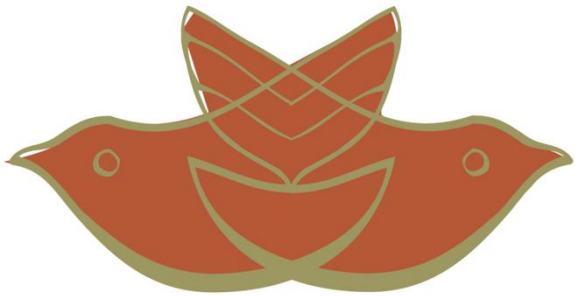

Operational Research Report on a Culturally Appropriate Birthing Space in Matongo Catchment – Kisii, Kenya

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Abbreviations

Curamericas - Curamericas Global, Inc.

KIKOP – Kisii Konya Oroiboro Project

MHC – Matongo Health Centre

MoH – Ministry of Health

CHV – Community Health Volunteer

KII – Key Informant Interview

FGD – Focus Group Discussion

TBA – Traditional Birthing Attendant

Introduction

Background

Maternal and infant mortality have remained significant global public health problems for decades. Women and infants around the world have consistently struggled to access the resources they need for adequate prenatal, postnatal, obstetric, and infant care to remain safe and healthy during pregnancy and childbirth. The burden of maternal and infant mortality falls disproportionately on vulnerable populations, such as individuals living in low-resource settings both in the United States and around the world.

Maternal death refers to the death of a woman while pregnant or within 42 days of the termination of her pregnancy from any cause related to, or aggravated by, the pregnancy or its management (WHO, 2020). In 2015, it was estimated that 303,000 maternal deaths occurred globally, most of which could have been prevented (WHO et al, 2015). Although maternal mortality decreased by approximately 44% between 1990 and 2015, underserved communities such as those in low-income countries and rural areas continue to be more heavily burdened by maternal death. In fact, the maternal mortality ratio in developing countries is almost 20 times greater than the rate in developed countries, and 99% of maternal deaths occur in developing countries such as those in sub-Saharan Africa and South Asia (WHO et al, 2015). The most common direct and indirect causes of death for mothers include hypertension, hemorrhage, unsafe abortion, and infections (WHO, 2019). Many deaths result from complications both during and following pregnancy and childbirth and are preventable since they can be managed and treated with proper obstetric and perinatal care. However, women living in underserved communities who lack access to health resources remain at risk for these complications and subsequent death despite the availability of life-saving resources elsewhere.

Infant mortality refers to the death of a child within his or her first year of life (CDC, 2019). Major causes of newborn death worldwide include birth asphyxia, infections, and birth defects (WHO, 2020). Infants born and raised in developing countries are more heavily burdened with infant mortality. In 2017, the infant mortality ratio in low-income countries was over 10 times greater than the ratio in high-income countries (48.6 and 4.6 deaths per 1,000 live births, respectively; CIA, 2020). Furthermore, 75% of all child deaths under the age of five occur within the first year of life, indicating the importance of access to quality care during infancy (WHO, 2020).

Many maternal and infant deaths can be prevented with proper obstetric and post-delivery care, yet utilization is low as women and infants often experience four types of delays which impact their access to care and increase their risk of death: 1) delay in recognizing complications, 2) delay in deciding to seek care, 3) delay in reaching a health facility, and 4) delay in receiving quality and appropriate care at the facility (The Partnership, 2006).

These delays are common in developing countries where literacy is low and complications are not promptly recognized. Cultural norms and traditions which favor the practice of delivering at home can also delaying a mother's decision to go to a health facility. The third type of delay is frequently experienced by women living in rural communities in which the infrastructure connecting individuals to health facilities is inadequate and/or healthcare worker shortages are common (APP, 2010). As a result, up to 75% of mothers in parts of sub-Saharan Africa deliver their babies at home without the assistance of a skilled birth attendant, thus putting themselves and their infants at risk of complications and possible death (Kifle et al, 2018).

Skilled birthing attendants including doctors, nurses, and midwives are invaluable during deliveries due to their ability to identify and manage life-threatening complications. It is well-understood that maternal and infant deaths are less likely when deliveries occur in the presence of skilled birthing attendants. Still, less than half of all women in Africa deliver with the help of a skilled professional compared to 99% in high-income countries, and inappropriate and abusive care toward mothers –

including verbal and physical abuse, neglect, and discrimination – is commonly reported (Oluoch-Aridi et al, 2018; USAID, 2017). If mothers experience poor care during delivery, they may choose to deliver at home for subsequent pregnancies and/or share their negative experience with their social networks, thus perpetuating the cultural norm of delivering at home and contributing to the second type of delay: the decision to seek care. If and when complications do arise during home births, mothers may be located too far from the facility to access medical attention in time to prevent catastrophe.

