Community Based Strategies to Reduce Maternal Mortality in Northern Nigeria

Researchers:

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Sector(s): Health

Location: Jigawa State, Nigeria

Sample: 96 rural communities; 7,000 women between the ages of 15-49

Target group: Children under five Mothers and pregnant women Rural population

Outcome of interest: Immunization Mortality Sexual and reproductive health

Intervention type: Information Health care delivery Preventive health

AEA RCT registration number: AEARCTR-0000006

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Partner organization(s): Planned Parenthood Federation of Nigeria

Despite global efforts to reduce maternal and neonatal mortality, the availability and utilization of maternal and child health care remains low in many low-income contexts, especially those marked by ongoing conflict and civil unrest. In northern Nigeria, researchers evaluated the impact of three community-based interventions designed to enhance uptake of maternal and child health services: a community health worker program, health educators with the provision of safe birth kits, and health educators with community dramas. While the community health educators increased utilization of maternal and infant care, health practices, and knowledge, none of the interventions improved maternal or child health outcomes.

Policy issue

Although reducing maternal and neonatal mortality has been a key policy goal over the last twenty years, improving health outcomes for pregnant women and newborns in low-income countries has been slow. The World Health Organization estimates that about 295,000 women died during and following pregnancy and childbirth in 2017; ninety four percent of those deaths occurs in low-resource settings, and the majority could have been prevented.[1] While the majority of these deaths can be prevented with adequate health care during pregnancy, childbirth, and the post-partum period, availability and utilization of these services remains low in low-income contexts. Low-trust in providers; inability to access health services due to transportation, logistical or financial constraints; and disagreements within a household are key barriers to the utilization of maternal health care. In contexts marked by political instability and violence, these barriers are further amplified.

Context of the evaluation

Maternal and neonatal mortality remains persistently high in Nigeria, accounting for 10 percent of worldwide maternal deaths. Northern Nigeria has one of the highest maternal mortality rates in the world, with approximately 1,012 maternal deaths per 100,000 live births. Pregnant women in northern Nigeria also have limited take-up of health services. For example, the 2013 Demographic and Health Survey reports that in Jigawa State, where this evaluation took place, only 7 percent of women delivered in a health facility compared to 36 percent of women nationwide.[2]

In response to low utilization of care, in 2009, the Federal Ministry of Health's Midwives Service Scheme (MSS) began deploying midwives to rural primary health centers to provide 24 hour maternity care. However, low use of maternal health services in this region persisted, reflecting broader challenges including weak health infrastructure; low literacy; low knowledge on danger signs during pregnancy, delivery, and the postpartum period; and a pattern of male dominance in care utilization decisions. Additionally, this region has been extensively affected by violence linked to Boko Haram since 2011, reducing access to quality health care.

A community health worker providing women in her community counseling and post natal care at her home.

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Details of the intervention

In 2013, researchers partnered with the Planned Parenthood Federation of Nigeria (PPFN) to test the impact of community health educators on the utilization of MSS health services and maternal and infant health outcomes. Researchers randomly assigned 96 communities located in the catchment area of the MSS facility to receive one of three variations of a community health educator program or to a comparison group that did not receive any intervention.

Community health educator program (CORPs) (24 communities): To address low rates of health care utilization and perceived low levels of trust between communities and facility staff, community resource persons (CORPs) conducted door-to-door visits to pregnant women. During these visits, CORPs provided information about the benefits of utilizing health services and recommended health practices, such as nutrition and danger signs during pregnancy, in part aiming to increase confidence in health care quality. CORPs were encouraged to include husbands or other family members in the educational visits, and were also responsible for identifying newly pregnant women. CORPs were women between the ages of twenty and 45 who were

married, widowed, or divorced and possessed a minimum of primary school education, and they received a one-week training and a small monthly stipend of NGN 2000 (US$5 at the time of intervention).

Safe birth kits and CORPs (24 communities): To provide a safer, more sterile environment for women during delivery, CORPs in this group provided birth kits to women in their third trimester of pregnancy. The kits aimed to both ease fears of pregnant women that the primary health center would not have adequate supplies for their delivery and to reduce infection for women who preferred to deliver outside of a facility. The kits included a plastic sheet for the woman to lie on during delivery, surgical gloves for a birth attendant, a razor and cord clamps to cut and tie the umbilical cord, clean gauze, a mechanical suction tube to clear secretions from the baby's airways, and other supplies.

Community drama and CORPs (24 communities): In addition to the CORPs program, in this group a series of community dramas intended to change social norms around maternal and child health were conducted. A professional theater group performed a series of shows about a pregnant woman's wishes to use facility-based care, but her mother-in-law opposed her choice. The dramas aimed to reach men and other community stakeholders who dominate health care decision-making, but who might not be well-informed about maternal health challenges.

From 2013 to 2015, at three days post-delivery, researchers assessed utilization of antenatal care and maternal and infant health since delivery. At 28 days, they assessed the mother's opinion about utilization of maternal health care, maternal and infant morbidity, and uptake of infant care practices. In 2016, researchers re-visited all women surveyed at baseline and collected information about recent births, maternal health, and the health of children born during the intervention period.

Results and policy lessons

The CORPs program increased use of maternal and infant care, enhanced health practices, and increased health knowledge. The program was more effective when supplemented with either the safe birth kit or community drama interventions, compared to the stand-alone CORP program. However, none of the interventions improved maternal or child health outcomes.

Coverage of CORPs programming: Given implementation difficulties amidst ongoing civil unrest, the interventions reached approximately 22 percent of women who had given birth during the study period. More women received visits from CORPs when birth kits (26 percent) or community dramas (23 percent) were also included, perhaps because CORPs were more motivated to identify and visit pregnant women. In the birth kit group, however, only a small fraction of pregnant women that received a visit from a CORP received the kit (10 percent) and used it (5 percent).

Uptake of maternal health services: Use of maternal health care and number of ANC visits increased in communities that received the birth kit and drama interventions. The probability of using antenatal care increased in both birth kit communities (6 percentage points) and in drama communities (9 percentage points) relative to 63 percent of women in the comparison group. There was no impact on use of antenatal care in CORPs only communities.

Knowledge of and attitudes towards maternal and infant health practices: The birth kit and drama interventions had a positive effect (up to 0.05 standard deviations) on the knowledge of pregnancy complications and attitudes towards health facility use. The programs increased the probability that a pregnant woman had a birth plan (an effect of 5 percentage points or 42 percent) and attended a newborn check-up in the first month (an effect of 12 percentage points or 41 percent). The number of immunizations administered to newborns increased in the birth kit and drama communities.

Maternal and child health: Despite increased use of health care, the program had no effects on self-reported measures of maternal morbidity during pregnancy, delivery, and postpartum period or neonatal morbidity up to 28 days following delivery. None of the interventions impacted the probability of stillbirths and infant and neonatal mortality. Increased use of health care did not result in any noticeable improvements in child health for infants and young children. Researchers suggest two reasons for the intervention's lack of impact on health outcomes. First, there could be limited benefits to using formal health in this setting.

Second, increases in health care utilization may not be large enough to generate a meaningful shift in health outcomes in a relatively short two-year period.

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1. "Maternal Mortality." World Health Organization, September 2019. https://www.who.int/en/news-room/fact-sheets/detail/maternal-mortality

2. Demographic and Health Survey. Nigeria, 2013.