Women's awareness of obstetric complications, preparations for delivery and utilization of skilled birth attendants in northern Nigeria

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Background

Maternal and child health outcomes in Nigeria are among the worst in the world, and Nigeria contributes approximately 10% of the global burden of maternal and child deaths (UNICEF, 2008). According to a recent multi-country study, Nigeria is one of few countries where the maternal mortality ratio (MMR) has actually increased from 473 (306-703) deaths per 100,000 live births in 1990 to 608 (372 – 946) in 2008 (Hogan et al., 2010). The situation is a particular cause of concern in northern Nigeria, where maternal mortality is estimated to be higher than the national average. According to the Maternal and Newborn Road Map based on the 2003 Nigeria Demographic and Health Survey, the MMR in 2003 for northern Nigeria was estimated at 1,287 per 100,000 live births; MMR in the North West and North East Zones of Nigeria was estimated at 1,025 and 1,549 deaths per 100,000 live births respectively.

The most maternal deaths in northern Nigeria are related to obstetric complications – including post-partum haermorrhage, infections, eclampsia and prolonged or obstructed labour – and complications of abortion (UNICEF, 2008). Most of these life threatening complications can be addressed if skilled health personnel are easily available and key drugs, equipment and referral facilities are available and easily accessible.

The three delays model identifies delay in decision to seek care, delay in reaching care, and delay in receiving care as critical in delaying access to effective interventions to prevent maternal mortality (Thaddeus and Maine, 1994). We focus on delay one of the three delays model of factors affecting maternal mortality. Awareness of danger signs in pregnancy and labour is an important entry door for skilled birth attendance and referral for appropriate and timely obstetric and newborn care (WHO, 1994; Perreira et al., 2002; Killewo et al. 2006).

Aims

The objective of this study is to understand the pathways through which the socio-demographic environment affects awareness of obstetric complications and access to skilled birth attendants. Specifically, we examine the association between (1) awareness of pregnancy, labour and delivery (LAD) complications, (2) number of women who made preparations for LAD, and (3) delivery with skilled birth attendant when complications are experienced; and a number of potential confounding

socio-demographic and other maternal factors such as maternal age, parity, gravida rank, experience of death of infant within 1 month of delivery, family socioeconomic status, access to cash income source, maternal literacy in any language, ownership of mobile phone, residence, and antenatal care (ANC) attendance. This information is necessary to guide programme planning aimed at improving access to and quality of health care.

Data and Methods

We conducted a household survey in 2009 of 7,442 women in three northern Nigerian states (Katsina, Yobe, and Zamfara) where maternal and child health indicators are particularly dire. The data were collected to support the efforts of the Maternal and Newborn Child Health (MNCH) Programme to reduce the unacceptably high rates of maternal, newborn and child mortality in northern Nigeria. In each state, the MNCH Programme phases capacity building and health system strengthening activities in clusters of Local Government Areas. As a result, the sample design needed to include enough respondents in these clusters to allow estimation of programme impact. For this reason, a stratified two-stage cluster, random sample survey was employed. The sample was designed to be representative of all women of reproductive age (15–49 years) in the three states.

Analysis focused on 5,083 women who had been pregnant in the five years preceding the survey. In order to assess the level of awareness of complications, we created indices to reflect knowledge of the critical pregnancy complications: Convulsions, vaginal bleeding, severe and lasting abdominal pain/cramps, severe headache or blurry vision, and absent fetal movement. Cross-tabulations of awareness of pregnancy complications by severity were performed against the number of complications known. A similar index was created for severity of LAD complications: Bleeding, convulsions, prolonged labor (greater than the average for age and gravity or >12 hours or prolonged stage 2 labor), and high fever. Cross-tabulations of LAD complications by severity were made against the number of LAD complications known. Chi-square test was used to determine associations between categorical variables and differences were deemed significant when $p<0.05$.

Preliminary results

Of the 94.7% who knew pregnancy complications, only 14% knew critical ones. Out of 77.6% who knew at least one LAD complication, 32% knew critical ones ($p<0.001$). In general, descriptive and logistic regression results highlight the importance of women's status (as measured by ability to earn cash income), ANC attendance, awareness of LAD complications, and preparations for delivery in influencing awareness of critical pregnancy complications. For example, for women who earned cash relative to their counterparts, the relative risk (RR) for awareness of critical pregnancy complications to no awareness of critical pregnancy complications would be expected to increase by a factor of 1.75 given the other variables in the model were held constant. Women who did not attend ANC were significantly less likely to be aware of both critical (RR=0.60) and non-critical pregnancy complications (RR=0.61) when compared with those who do not know any complications.

The results also showed that formal schooling had an influence on knowledge of LAD complications. That is, women with no formal schooling were 28% less likely (RR=0.72) to report

awareness of critical LAD complications than women without formal schooling. The RR for awareness of non-critical LAD complications was 0.59. Compared with women who were not literate in any language, the RRs of literate women who knew critical and non-critical LAD complications were 1.64 and 1.44 respectively. Having a cash source of income was associated with a high likelihood of awareness of critical (RR=1.83) and non-critical LAD complications (RR=2.23). Earning cash income was associated with 62% likelihood of preparing for delivery.

Conclusion

Awareness of pregnancy and LAD complications is an important step in efforts aimed at reducing the high levels of reproductive morbidity which lead to most maternal deaths in northern Nigeria. The woman's status within the family and her economic situation at large is a critical matter that is not only shaped by the socio-cultural environment but also determines her maternal health experiences. Because the vast majority of northern Nigeria families and households are organized according to patriarchal principles which identify the man as the head and breadwinner, the family income and the power to budget and spend are sternly male rights. This has a negative consequence on the women's decision-making ability including their health seeking behavior. Lack of formal education among majority of women as well as strict socio-cultural beliefs are critical challenges and largely determines the woman's negotiation power. Efforts to address reproductive health morbidities as well as child health challenges should take into consideration the socio-cultural environment in which women are placed in and specifically utilize radio and other communication channels as well as educational sessions targeting the whole community. Provision of formal education should be intensified as emphasized in the second millennium development goal.

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