Effective Communication to Improve Maternal Health in Kigoma, Tanzania

Thamini Uhai

Vital Strategies

APRIL 2023

Cover image: A photo used as part of the 2018 Thamini Uhai campaign, "Mjamzito na mtoto salama ni wajibu wetu" (A safe pregnant woman and baby is our responsibility.)

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About Vital Strategies

Vital Strategies is a global health organization that believes every person should be protected by equitable and effective public health systems. We partner with governments, communities and organizations to reimagine public health, and the result is millions of people living longer, healthier lives. Our goal is to build a future where better health is supported across all facets of our lives, in our families, communities, in our environment and our governments.

About Thamini Uhai

Thamini Uhai is a Tanzanian nongovernmental organization that works on improving maternal and newborn health in Tanzania. Its maternal health program has supported national efforts to reduce maternal and early neonatal deaths in Tanzania since 2006. Working with the government of Tanzania and non-governmental partners, Thamini Uhai builds capacity to provide high-quality, safe and reliable emergency obstetric and neonatal care in government facilities.

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Executive Summary

Tanzania has one of the highest maternal mortality ratios (MMR) in the world, and the Kigoma region has one of the highest in the country. To improve maternal health outcomes and reduce risk of death from pregnancy and childbirth-related complications in Kigoma, in 2014 Vital Strategies and the government of Tanzania proposed a mass media campaign to reduce delays in women receiving maternity care in health facilities, especially for pregnant women living in more remote locations. At the time, the rate of facility delivery in Kigoma was among the lowest in the country (46%).

To determine the most effective messaging to achieve the desired social and behavior change objectives, nine radio public service announcements with three different message topics related to childbirth (facility delivery, birth planning, danger signs) and three variations in message tone (negative consequences, authoritative, aspirational) were tested in 12 focus groups (see Box 1 for study objectives). These focus groups were conducted with key pregnancy decision-makers, including pregnant women and male and female caregivers. This was the first study to systematically examine the influence of message tone in maternal health communication campaigns. Our findings offer governments, public health professionals and other stakeholders an idea of the messaging that works to change attitudes, beliefs and behaviors to encourage delivery in health facilities.

BOX 1

Key Study Objectives

The objectives of the 2014 concept testing study conducted by Vital Strategies and the government of Tanzania were to:

- Better understand the sociocultural barriers to health facility delivery in Kigoma, Tanzania and how to address them.
- Determine the public service announcement messaging that would be most effective in addressing these barriers and promoting birth planning, recognition of danger signs and health facility delivery in the context of Kigoma, Tanzania. Ultimately, this concept testing would inform the development of a campaign to:
  - increase positive attitudes toward facility delivery;
  - increase understanding of the risks of home delivery;
  - empower and motivate pregnant women to take specific, concrete steps to plan for birth (identify health facility, transportation and save money), and increase their knowledge of the danger signs of complications during pregnancy and delivery;
  - emphasize the need to seek care immediately should danger signs arise; and
  - contribute to increasing the number of women giving birth in health facilities.
- Contribute to scientific knowledge on the efficacy of various message tones for maternal health communication.

Introduction

Background

Maternal mortality is an urgent public health challenge, which the world is not currently on track to meet. Every day, 810 women worldwide die from complications related to pregnancy and childbirth (1). For each death, many more women experience life-threatening complications and adverse delivery outcomes, including fetal and neonatal deaths (1). Most maternal and infant deaths occur in low-resource settings, and most are preventable with evidence-based interventions available in well-functioning health facilities (2).

Two-thirds of the world's maternal deaths occur in Sub-Saharan Africa (2). Within this region, Tanzania has among the highest rates of maternal mortality; a woman dies from obstetric complications almost every hour (3, 4). With an estimated maternal mortality ratio (MMR) of 524/100,000, Tanzania is not on track to meet its Sustainable Development Goal (SDG) of reducing its maternal mortality ratio to 140 maternal deaths per 100,000 live births, by 2030 (4, 5).

Maternal deaths affect not only the mother and the newborn child, but also the well-being of the family. The death of a mother sets off a chain of loss that harms her children's health, education and future opportunities—particularly for female children, who are more likely to assume greater household responsibilities and are at greater risk of early marriage, early pregnancy and pregnancy-related complications (6, 7).

In Tanzania, most maternal deaths occur during the intrapartum and immediate postnatal period, largely from hemorrhage, eclampsia and sepsis (8, 9). Therefore, an important strategy to reduce maternal deaths, as well as perinatal deaths, is to increase the number of women who give birth in well-functioning health facilities that provide good-quality care (10).

However, at the time of this study, the health facility-delivery rate was only 63% nationally, and as low as 46% in rural areas like Kigoma district (11). In Kigoma, despite the majority of pregnant women seeking antenatal care at a health facility (99.2%), less than half of women delivered in a health facility (12). Nationally, those who were least likely to deliver in facilities included women who were older (35-49), resided in rural settings, received less education and whose households were among the lower wealth quartiles (11).