Like much of sub-Saharan Africa, Kenya is burdened by high levels of maternal and infant mortality. As of 2017, the reported maternal mortality ratio in Kenya was 342 deaths per 100,000 live births – over 25 times greater than the maternal mortality ratio in developed countries (CIA, 2020). Currently, the reported infant mortality rate in Kenya is 29.8 per 1,000 live births (CIA, 2020). Contributing to these poor maternal and infant mortality rates is the fact that 62% of women in Kenya give birth without a skilled birth attendant and are less likely to visit the health facility within 48 hours of delivery – a window which is critical to identify and treat complications (USAID, 2017).

Kisii is a county within Kenya with an urban center surrounded by rural communities. When the 2009 Population and Housing Census was completed, the population of Kisii was just over 1.1 million individuals and expected to grow to 1.3 million by 2017. The county occupies over 1,300 km^2 of Kenya and contains nine sub-counties. Matongo is one such sub-county with 2018 project data showing infant and maternal mortality rates double and triple national averages (91 per 1,000 live births and 1,515 per 100,000 live births, respectively).

Many maternal and infant deaths in Matongo can be linked to the four delays previously discussed. In a formative research report from 2018 conducted by staff at Curamericas Global, women in Matongo described many of the barriers they face to attending a health facility for delivery. The cost associated with receiving services offered at hospitals and health facilities was a major limiting factor. Supporting this finding are the results from a 2009 study, which found that 98% of women who delivered in a health facility had to pay out-of-pocket fees (Perkins et al, 2009). Women also reported fear of being abused or beaten, feeling ashamed, or being exposed at health facilities. It has been estimated that 1 in 5 women in Kenya who deliver at a health facility or hospital experience some form of disrespect and/or abuse such as physical abuse; non-consented, non-dignified, or non-confidential care; discrimination; abandonment; and detention in facilities (Abuya et al, 2015). Gender norms which dismiss women's voices and decision-making abilities regarding their birth plan, where to deliver, and whether/how to save money for transportation to a health facility also impact access to care. Women also mentioned cultural norms including the belief that women in Africa should have a natural birth at home without assistance, as well as fear of delivering a female child when the father wanted a son. Finally, even if a woman chooses to deliver at a facility and that decision is supported by her social network, she may still experience difficulties accessing care such as poor planning or lack of a birth plan, travel time, transportation, healthcare worker strikes, and health facilities not offering 24/7 services.

Curamericas Global

Curamericas Global, Inc. (Curamericas) is a non-religious, apolitical nonprofit organization based in Raleigh, North Carolina. In 2018, Curamericas partnered with the Ministry of Health (MoH) in Kisii, Kenya to improve rates of maternal and infant mortality through a project called the Kisii Konya Oroiboro Project (KIKOP). KIKOP utilizes the community-based, impact-oriented methodology to address the most critical health problems in communities. Through this methodology, communities are studied closely prior to program implementation to identify their most pressing health issues. A house-to-house census is conducted to identify individuals in each household, evaluate nutritional status, and determine the prevalence of household health infrastructure (e.g. hand washing stations). Family health data is collected through routine home visitation, health records, surveys, and group meetings. This data collection enables

the design of evidence-based programs to address the community's current health needs. Following program implementation, programs are monitored by tracking health service utilization and health status. Throughout programs, vital events are monitored to provide data-driven action plans and quality improvement. In this way, interventions can be modified to meet the evolving needs of the community.

KIKOP piloted its three interventions aimed at health systems strengthening and health education in Matongo due to its high levels of maternal and infant mortality. Long before KIKOP's formation, the MoH sponsored the development of the Matongo Health Centre (MHC) to provide basic maternity, HIV, and primary care services. To increase access to specifically the maternal health services at MHC, KIKOP hired two nurses to staff the health center at night to provide 24/7 care to mothers.

