-24	92	27.7
25-29	111	33.4
30-34	52	15.7
35-40	21	6.3
40^{+}	17	5.1
Parity		
1	54	16.3
2	52	15.7
3	46	13.9
4	37	11.1
>5	143	43.1
Education		
None	13	3.9
Quranic	203	61.0
Primary	64	19.3
Secondary	45	13.6
Tertiary	7	2.1
ANC attendance		
Yes	245	73.8
No	87	26.2
Place of delivery		
Home	292	88
Private clinic	15	4.5
Govt hospital	12	3.6
PHC	9	2.7
Prayer house	3	0.9

Zaria and from the ethical review board of the University of California at Berkeley, ABUTH's collaborating partner in the Population and Reproductive Health Partnership (PRHP).

A questionnaire adapted from NDHS was used to obtain information on the socio-demographic characteristics of the women and on their access to and utilization of reproductive health services. Information on complications of pregnancy and delivery, decision to seek care, and delays in getting care were also obtained. The data was analysed using SPSS 17.0. Descriptive statistics have been presented to describe the characteristics of the sample, the obstetric complications that they faced, and to provide details about their care-seeking behaviour.

Results

Socio-demographics and background characteristics

Table 1 shows the socio-demographic and clinical characteristics of the respondents. The mean age was 26 years and the mean parity was four children. The median age of first marriage was 15 years while the median age of first child birth was 17 years. Most of the respondents had received a Quranic education instead of having been enrolled in conventional primary school. The majority (73.8%) of respondents reported having had at least one ANC visit, which was more than double the proportion of north-western women reported having attended ANC at least once (33%), according to the 2008 NDHS[5]. Eighty-eight percent of women reported having delivered at home for their last childbirth.

Incidence of obstetric complications

During the 24 months preceding the survey, 41 women developed obstetric complication with a complication rate of 14.6%. Figure 1 shows the various types of obstetric complications reported by the respondents. Obstetric haemorrhage, primarily postpartum haemorrhage, accounted for 36.6% of reported complications. This was followed by high blood pressure and severe headaches. The fact that high blood pressure was the second most common complication supported the previous finding that nearly three-quarters of the sample said they had attended ANC. There were three complication types that are likely to have been related to pre-eclampsia (blood pressure, severe headaches, swollen hands and legs) but it was impossible to retrospectively draw any conclusions about the conditions that may have manifested in these symptoms. 'Fits' were described by 2.4% of women, and nearly 10% described problems that occurred with the placenta.

Common features of respondents facing complications

All of the women who developed complications (n=41) planned to deliver at home and none of them had a skilled birth attendant present at the onset of labour. Despite the fact that nearly three-fourths of the sample reported attending ANC at least once, none of the 41 women who developed complications received ANC, postnatal care, neonatal care or immunization for their babies.