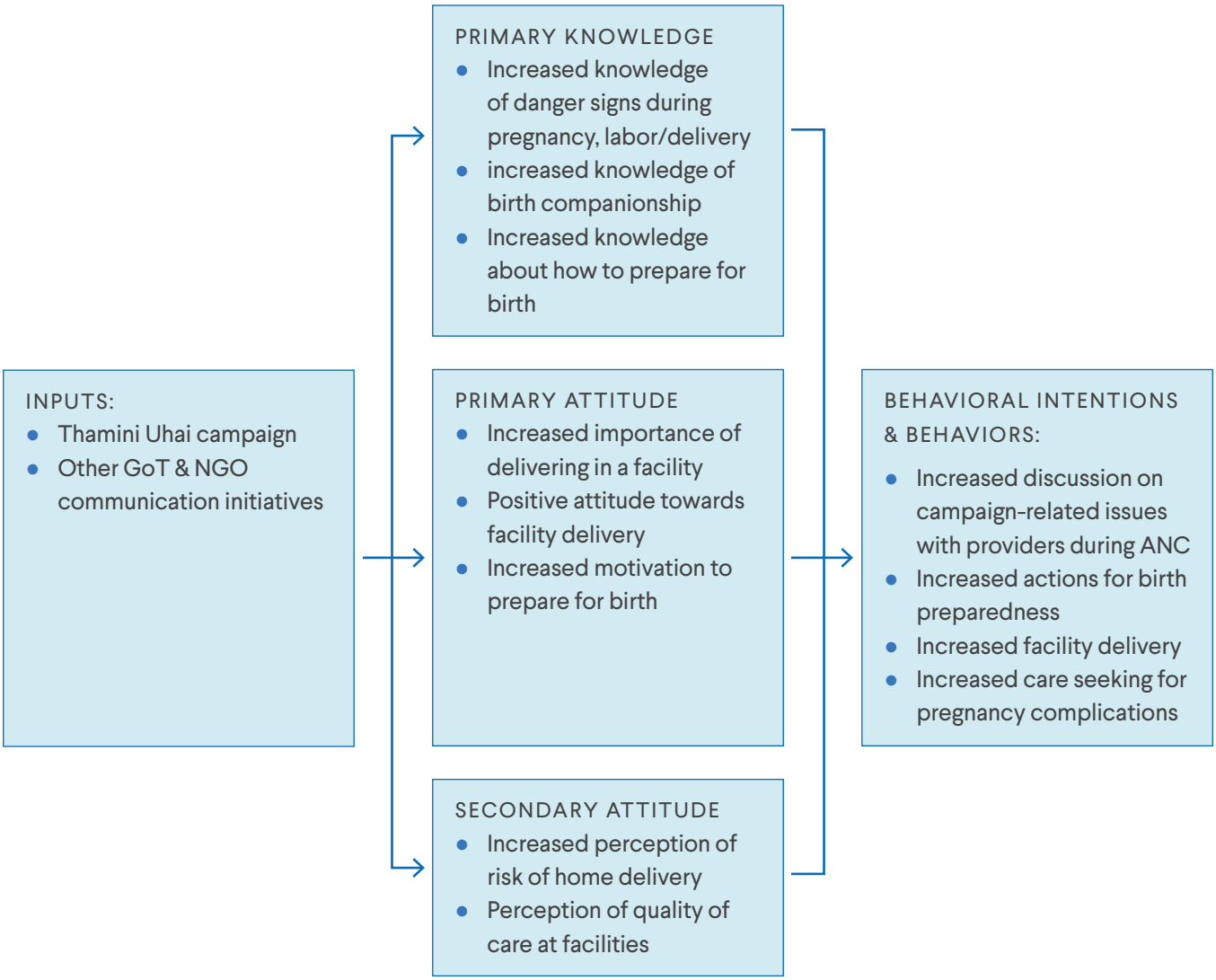
To improve maternal health and reduce mortality, from 2006 to 2019, the World Lung Foundation (now known as Vital Strategies)* supported the government of Tanzania to meet the need for good-quality emergency obstetric care in regions such as Kigoma. Rural health centers and district hospitals were upgraded and women's access to comprehensive emergency obstetric care improved in Kigoma, largely by decentralizing comprehensive emergency obstetric and newborn care services (CEmONC) to the health center level to increase geographic access. This was associated with some increase in health facility-based delivery (13, 14). However, even as services improved at the local level, facility-based delivery did not rise as quickly as needed to reach the government's maternal health goals and the SDG, at least in part due to low demand. In response, the program sought to create a communication strategy to increase demand.

Maternal mortality has been associated with three points of delay in women with obstetric complications seeking or obtaining care (15). The first occurs at the household level when the decision to go to a health facility is delayed due to low risk perception of home birth, lack of knowledge of obstetric danger signs, financial constraints, gender dynamics and cultural beliefs against delivery in health facilities. The second occurs when transportation to reach the health facility is delayed, and the third, when the health facility's lack of resources, capacity or

* The World Lung Foundation joined together with The Union North America in 2016 to operate under a new corporate brand: Vital Strategies. In Tanzania, the maternal health program was rebranded in 2016 from World Lung Foundation Tanzania to Thamini Uhai, a Kiswahili phrase that means "value life."

trained staff results in a delay in the delivery of life-saving CEmONC (15, 16, 17, 18). The Thamini Uhai ("Value Life") program was designed to address the three points of delay, with the program's strategic communication activities focusing specifically on addressing some elements of the first and second delays—changing attitudes and beliefs toward facility delivery and prompting changes in behavioral intentions and behavior to secure transportation and make other birth preparations (see Figure 1).

Figure 1. Thamini Uhai Program Theory of Change



Source: Vital Strategies, Thamini Uhai. Theory of Change.

While structural barriers–such as finances, distance to health facility and the availability of transportation–are significant factors in access to care, a number of sociocultural factors also influence decisions about place of birth. These include positive beliefs and low risk perception about home deliveries and traditional birth attendants; ambivalence toward health facilities and their staff, often because of mistreatment and being disrespected by health personnel and poor quality of care; a lack of understanding of the importance of giving birth in a facility with quick access to good-quality CEmONC, if needed; and traditional and cultural beliefs that maternal health is only the responsibility of women, who due to gender-based constraints may not be able to receive facility-based care even if they want to do so (19, 20, 21, 22, 23, 24, 25).