In addition to expanding the facility's hours, KIKOP began two community outreach initiatives to educate mothers on the importance of prenatal care and proper care for newborns, encourage mothers to deliver at the health facility, and monitor the growth and development of children under two. Community Health Volunteers (CHVs) are selected by their communities and responsible for the overall health in the community and the documentation of vital events such as pregnancies, births, miscarriages, deaths, and migrations. Each volunteer is assigned to one community. S/he visits pregnant women and mothers of children under age two on a regular basis to document vital events and reinforce best practices such as delivering at the health facility and exclusively breast feeding babies under six months of age. In addition to monitoring and supporting the health of community members, CHVs work to foster a widespread support of mothers and young children in the community through participation on a village health committee.

The second community health initiative is the implementation of a Care Group training cascade. Care Groups offer a series of lessons that are intended to encourage health facility deliveries and facilitate health behavior change at the household level. This structure of health education has been proven to improve maternal health, child health, and nutritional outcomes. These lessons include topics such as prenatal care, nutrition, breastfeeding, danger signs during pregnancy and in newborns, and how to develop a birth plan.

Ongoing review of project data shows that since program implementation there has been only one maternal death, significantly reduced infant and child deaths, and an increase in health facility deliveries. However, since utilization of the MHC has not reached the indicator's goal for the project, further investigation was required to understand how the facility can be improved to better meet the needs, preferences, traditions, and cultural practices of mothers in the community. An operational research study utilizing qualitative methods investigated the following five research questions:

1) What are some reasons that mothers choose a home birth?
2) What makes women most comfortable during delivery at home?
3) What are some cultural birthing practices that are important to women in Kisii?
4) What makes women most comfortable at the clinic during delivery and post-partum?
5) Are the nurses at MHC familiar with the cultural birthing practices preferred by women in Kisii?

Methods

Key informant interviews (KIIs) and focus group discussions (FGDs) were the chosen methodology for this research study. Uncovering the characteristics of a culturally appropriate birthing space for mothers in Kisii required KIIs with nurses and FGDs with mothers (who both delivered at home and at MHC) and traditional birthing attendants (TBAs). KIIs allowed individuals to speak openly about their experiences as nurses, while the format of FGDs allowed participants to share ideas and enabled multiple perspectives from many informants to be obtained within a reasonable amount of time. Research questions and the formative research report written in 2018 guided the development of individual

interview questions for the KIIs and FGDs. Interview guides for all informant groups are located in Appendix 1.

Two nurses were interviewed – both a KIKOP nurse and a Ministry of Health nurse employed at MHC. Considering their busy schedules, nurses were selected to interview based on their availability to participate. CHVs provided the names of mothers who previously delivered a child at home. Only six mothers agreed to participate in the study, so they comprised one FGD. Six mothers who delivered a child at MHC between 2018-2019 were also identified and randomly selected from facility records to make up a second FGD. Six TBAs from the community were randomly selected to participate in an FGD, but two additional TBAs arrived for the FGD and the facilitator allowed them to participate. One KII was held at the KIKOP office at the Ministry of Health, while the second interview and three FGDs were held at the MHC.

The two KIIs with nurses were facilitated in English by the international intern leading the research study. These informants spoke fluent English and were able to answer all questions in English without a translator. The three FGDs were conducted in the local Kisii language and facilitated by KIKOP staff to encourage more conversation and reduce respondent burden. To prepare, facilitators received a "crash course" on qualitative research led by the intern, reviewed the interview guides prior to each FGD, and practiced asking the questions in Kisii language to avoid errors in translation.

Before any questions were asked, all informants were explained the purpose of the research study and read and signed a declaration of consent agreeing to participate. All informants were made aware that their participation was entirely voluntary and that there were no consequences if they chose not to participate or left the KII or FGD early. Participants were assured that everything they shared would be anonymous and remain confidential, and members of the FGDs were asked not to repeat anything shared by other members. A notetaker was present for each FDG, and the audio for all five KIIs and FGDs was recorded by the facilitator and subsequently stored in Dropbox. Each session took approximately 75-90 minutes to complete. The table below outlines the schedule for the KIIs and FGDs conducted for this research study.