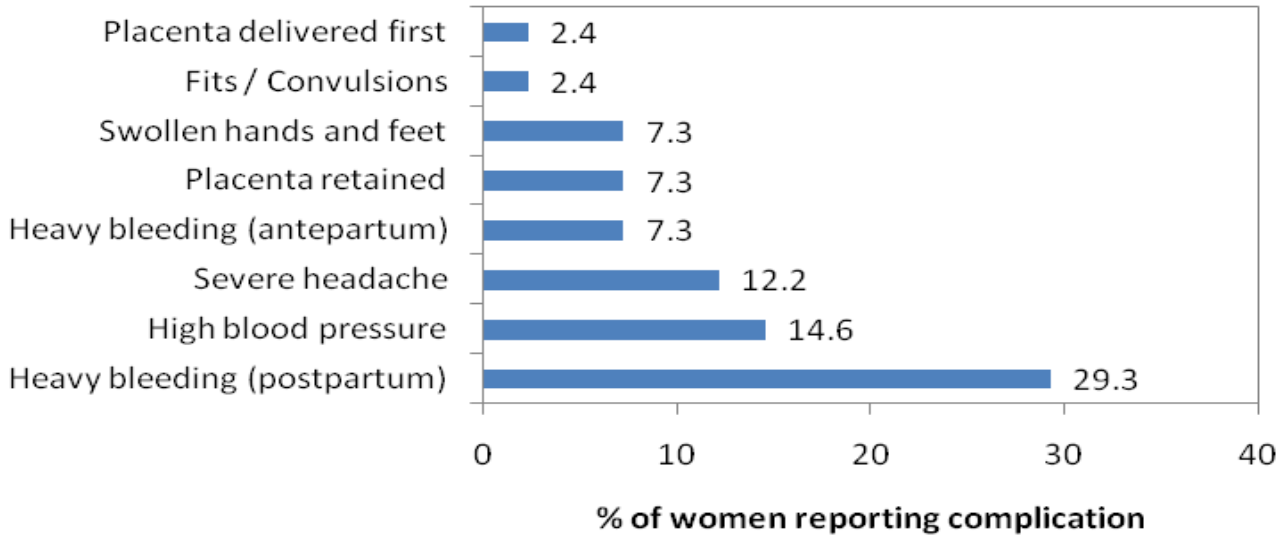

Figure 1. Obstetric complications at last birth, as reported by women (n=41).

Table 2. Actions taken by female respondents when complications occurred.

Initial action taken (n=44)	Frequency	%
Cannot remember	19	48.7
Consumed/applied herbs	14	35.9
Nothing/Waited for husband	8	20.5
Prayed	2	5.1
Rubbed abdomen	1	2.6
Further action taken (n=28)		
Sought help from doctor	9	32.1
Sought help from nurse/mid-wife	9	32.1
Sought help from other people	8	28.6
Sought help from a CHEW*	1	3.6
Sought help from a TBA**	1	3.6

*Community Health Extension Worker
**Traditional Birth Attendant

Initial actions taken

Table 2 describes the actions taken by respondents and their families following the development of complications. When asked what they did when they realized that something was wrong, the majority of the women (49%) were not able to clearly articulate (or remember) what they did. The second largest proportion of women (36%) said they consumed or topically applied herbal preparations. One-fifth of them did nothing except for waiting for their husbands to return. Two women reported that they prayed, and one woman said she just rubbed her abdomen to see if that would help.

Further actions taken

When women's initial actions did not yield positive results, 28 families decided to take further action. The decision to take further action was taken by the woman's husband in 72% of cases and by a health care provider in only 10% of the cases. Other people, most likely family members, took the decision in 17.2% of cases. Although 64% of women with complication tried to seek care outside the home from either a doctor or a midwife, only 26 women actually arrived at a recognised health care facility. Interestingly, only two women reported having sought help from either a Community Health Extension Worker' (CHEW) or by a TBA. CHEWs are government-employed health workers who are given two years training and are expected to do health outreach work in the community 70% of the time and be on duty at the local PHC the other 30% of the time. It is possible that there were no CHEWs present or only male CHEWs on duty when women experienced complications. It is also possible that the women in the communities do not trust the advice or skill levels of the CHEWs that were hired to serve their community.

Barriers to obtaining care

Table 3 shows the time intervals between: a) recognition of a complication and taking the decision to seek care, b) the decision to visit a facility and the arrival at the facility and c) moment of arrival to consultation by a health professional. Nearly 30% of women reported having to visit up to 2 or 3 facilities before finally being admitted in one.

Table 3. Time intervals from recognition of complications to receiving treatment.

Recognition-to-decision (n=24)	Frequency	%
Less than 1 hour	1	4.2
1 - 2 hours	14	58.3
More than 2 hours	9	37.5
Decision-to-facility arrival (n=26)		
Less than 1 hour	0	0.00
1 - 2 hours	25	96.2
More than 2 hours	1	3.8
Arrival-to-consultation (n=22)		
Less than 1 hour	0	0.00
1 - 2 hours	18	81.8
More than 2 hours	4	18.2

Decision not seek care

Among women who did not get to a hospital, there were several reasons they provided for not doing so. Thirty-five percent of the women said they had no money to go to a hospital, 10% said they lacked means of transportation, and 10% said that their past experiences at the health facility made them hesitant to return there.

Discussion

An important limitation of the study was the fact that data was only gathered from women who had survived the hazards of childbirth. Since this study relied on interview with women who had recently given birth, rather than verbal autopsy interviews with families of the deceased, no data was gathered on the women who died after developing complications, so the study includes no information about the length or nature of the delays faced by the women who died.

One unexpected finding was that none of the 41 (26%) women who ended up with complications reported having received any ANC services. Good quality ANC can control some complications by identifying problems and managing them early. It can also educate women about the warning signs to look out for. Postpartum haemorrhage, on the other hand, will occur in a certain proportion of home births, regardless of whether a woman attends ANC or not (unless the ANC package provides misoprostol tablets for PPH prevention).