Theory of Strategic Social and Behavior Shange Communication

Supply-side interventions to strengthen service delivery should be paired with demand-side interventions that create a culture of care seeking for maternity care. In Thamini Uhai's case, it was important that the mass media campaign that was developed was launched after the quality of health facilities was improved, so that women, or others making decisions about where to deliver, would not avoid facilities due to their poor reputation. Theory-driven communication campaigns that are launched at strategic times can increase knowledge and change attitudes that result in long-term behavioral changes. Vital Strategies' strategic communication process for campaign development, which has been used to develop more than 600 mass media campaigns in tobacco control, road safety, maternal health, and other health areas, is an evidence-backed, multi-step process that begins with identifying the campaign's objectives and culminates with evaluating whether they were achieved and capturing learnings for future campaigns.

Vital Strategies uses a socio-ecologic lens to evaluate and address the complex interplay between people's health knowledge, attitudes and behaviors and the social, cultural and economic contexts within which they live. Our mass media campaigns are grounded in social sciences research and based on formative research that explores people's attitudes and beliefs toward health issues.

Mass media campaigns are a critical intervention to address behaviors related to health risks, including for maternal health (26, 27, 28). They play a vital and supportive role by increasing knowledge, addressing sociocultural barriers (see Box 2 for example) and changing attitudes and social norms, and engendering discussion of the topic in families and communities. In Sub-Saharan Africa, mass media campaigns have successfully contributed to increasing the number of women who give birth in facilities and pursue testing for HIV and increasing the participation of male partners in antenatal care, childbirth and postnatal care (29, 30).

BOX 2

Gender Norms As A Sociocultural Barrier to Facility Delivery

Gendered power dynamics that affect social norms and responsibilities, decision-making and access to resources affect both men's and women's health-seeking attitudes and behavior, particularly when it comes to maternal, sexual and reproductive health. Across 48 countries, many of which were in Sub-Saharan Africa, the most common reason women give for not delivering in a health facility was that it was deemed "not necessary" by the decision-maker in the household—who often are men; this answer far surpassed reasons of access and cost (31).

In Tanzania, men tend to be the gatekeepers and decision-makers for their households and families, which includes controlling finances (32, 33). Lacking control over household finances means that some women may not be able to act upon their decisions regarding where and how they give birth (16). Studies have shown that male partners' engagement in maternal health services has a positive impact on women's use of services (34). Strategic communication, with its proven ability to change behaviors and promote societal change, offers a tremendous opportunity to influence gender dynamics around maternal health.

Mass media campaigns can create change directly, by influencing individual attitudes and behaviors, and also indirectly, by influencing public narratives that lead to supportive social norms and policies, including the allocation of resources (35, 36). The tone of mass media messages, and in particular the emotions they elicit, play an important role in a communication campaign's effectiveness (37, 38, 39). However, to date there has been little or no systematic examination of the influence of message tone in maternal health communication campaigns.

Methodology

Study Design

Nine radio public service announcement concepts, composed of three different message topics and three variations in message tones for each (see Table 1), were developed and tested using a qualitative focus group discussion methodology. The first series sought to communicate the importance of health-facility deliveries; the second series, the importance of making birth plans; and the third, how to recognize danger signs during pregnancy (see Table 1 for descriptions of the PSA concepts). Within each series, each concept was developed using one of three message styles: "authoritative," in which messages were delivered by an authoritative figure and were expected to generate neutral emotions; "aspirational," which focused on the positive consequences of the desired action and were expected to generate hope, optimism and confidence; and "negative consequences," which highlighted the potential harms of inaction and were expected to generate fear, concern and sorrow. All concepts were tested using a standardized protocol. To minimize order effects during message testing, the order of the sets, and the order of concepts within each set, was systematically varied across groups. All nine concepts were in Kiswahili and were one-minute long.

Table 1. Descriptions of the radio public service announcement concepts tested

PSA Name	Style	Description
Facility Delivery		
Baba Zawadi	Negative consequences	A woman in labor moans "I can't, I can't anymore." Her mother encourages her. Then her aunt says quietly and anxiously to the mother, that the daughter's bleeding is a bad sign and that they should take her the health facility. The mother runs to get the husband, Baba Zawadi, saying he must hurry. He agrees. They go to the hospital to get help and both mother and baby survive. Baba Zawadi acknowledges the importance of delivering at a health facility—realizing he could have lost his wife and the baby.
Mr. Kandindi	Authoritative	Mr. Kandindi's wife is in labor at home, moaning in pain. Mr. Kandindi's mother comforts and encourages her daughter-in-law, then informs her son that they are going to the health facility. He reacts in anger, saying he had not given permission, and that there is no point spending money to take her to the health facility when she can deliver at home. His mother tells him firmly that giving birth at home is dangerous, and complications are unpredictable, and that the health facility services are excellent and reliable for both mother and baby. He resists, but then gives in to his mother's authority, and they head out to the health facility.
Fisherman Chegu	Aspirational	Fisherman Chegu runs into an acquaintance and tells him that his wife is at home experiencing troubles with her pregnancy. The acquaintance tells Fisherman Chegu to rush her to a health facility so she can deliver safely. Fisherman Chegu confidently replies that his wife is in the care of a traditional midwife so there is nothing to worry about. His acquaintance tells him that obstetric emergencies are never predictable and that his wife needs care, to which Fisherman Chegu replies that all his other children were delivered safely home. The acquaintance say that that does not mean that she will deliver safely this time and that Fisherman Chegu should plan early ahead so that his wife delivers in a hospital where she will be given skilled medical help in case of an emergency during delivery.
Birth Plan		
Too Late to the Health Center	Negative consequences	A man rushes into the health facility, calling out that his wife is in bad condition and is in pain. The nurse asks him how long she has been in labor. He says the labor started yesterday. The nurse gently asked him why they are so late in coming to the health center. He says, ashamed, that they did not have money for transportation. The wife moans, weakly, "I told you we should have prepared." The nurse tells the husband that they might lose the baby, but they will try to save the lives of mother and child. The wife, weaker, says, "My husband, I carried this child for nine months, must we now go home empty-handed?" The husband realizes that they should have prepared for delivery and comforts his wife. As the spot ends, both her and the baby's futures are uncertain.