Informants	FGD or KII?	Topics Investigated	Date
KIKOP nurse (n=1)	KII	- Why some mothers prefer a home birth - Nurses' familiarity with cultural traditions and birthing practices women in Kisii prefer - What a culturally appropriate birthing space at MHC would look like	Monday, July 1, 2019
TBAs (n=8)	FGD	- Perceived benefits/risks of home births - Recommendations to improve birthing space - Mothers' preferences (i.e. delivery position, privacy measures, individuals in delivery room) - Traditional medicines or remedies used during birth - Mothers' comfort level with medical interventions	Wednesday, July 3, 2019
MOH nurse (n=1)	KII	- Why some mothers prefer a home birth - Nurses' familiarity with cultural traditions and birthing practices women in Kisii prefer - What a culturally appropriate birthing space at MHC would look like	Thursday, July 4, 2010
Mothers who delivered at	FGD	- Perceived benefits/risks of home births - Recommendations to improve birthing space	Monday, July 8, 2019

MHC (n=6)		- Mothers' preferences (i.e. delivery position, privacy measures, individuals in delivery room) - Traditional medicines or remedies used during birth - Mothers' comfort level with medical interventions	
Mothers who delivered at home (n=6)	FGD	- Perceived benefits/risks of home births - Recommendations to improve birthing space - Mothers' preferences (i.e. delivery position, privacy measures, individuals in delivery room) - Traditional medicines or remedies used during birth - Mothers' comfort level with medical interventions	Monday, July 8, 2019

Analysis

After all KIIs and FGDs took place, two KIKOP volunteers transcribed the audio files from FGDs from the local Kisii language into English. The English transcripts were then analyzed using systematic thematic coding using Dedoose software. Twenty-two thematic codes were chosen based off the research and interview questions (Appendix 2). Following an initial read of the transcripts, an additional three interpretive codes were chosen based on identified reoccurring themes. Written transcripts and all twenty-five codes were uploaded to Dedoose. Transcripts were read line-by-line and coded based on pre-established thematic and interpretive codes. Data was then categorized by interview question to obtain summarized and comprehensive responses to each question asked.

Results

Home Births

Reasons pregnant women chose a Home Birth

To understand the common preference for home births, mothers who had previously given birth at home and TBAs in the community were asked to explain why some women choose to deliver at home rather than at a health facility. Some mothers made the decision to deliver at home simply because walking to the facility is too exhausting.

> *"In the past, the transportation challenge was what mostly made them choose to give birth at home. They used to get to the facility tired and not have the strength to push the baby by themselves."* – TBA

Mothers report enjoying the support they are provided with from neighbors and family members when they deliver at home. Other women reported having a midwife in the family who could assist with delivery rather than having to commute to a facility.

> *"At home once they have heard that you have delivered your neighbor can bring you vegetables or another can bring you clothes for the baby unlike the hospital."* – Mother

> *"I choose to give birth at home since my mother in law could spread some leaves on the floor so that I can give birth on and after that she could sing me some songs that made me happy. I mean, it is usually a happy day when I give birth at home."* – Mother

> *"You may also find your mother in law is a midwife so there is no need to go to hospital."* – Mother

When delivering at home, mothers state that they have less fear of repercussions stemming from local cultural beliefs (taking the baby outside before his/her navel heals) because they can easily incorporate precautionary traditional practices into their delivery. Mothers also state that they are able to give birth according to their preferences (such as delivery position) when delivering at home.

> *"I prefer giving birth at home since there are beliefs, in the hospital my husband or another woman might come to visit the baby then the baby dies. However, at home, the herbs for amasangi are given to protect me and my baby from danger."* – Mother

> *"What makes me happy about delivering at home is that my mother-in-law looks for herbs like chinsaga and there is tea on the spot or even milk that help me to get breast-milk to breastfeed the baby and also staying in the house until the navel has completely healed before taking the baby outside."* – Mother

> *"I prefer giving birth at home since I like delivering while I am lying down... When I go to the hospital, I cannot get onto that bed... I prefer lying down."* – Mother

Perceived Benefits and Drawbacks of Health Facility Delivery

Some mothers feel motivated to utilize the health facility because they know that obstetric and neonatal complications can be treated quickly in the presence of medical staff.

> *"Sometimes the woman may begin to bleed excessively. If she is in hospital, she will be helped promptly."* – Mother

> *"When there is any complication be either the mother or the baby, they can receive adequate, prompt and appropriate care to prevent loss or further complications."* – Mother

> *"When I deliver in the hospital, I feel comfortable because I know there are experts, everything is available, my baby will be assessed and establish whether the baby is Okay"* – Mother

> *"In case the mother was, a person living with HIV, if she delivers at the hospital, there is a way the doctors can help her not infect her baby with HIV, and not only HIV but also among other infectious diseases."* – Mother

Some participants expressed apprehension about utilizing the health facility for deliveries. Reasons were sometimes based off personal past experiences (described below), or the experiences of others.