Thus, it remains unclear why the 74% of women who attended ANC reported no complications and the 26% who did not attend ANC reported all complications. On a similar note, the women with complications did not get any postnatal care, neonatal care or immunization for their babies. In these villages, few women receive any type of postnatal or neonatal care. Immunization of children, on the other hand, is much more common, but at the time of the study, door to door immunization campaigns focused primarily on oral polio and most other immunizations had to be actively obtained from health facilities.

Addressing the knowledge gap

Long delays in reaching a referral facility are likely to be related to low levels of know-ledge. Families that lack sufficient knowledge about danger signs cannot determine the threshold of how much blood is too much, or how to know when labour has gone on too long. Prolonged second and third stage of labour is two important factors that have been found to be significantly associated with rates of PPH[24].

Women with a good level of knowledge about labour and delivery would be in a better position to explain which option might increase her chances of a good outcome[20]. In contrast, women with low levels of confidence in their knowledge may be more likely to defer to the opinions of primary decision-makers in the family, such as husbands and in-laws. As found by Butawa et al. in this issue, women's knowledge of maternal health in these villages is extremely low, and men's knowledge is even worse. In this context, even with the best of intentions, misjudgements regarding the severity of symptoms are likely to occur.

Increasing ANC attendance is one approach to improving knowledge. However, routine ANC, as presently practiced, may not be the most effective way of improving women's knowledge and promoting healthy behaviours during pregnancy. The standard, top-down approach is limited in its ability to truly serve clients' needs. ANC providers are equally challenged with huge client loads leading to rushed interactions. Clients from lower educational backgrounds might be intimidated by the hospital and the provider, and may not even understand what the provider is recommending. Despite time constraints, critical information such as information about danger signs and advice about how to set up an emergency back-up plan, may be even more important than providing haematinics when serving clients who are planning to give birth at home.

A small pilot project to assess the effectiveness of group-oriented, community-based ANC model that uses interactive and participatory methods to group education is currently being tested in one of the three villages in this study. Unlike 'health talks', the goal of this pilot is not only to provide health education and basic ANC but to provide women with a platform to discuss women's issues that are relevant to them and to start to work together to develop their own strategies to improve maternal and child health in their community.

Strengthening Linkages to EmOC

This study revealed a major gulf between the village

and the health facilities. The fact that it took most women in this study three to six hours to receive care in a hospital is a serious concern, especially considering the fact that hospitals are no longer than 40 minutes away. Postpartum haemorrhage was the most frequent complication reported. A woman who is bleeding actively could easily die in less than 3 hours if she does not reach a referral centre in time[1].

There is potential to increase linkages by using community based providers to bring women in need into appropriate facilities. Training TBAs to recognise problems and refer patients to health facilities with EmOC services could be a first step since TBAs may be present when complications arise and are trusted by the women who depend on them. Such improvements in the referral system could work better if the links between the various strata of the health system were strengthened. This is especially important in the communities around Zaria, because despite the communities' proximity to secondary and tertiary health facilities, women still present late when complications occur, or not all.

Overcoming Cultural Barriers

Another challenge that clearly emerged from this study was related to gender. As observed in an earlier study conducted in Maiduguri, Nigeria[11], a considerable number of women reported having waited for their husband to return before they could seek help, which contributes to the first delay. While this is an accepted fact of life in many northern Nigerian communities, working directly with men to educate and involve them as partners in improving maternal health could be a key strategy to reducing the first and second delay. In several states across northern Nigeria, a maternal and child health project implemented by Partnership in Promoting Routine Immunization and Nutrition (PPRINN) has shown considerable success in getting husbands to grant their wives 'standing permission' to go to a hospital if he is absent when an emergency strikes. In other countries as well, such as Guatemala and Nepal, efforts to mobilize men to take on direct responsibility for preparing in advance for potential obstetric emergencies had a positive effect on maternal and foetal outcomes[23].

In conclusion, this study highlights the complexities of the delays experienced by women in their efforts to seek care. Considering the magnitude of the delays and the fact that many women have to visit several hospitals (only to find that they are closed or unable to provide EmOC) the extraordinarily high rates of maternal mortality in northwestern Nigeria are not surprising.

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