Women's Money Lending Club	Authoritative	The chairwoman of the moneylending club announces that the treasurer is circulating with a basket so woman can make their contributions. A woman whispers that she cannot contribute this time, and the treasurer angrily tells the chairwoman this news. The pregnant woman says that she is near to term and that she and her husband are saving for a facility delivery. The chairwoman congratulates her on her foresight and reminds everyone it is important to plan ahead for transportation and other needs for a safe delivery, and for the needs of mother and baby after delivery. The women cheer!
Striker or Goalkeeper?	Aspirational	A father and son are playing football in the front yard, when the neighbor comes out to converse. The neighbor says he can't wait to play football with his son, to which the father replies that it will be any day now because his wife looks very close to giving birth. The neighbor replies excitedly that it's true and they have already saved money for transport to the health facility and will go in a few days to buy supplies. The father is impressed and exclaims that he is well prepared. The neighbor replies that they have been regularly visiting the health facility for antenatal care and that the service provided is good and dependable. The father replies that he knows his responsibilities well, to which the neighbor says jokingly "Of course, I must bring a striker into this world!"
Danger Signs		
Kalunde	Negative consequences	Kalunde wakes her snoring husband, crying out that she is bleeding. He takes her to the health facility, where the nurse assures him they will take care of her. The next day, Kalunde tells the nurse she is feeling much better. The nurse tells Kalunde and her husband about the signs of complications during pregnancy, and that these complications can happen to anyone and put the lives of the mother and child at risk if they are not taken care of. The nurse explains the importance of taking action in case of certain danger signs such as bleeding, extended pain, and the baby not "playing" (moving) in the womb. The husband comments that it's important for women to come to the health facility early in case of these signs.
Knitting The Blankets	Authoritative	Tunu, a pregnant woman, is at home when her aunt comes to visit. Tunu tells her aunt that she would like to start a blanket knitting business and shows her some of the rose-patterned blankets she's knit. Her aunt asks why the lines are so crooked and says she is not sure she will be able to sell them. Tunu tells her aunt that she's been experiencing blurry vision and a pounding headache. Her aunt replies that those are very serious danger signs in pregnancy and that they must immediately go to a health facility.
Waiting for News	Aspirational	A woman is in labor at a health facility, and her husband waits anxiously in a waiting room. He asks for news of his wife. A nurse tells him that his wife experienced some complications during delivery but that she delivered safely, and now mother and baby are doing fine. The husband lets out a big sigh of relief and thanks God. A woman replies that he should definitely thank God that they came to the health facility because if this had happened at home it would have been very dangerous. The nurse agrees that they made a very wise and important decision to come early to the health facility to deliver and takes him to see the baby who is doing well.

Study Date and Location

Twelve focus groups, consisting of 8 to 10 participants each, were conducted from July 11 to 17, 2014, in rural and urban locations in Kigoma, Tanzania. The focus groups were conducted in Kiswahili, by Consumer Options, a market research company.

Study Population

The study population included 56 pregnant women, 24 male caregivers of pregnant women and 16 female caregivers of pregnant women. There were 96 participants in all, all between the ages of 20 to 51 years old. Most pregnant women were between 20-30 years old [15] and 41-50 years old [15]; most male caregivers were between 41 and 50 years old [9] and 31 and 40 years old [8]; and most female caregivers were 51 years and older [8]. Most pregnant women [40], all male caregivers [24] and half of the female caregivers [8] had a lower income.

Sampling Method

Participants were recruited using locally appropriate convenience sampling methods. Groups were divided by location (rural vs. urban), participant type (pregnant women, male caregivers, female caregivers), socioeconomic status (low/mid vs. high).

Data Collection Procedure

An experienced female moderator led all focus group discussions. Before initiating the study, it was described, and informed consent was obtained from participants. Participant demographics were recorded first. In each group, all nine radio PSA concepts were played and participants were asked to undertake a rating exercise. Each group then discussed their pregnancy-related experiences, focusing on sociocultural barriers to facility delivery. This initial discussion was designed to make the participants comfortable with the subject and to confirm some of the contextual data on which the message development had been based. Radio PSA concepts were then played according to their pre-determined order in sets of three.

Study Measures

The PSA concepts were rated according to the following measures: how easily the key messages were understood; whether it felt personally relevant and taught something new; whether it was culturally appropriate, realistic and relevant; what emotions it elicited; whether it had an impact on behavioral intentions and behaviors and support for specific policies; and the specific features that contributed or detracted to these factors. Within each set, after each concept was played, participants rated it on five-point scales (ranging from strongly disagree to strongly agree) for each of the measures. After participants rated the first concept, the second concept was played and rated, and then the third. The goal of these individual ratings was to help participants reflect on the concepts and form independent assessments before discussions. Due to the small sample size, and the fact that most of the low-literacy participants required moderator assistance, the ratings were treated as a qualitative exercise rather than quantitative. Once each concept within a set was rated, participants engaged in a group discussion of all the concepts within that set on each of the key measures. This process was then repeated for the remaining two sets of concepts.