> *"In the hospital, we are fed on beans, cabbage and ugali. mhhhh! You can imagine some of us hate such meals, which makes me not to prefer delivering in hospital."* – Mother

By embracing the positive relationship mothers have with TBAs in the community, TBAs find that they are able to increase health facility usage by encouraging mothers to adopt facility deliveries. TBAs were largely supportive of facility deliveries and agreed that they are safer than home deliveries.

> *"My relationship with KIKOP is that I encourage the mothers to come and have their children at the health facility. I approach them when they are pregnant and when their due date is approaching I would help them access the services from the facility where they are attend to quickly in a hygienic environment and they do not have to pay for the services."* – TBA

> *"But now we have seen there are a lot of deaths resulting from home childbirth and therefore when the health facility came near I decided to encourage women to embrace hospital childbirth"* – TBA

Despite these efforts by TBAs, nurses believed that health facility usage would increasingly improve with more community outreach to ensure that women understand the importance of facility deliveries and understand that the services are provided free of charge.

Barriers to a health facility delivery

Some mothers expressed a desire to deliver at the facility in previous births but state that they were not able to do so due to two main barriers. First, many mothers thought they could not afford to deliver at a facility and thus opted for a home birth.

> *"Maybe if she lacks hospital fee, as you know that hospital services are not free."* – Mother

> *"The hospital charges were quite a lot therefore opting to take the midwives services that were free."* – TBA

Poor infrastructure and lack of transportation provided a barrier for others. Mothers without access to a vehicle may be required to walk even when they do not have the strength to do so. Some mothers had to rely upon family members or neighbors with vehicles to take them to the facility. Even with access to a vehicle, severe rain may make the roads impassable.

> *"When for example my D-day has arrived, yet I become so weak to walk, so when walking becomes a challenge, I am forced to deliver at home."* – Mother

> *"A times it may rain so much compounded by impassable roads in order to reach hospital."* – Mother

However, one TBA pointed out that transportation challenges are a thing of the past now that MHC operates 24/7 and is close to mothers' homes compared to county hospitals.

> *"In the past, the transportation challenge was what mostly made them choose to give birth at home."* – TBA

Facility Birth Experiences

Many women reported experiencing adverse events when delivering at a health facility or hearing about the negative experiences of others. While it was not always explicitly stated whether or not these experiences occurred at MHC, these situations have caused many mothers to fear and/or feel disdain toward health facility deliveries and contribute to the preference for home births among many mothers.

> *"When I delivered in hospital, I had undergone caesarian procedure, some mistake occurred. The doctor left some cotton in my womb while stitching. I then had an infection and had to undergo yet another operation again. That is my negative experience that I had in the hospital."* – Mother

In addition to poor medical practice causing complications, mothers reported experiencing harassment from nursing staff when delivering. Some mothers have been yelled at by facility staff during their delivery, while others experienced examination of the "enlarging vulva" – a practice which may be unnecessary and unethical.

> *"Another disadvantage of delivering in the hospital is the harassment from the nurses and some medical staffs there. They shout at you like get onto the bed quickly yet you are in great pain. This makes me view hospital delivery negatively."* – Mother

> *"I always come to deliver here at this facility but what you need to improve on is the way our health care workers handle us, let them stop harassing us and using unorthodox methods of determining the progress of the enlarging vulva."* – Mother

> *"Another negative factor is the harassment, as they keep testing you and taking the progress of enlarging vulva,"* – Mother

In addition to verbal abuse and harassment, some mothers reported physical abuse and neglect during their health facility deliveries. While the "cutting" women refer to below could possibly refer to the medical practice of episiotomies (creating a vaginal incision to widen the birth canal), this process is being viewed by some mothers as abusive treatment.

> *"Sometimes they can slap you or pinch you on the thighs or sometimes they cut you with scissors leaving you with wounds"* – Mother

> *"There was a time I delivered in Hospital, but you can imagine how the nurses treated me. The nurses treated me so badly; they beat me up (…) so I made up my mind to deliver at home where I will be treated with dignity and very well."* – Mother

> *"In the hospital they will mishandle you and sometime even abuse you. When you tell them you are in pain they will dismiss you."* – Mother

Healthcare worker shortages were another important factor brought up by mothers and TBAs alike. Mothers report that they would take the time, money, and effort to travel to the facility to deliver, only to discover that there were not enough health workers. When this happens, mothers find that they are left to deliver alone with only the individuals who accompanied her to the facility.