Data Analysis

All focus group discussions were audio recorded and transcribed. The moderator's and assistant's notes were examined. Senior researchers from Consumer Options created an initial list of codes that were then applied to the remaining transcripts using grid analysis. A subset of this study's authors reviewed the codes and examined differences among subgroups. Concept effectiveness was assessed based on the attributes discussed. Of these attributes, emotional engagement and ability to generate interpersonal communication, attributes which have been shown to be predictive of advertising effectiveness (40, 41), were considered particularly important in differentiating the effectiveness of the PSAs. For our findings on the three delays to care, transcripts were retroactively coded to identify themes.

Findings

The Three Delays to Facility Delivery

Focus group discussions helped elucidate some of the factors, both structural and sociocultural, that may delay or prevent pregnant women from delivering in health facilities (see Table 2). These factors, paired with this study's findings on messaging style to address some of them, can be used to inform the development of future campaigns on developing birth plans, identifying danger signs and delivering in facilities.

Socioeconomic/Cultural Barriers

Participants frequently mentioned financial barriers to receiving facility-based maternal health care. Pregnant women said they faced challenges saving enough money for transportation to the health facility, and for the supplies they are required to bring with them for delivery (basins, gloves etc.). Some pregnant women expressed that saving and other pregnancy preparation was being left entirely to them, with little or no input from their male partners.

Pregnant women and female and male caregivers all mentioned unfaithfulness in marriage as a barrier to male participation in birth planning and delivery. Several participants mentioned that men may not accompany wives to the health facility due to the required HIV test, both out of fear of the results and associated stigma and the potential discovery of their unfaithfulness. Some male caregivers also expressed deference to the opinions of older women, including traditional birth attendants, as to where the pregnant woman delivers. Participants also frequently described the central role that neighbors play in assisting pregnant women in getting to facilities, particularly when men were not active participants.

Participants mentioned that some people believe that visiting or delivering in health facility is only necessary if there are complications during pregnancy, which suggests a need for further sensitization to the fact that obstetric complications can arise unexpectedly and that most complications cannot be prevented. Pregnant women also expressed that women who have successfully delivered at home may not see the need to have future deliveries in the health facility.

Accessibility of Facilities

Rural participants described the distance of health facilities from their home as a barrier to facility delivery. The closer proximity of traditional birth attendants made them an easier choice. Some pregnant women expressed that if they had friends or relatives who lived in town, they would move in with them as their due dates approached to be closer to facilities. However, for those without such connections, the distance may be a strong deterrent to delivering in facilities. Several participants described the challenges of securing transportation to a health facility should labor began in the middle of the night.

Quality of Care

The fact that pregnant women are required to bring their own supplies (basins, gloves, etc.) to the health facility and that they did not have the means to purchase them was a deterrent. Another significant barrier to facility delivery, participants said, was the fear of being mistreated by staff. They told both personal stories and stories that they had heard about verbal abuse pregnant women received from health facility staff, namely nurses. In contrast, traditional birth assistants were perceived as being kinder and more caring. The fact that companions from home were not permitted in delivery rooms, but are during home births, was also a deterrent to facility delivery (see Box 3).

BOX 3

Thamini Uhai/Vital Strategies' Birth Companionship Initiative

When women have a trusted companion with them throughout labor and delivery, it leads to better health outcomes for mothers and infants. Yet many countries lack national guidelines promoting birth companions in health facilities. Tanzania was among them, until the Thamini Uhai/Vital Strategies team introduced birth companions in health facilities in Kigoma. The pilot was conducted between 2017 and 2018, several years after this study. The results show that it was very successful, with most women at intervention sites reporting that the presence of a companion improved their labor, delivery and postpartum experience. Almost all women who had a birth companion said they would return to the facility for care in the future and would recommend the facility to others. There was also a 2% increase in the number of deliveries at the intervention sites, compared to a 6% decrease at comparison sites where there were no birth companions. For more information on the results of the pilot, read our paper in BMC Pregnancy and Childbirth.

Table 2. Factors identified in focus groups that affect utilization and outcome of facility services

Factors Affecting Utilization and Outcome	Themes Identified in Discussions	Quotes from Participants
Socio-economic/Cultural Factors	Financial challenges	"Like delaying to go to the hospital may be because your income is low. And when you get a Good Samaritan who agrees to help take you to the hospital with a vehicle you still end up delivering in the vehicle" *- Pregnant woman, rural Kigoma*
	Lack of involvement by men in pregnancy	"One of the challenges is our husbands leaving everything to us in terms of preparation. They don't really get involved during the pregnancy." *- Pregnant woman, pilot*
		"There are some whose wives go into labor at night and the wife has to wake up the neighbor to take them to the health facility while the husband is there sleeping." - *Female caregivers, Kigoma*
		"That means it is you as the woman to put plans in place and yet may be at times you do not even have the strength to look for money. So you may decide not to go to the hospital because you don't have the gloves, you don't have the mackintosh and that can be a problem because of our men" - *Pregnant woman, rural Kigoma*
	Visiting the health facility is only necessary if there are complications	"If your pregnancy doesn't have any complication then one might not see the need to go the health facility earlier, they'll wait until they are six or seven months pregnant." - *Pregnant woman, pilot*
		"The midwives are really good when it comes to helping a pregnant woman deliver. The only problem comes when the woman has complication but if there are no complications during birth, the midwives are much better than the nurses at the health facilities." *- Female caregiver, urban Kigoma*
	Previous successful home deliveries means there is no need to visit the health facility	"But it is us the women who even choose to go to them because may be you feel the first delivery was successful now it means even the rest that follow will also be successful." - *Pregnant woman, rural Kigoma*

Socio-economic/ Cultural Factors (CONTINUED)	Unfaithfulness and fear of HIV testing	"The reason why a man can do that is when they are not faithful in their marriage. Some of them when they are informed by their wives to accompany them to the clinics they immediately feel the reason is to go for a test and they fear being tested HIV positive and what if they are found to be positive, what happens?" - *Male caregiver, rural Kigoma*
		"Some say that is a waste of their time, others say that that is solely up to the woman to ensure that she visits the clinic. But I think what they fear most is the HIV test that is carried out when they visit the clinic for check-up." - *Pregnant woman, urban Kigoma*
	Deference to older, more experienced women in the community	"I also think that it's just a culture in some areas to give birth at home. So long as there is an old woman or a mother-in-law, they don't see the need to take the pregnant woman to hospital unless she develops complications during birth." - *Male caregiver, urban Kigoma*
Accessibility of Facilities	Traditional birth attendants in the community are more easily accessible than facilities	"That might happen if the pregnant mother doesn't go to the clinic on time for delivery and so when labor kicks in, they rush to the midwife who is normally easier and faster to reach than taking her to the health facility." - *Pregnant woman, rural Kigoma*
	Facilities are located far from rural locations	"Me I live 10 kilometers away from this facility. That time you can call for a vehicle and you are told there is no vehicle and that is the time my wife is about to deliver, so how do you help that situation." - *Male caregiver, rural Kigoma*
		"But when you do not have a brother completely in town who stays near the Health Facility then you will just have to wait until such a time the labor pain will start, but don't wait until such a time that the pain is so severe that is when you start looking for a vehicle..." - *Pregnant woman, rural Kigoma*
	If labor begins at night, it's even more challenging to find transportation	"I delivered one of my children at home. It was late in the night and I couldn't find means to get me to the hospital." - *Pregnant woman, rural Kigoma*

Quality of Care	The requirement that expectant mothers bring their own equipment for delivery (gloves, basins)	"Other times it depends on the life you live because of lack. Sometimes you feel low because when you reach there the nurse will ask you the basin and you don't have, the gloves, you don't have and so you may decide to just stay at home. " - *Pregnant woman, rural Kigoma*
		"They should add equipment in our hospitals. There are those who come from the villages and they reach here in the night, so where are they expected to buy things like mackintosh, gloves etc." - *Pregnant woman, rural Kigoma*
	The lack of emotional support during labor	"There are those who will tell you I can't go to the hospital because they don't give the attention you require when in labor, you will push by yourself until you deliver but if you deliver at home, there's someone will hold your leg, someone else will hold your back, at least they will support you until you deliver." - *Pregnant woman, rural Kigoma*
	Mistreatment by nurses and other health facility staff	"The midwives are more caring than the nurses though it's not all nurses who are like that, there are good nurses. There are some nurses who will ask the pregnant women 'Why are you making noise here? Am I the one who impregnated you?' and such stuff. But we've never had such cases with the midwives." - *Male caregiver, urban Kigoma*
		"Some do that because when they go the health facilities they are usually mistreated by the nurses, that is one of the reasons. For instance there was a woman who was telling us that when she visited the hospital to deliver, there was a nurse who slapped her and that made her decide never to deliver at the hospital again." - *Pregnant woman, urban Kigoma*
		"We know how to do it and safely so. But when you go to the health facilities they mistreat and abuse you telling you 'Sit properly, did we ask you to get pregnant? 'That never happens with the midwives, they will support and help you through the entire process." - *Female caregiver, urban Kigoma*
	Understaffing at health facilities	"It's surprising that a pregnant woman can be rushed to the hospital but on reaching the hospital, there are no nurses or anyone to take them to the wards. I've witnessed about four women delivering just outside the hospital. They reach the hospital in serious labor pains, no one tends to them and in the process they end up giving birth while waiting for the nurses and the nurses only show up when they see the baby coming out." - *Male caregiver, urban Kigoma*

Message Tone and Concept Effectiveness

Overall, the radio spots that communicated the negative consequences of inaction and generated strong concern and negative emotions were found to most effectively communicate the importance of health facility-based delivery, the need for birth planning and how to recognize danger signs.

Among both the series of PSA concepts that addressed danger signs during pregnancy and birth planning, the negative consequences ads "Kalunde" and "Too Late to the Health Center," were identified as the most effective. In the series that focused on facility delivery, the authoritative ad "Mr. Kandindi" was identified as the most effective. However, it should be noted that while "Mr. Kandindi" was primarily executed in an authoritative style, its depiction of a woman in a difficult labor also raised concerns about the potential negative consequences, and this aspect was discussed extensively during the focus groups. Across all concepts, participants appreciated quick action on the part of stakeholders, including husbands, aunts and mothers-in-law, to avoid potential negative consequences.

MR. KANDINI:

"She did a good thing, the daughter-in-law was in labor and she decided to rush her to the health facility." - *Pregnant woman, rural Kigoma*

BABA ZAWADI:

"The man realized very fast that there was a problem and rushed his wife to the health facility. But if he had delayed and let the wife deliver at home, and just like a famous Kiswahili saying says 'Giving birth at home looks like heroism but it can be misleading' So if he followed the misleading instructions, then he may have lost his wife and the child too."
- *Male caregiver, rural Kigoma*

"Too Late to the Health Center," which was the only PSA concept of the three without a clear "happy ending" where the negative consequences were averted, elicited strong emotions and the desire to immediately change behavior to implement a birth plan. Participants felt that they did not want to experience what the couple faced: losing their child because they lacked a plan. Participants also reacted strongly to the husband not listening to his wife when she told him of her pain; pregnant women noted that the pregnant woman should not have depended fully on her husband and should have been involved in the planning, which encouraged them to take action to begin to plan.

TOO LATE TO THE HEALTH CENTER:

"I've learnt that we need to make early preparations so that we don't end up like that pregnant woman who was rushed to the hospital the last minute."
- Pregnant woman, rural Kigoma

"So from the advert, you can see that the woman lost the baby because she depended on the husband to provide everything which shouldn't have been the case, she should have kept some money aside as well..." *- Pregnant woman, pilot*

"We need to be prepared and plan for what is ahead of us. And that is why that man lost the baby because he had not planned. He did not even have money for transport or fare. But if he had prepared and planned himself I think everything would have gone on well." *- Male caregiver, rural Kigoma*

Of the three types of message tones, the aspirational PSA concepts tended to elicit the least discussion. A significant body of recent evidence in the health communication literature has found that risk perceptions are key to driving social and behavior change (42, 43, 44, 45). Heightened vulnerability to negative consequences and the imminence of that risk is found to be important for generating interpersonal discussion—an important precursor to social norm and behavior change—and motivating action (46).

Pregnant women found all the danger signs that were featured in the concepts relatable, including excessive bleeding, eclampsia and the baby being in the wrong position. However, excessive bleeding resonated the most as a warning sign since it is a commonly known indication of something gone awry during pregnancy. Many participants were not aware of the danger signs of pre-eclampsia/eclampsia and expressed that they appreciated learning that vision loss and swelling are both danger signs.

BABA ZAWADI:

"The adverts were easy to understand because they touched on real issues that affect us as pregnant women. For instance, there was that woman who lost too much blood while giving birth at home and the aunt had to call the husband so that they could rush her to hospital." *- Pregnant woman, rural Kigoma*

KALUNDE:

"I liked the second one because blood is a very important component in our life and when one over-bleeds then they are most likely to lose their lives. So that touched me."
- Female caregiver, rural Kigoma

KNITTING BLANKET:

"From the third advert where the pregnant woman had poor vision, I never knew that poor vision was a warning sign in pregnancy." *- Pregnant woman, pilot*

WAITING FOR NEWS:

"The same one, the child laying in the wrong position, you have severe pains. Me I have experienced the two laying in the wrong position and bleeding but the former come with so much pain." *- Pregnant woman, rural Kigoma*

A common feature of the successful concepts was the depiction of men and families in positive, proactive and supportive roles, and the portrayal of pregnancy and childbirth as concerning more than the woman giving birth. Evidence suggests that improving knowledge among both women and their male partners can increase the likelihood of facility delivery (10, 47, 48). In Tanzania, men often control financial resources and make household decisions, and therefore influence whether women and children receive health care (49, 50, 51). In fact, the male partners in our focus groups were more likely than female caregivers to feel that they were fully responsible for the decisions of the pregnant woman and less likely to accept that those decisions were not theirs alone to make.

Encouraging males to make joint decisions with their female partners about maternal and child health is a critical element to raising rates of delivery at a facility (52). Educating men on the risks of obstetric complications can increase their involvement in antenatal and delivery care (10, 49, 53, 54). Focus group discussions revealed the barrier to health facility delivery posed by uninvolved family members, particularly male partners. Indeed, some pregnant women lack autonomy to make decisions about where to deliver and are dependent on their families—particularly their male partners—for birth planning and making provisions for facility birth (11, 12). Hence, both male and female focus group participants

responded favorably to the PSA concepts in which men played a positive role in gaining knowledge and seeking care for their partners. For instance, when evaluating the facility-delivery PSA, "Mr. Kandindi," participants appreciated the conversation between the pregnant woman's mother-in-law and husband and took it to indicate that while the husband was uninformed about pregnancy complications, which participants found to be believable, he was not irresponsible and listened to his mother's advice to take his wife to the hospital. Pregnant women also found it believable that the husband at first refused to take his wife to the health facility, which is an occurrence they have witnessed or experienced, but thought the storyline provided a good message to those men who think going to the health facility is a waste of time.

MR KANDINDI:

"Yeah, for instance the advert where the husband didn't want the wife to be taken to the health facility to deliver, at least the advert will highlight the importance of delivering at the health facilities especially for those men who think going to the hospital is a waste of time." - *Pregnant woman, rural Kigoma*

"The mother knows the problems that come with pregnancy but the son didn't understand but after being told the dangers he agreed"
- *Pregnant woman, rural Kigoma*

Overall, focus group discussions revealed that participants appreciated the teamwork between different pregnancy stakeholders, including husbands, mothers-in-laws and pregnant women, to ensure that both mother and baby were safe. In the negative consequences PSA, "Baba Zawadi," participants liked that it clearly depicted the potential dangers of giving birth at home and that both the aunt and the husband worked together to ensure the pregnant woman delivered safely when complications rose. Male participants, in particular, reacted positively to the husband's quick reaction in getting his wife to the hospital. In "Kalunde," participants also appreciated the husband's fast action in taking his wife to the health facility and felt that the fact that he took her on a bicycle, which is the main mode of transportation for many participants, showed determination. Pregnant women also appreciated that the woman told her husband as soon as she was experiencing problems.

KALUNDE:

"I have liked the third advert, when the lady saw the signs she woke her husband up. After telling him that he did not hesitate; he woke up and took her direct to the Facility. So it encourages me know that the Health Facility is where you get healing" *- Male caregiver, rural Kigoma*

"I liked the first one because when the woman noticed she is bleeding, she alerted her husband and despite the fact that the husband didn't have a car to rush the woman to the hospital, he used the available means which was a bicycle. That shows the determination he had." *- Male caregiver, rural Kigoma*

A campaign may not lead to a major transformation in household decision-making dynamics, however, well-designed, effective PSAs can strengthen women's belief in their decision-making authority and increase men's knowledge about potential pregnancy-related complications, thus contributing to changing attitudes about health facility deliveries (29, 55, 56, 57). Indeed, many of the health and social challenges faced by women globally, including reproductive health, require engagement with men and the larger social ecology to support women in achieving better health (58, 59, 60).

Limitations

One of the limitations of this study is that the voluntary nature of participation could result in self-selection biases in the participating group of men and women, and it is also important to consider that many of the focus groups were conducted within health facilities; the participants likely had geographic access to the facilities, which suggests they may have been more likely to have accessed the facilities before and to consider facility-based delivery options than the average citizen.

Conclusion

The process used and the findings from this study, which were used to develop a series of campaigns in Kigoma, provide important lessons for developing messages used in communication campaigns to improve maternal health in Kigoma and beyond (Box 4). The study examined key sociocultural barriers to health facility-based care for childbirth, and it identified the kinds of messages that would be successful in promoting facility delivery. The findings from this study suggest that messages that underscore the negative consequences of home birth—the risks to the health of the mother and child—are the most effective for motivating use of facility-based care. In addition, messages that depict other pregnancy stakeholders, particularly the male partner, as positive role models are effective in catching participants' attention, generating discussion and motivating action. While a "happy ending" where stakeholders worked together to avoid negative consequences was appreciated, a potentially negative ending was especially effective in motivating action.

BOX 4

How Vital Strategies/Thamini Uhai Used Mass Media to Successfully Increase Knowledge and Change Attitudes and Behaviors for Better Maternal Health Outcomes

The findings from this study informed the development of three mass media campaigns in Kigoma to promote delivering in facilities, making birth plans and recognizing danger signs during pregnancy. The campaigns centered on the use of radio public service announcements, since about half of households in Kigoma (52%) owned a radio, compared to one in five who owned a television.

In 2014, Thamini Uhai conducted its first mass media campaign using the tagline "Thamini Uhai: Okoa Mjamzito na Mtoto" (Value Life: Save Pregnant Mother and Child), to emphasize the importance of protecting the lives of women and newborns. (The phrase "Thamini Uhai" was later adopted as the name of the program). The campaign featured radio spots, outreach by community health workers, printed materials, outdoor media, social media, and earned media. Radio spots were aired on two local radio stations. Community health workers were also recruited and trained to conduct direct outreach with pregnant women via women's groups, drama groups, and money-lending groups in various locations, including health facilities on antenatal care days, marketplaces, water points, and in private households.

The post-campaign evaluation showed that the campaign reached an estimated one million adults, representing 92% of adults in their reproductive years. Radio emerged as the primary medium driving campaign recall, as 87% of those who recalled the campaign recalled hearing it on the radio. This finding emphasized the continued power of this mass medium in rural areas of Tanzania.

The campaign was well received by the community: It was rated as relevant, believable and persuasive by more than 90% of people who recalled it. A study of pre- and post-campaign surveys showed that the campaign improved knowledge, attitudes and behavioral intentions, specifically:

- Recognition of the danger signs of pregnancy increased—particularly recognition of bleeding and abdominal pain, which had been emphasized by the campaign.
- There was increased belief that delivering in health facilities is the best way to protect the health of mother and child; birth planning is important; and men who encourage their pregnant partners to give birth in a facility are responsible men.
- Campaign awareness was associated with a nearly fourfold increase in intention to give birth in a medical facility.

The Thamini Uhai multi-level communication campaign integrated posters, such as the one pictured here, with high-impact radio spots, social media, community health worker outreach, and more.

According to the U.S. Centers for Disease Control and Prevention (U.S. CDC), utilization of emergency obstetric and newborn care services in Kigoma increased notably since 2014, with the percentage of reported facility-based deliveries increasing substantially from 47.1% in 2014 to 59.6% in 2016, and the percentage of reported home deliveries decreasing to 37.3% in 2016 (61). However, despite these improvements, many women in Thamini Uhai program areas were still not utilizing health facilities for childbirth.

Thamini Uhai rebroadcast the campaign in 2016. In 2018, Thamini Uhai launched another multi-level communication campaign, under the theme, "Mjamzito na mtoto salama ni wajibu wetu" (Safe mother and baby is our responsibility), using similar outreach methods and employing a radio magazine show that aired daily on the popular radio stations Clouds FM and on Joy FM Kigoma. In 2018, the rate of facility-based deliveries in Kigoma had increased to 85% (62).

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Effective Communication to Improve Maternal Health in Kigoma, Tanzania

Thamini Uhai

Vital Strategies

ABOUT VITAL STRATEGIES

Vital Strategies is a global health organization that believes every person should be protected by equitable and effective public health systems. We partner with governments, communities and organizations to reimagine public health, and the result is millions of people living longer, healthier lives. Our goal is to build a future where better health is supported across all facets of our lives, in our families, communities, in our environment and our governments.

ABOUT THAMINI UHAI

Thamini Uhai is a Tanzanian nongovernmental organization that works on improving maternal and newborn health in Tanzania. Its maternal health program has supported national efforts to reduce maternal and early neonatal deaths in Tanzania since 2006. Working with the government of Tanzania and non-governmental partners, Thamini Uhai builds capacity to provide high-quality, safe and reliable emergency obstetric and neonatal care in government facilities.

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