> *"In the hospital you do not get any help... you are just stared at."* – Mother

> *"Sometimes in the hospital there were not enough nurses to help them out with childbirth and they had to go through the process themselves."* – TBA

> *"In hospital you might be struggling on your own or with the person you came with then at the end of the day you deliver on your own without the help of the nurses."* – Mother

Finally, when reflecting on their experiences delivering at health facilities, many mothers commented on the cleanliness of the facility and/or their ability to bathe afterwards. Although one nurse explained that they use "Jik" (a bleach-based disinfectant) to sanitize the delivery and antenatal care rooms, mothers are often disturbed by the odor at the facility.

> *"I will also wish that they cleaned the delivery rooms and ward at all times. Sometimes there emanates an odor in the ward and even delivery room, this makes us uncomfortable and brings the fear for infection."* – Mother

Similarly, mothers are provided basins and water with which to bathe after delivering, however this was viewed as inadequate – and sometimes unavailable altogether – to mothers who wish to thoroughly bathe after delivering.

> *"I remember when I delivered in our referral hospital, when I was there, there was no water for two days, and within those two days I did not take a shower and you can imagine having that odor of blood, sweat and medicine."* – Mother

Perinatal Care

Nurses emphasized the importance of both delivering at the facility and staying for 24 hours afterwards for monitoring. Many women expressed that they do not wish to stay at the facility for this monitoring period and instead prefer to return home so they can care for their families, cook, and thoroughly bathe.

> *"I would like to leave the morning after delivery and go back home to take care of my husband and my other children."* – Mother

> *"If where you have delivered there is no food, or the food is not good, you will not want to stay there longer."* – Mother

> *"Sometimes, when there is no water at the facility, you wish to go home sooner so that you can access water easily and make yourself clean."* – Mother

Mothers also expressed fear that staying in the hospital would expose them and their newborns to "evil eyes," a cultural belief which can cause complications and even death.

> *"Once I have delivered, I prefer going home immediately to avoid a person with evil eyes they do not look at me or at my baby and probably cast a spell on them."* – Mother

Despite these hesitations and desires to go home immediately, some mothers were willing to stay for the monitoring period when they understood the importance of staying and what will be done during their stay to ensure their health – for example, monitoring the overall health of the newborn and mother and screening for complications.

> *"If you go home and then there arises a complication, it will be challenging and waste precious time getting back to hospital. It is okay we stay there actually as long as possible until all is well to leave."* – Mother

> *"When I am at the hospital and they happen to see any problem with me or with my baby, they can help manage it earlier."* – Mother

> *"The nurses should be around and keep checking on you and the baby and also confirming if you have any other pain anywhere."* – Mother

Mothers recommended that the facility makes certain changes so the mothers can be more comfortable and feel encouraged to stay for monitoring. These changes included providing bed nets and otherwise comfortable places to sleep, cleaning the rooms more thoroughly, and treating mothers kindly and with respect., and offering mothers small incentives such as diapers and food.

> *"I would prefer staying longer in the hospital, if sleeping conditions are good, a net provided so that mosquitos do not bite my baby. This can make me want to stay longer."* – Mother

> *"Something needs to be done to make the rooms clean, they use detergents that can wash and make the delivery rooms clean, no odor and clean washrooms. Will encourage more women to stay at the facility longer."* – Mother

> *"To encourage us to stay at the facility, you should befriend in that when we come to the facility you treat us well and you do not rush us."* – Mother

Mothers also explained that incentives would encourage more mothers to both deliver at the facility and stay at the facility for the 24-hour monitoring period. Incentives included diapers, cotton/pads, maternity dresses, bedding, food, umbrellas, soap, basins, and linen to wrap newborns.

> *"If we are given other things like diapers, cotton, maternity dress, good beddings and quality foods, will make as settled and even want to stay there longer."* – Mother

> *"They should add more pads that we can use after giving birth. We should be given enough."* – Mother

Overall, nurses recommended telling mothers during ANC visits that they should make preparations to stay for 24 hours after delivering. Giving mothers notice would allow them to make arrangements for their children, bring enough food to the facility, and otherwise prepare for an extra day away from home.

Culturally Appropriate Birthing Space

Furniture

Mothers, TBAs, and nurses expressed that certain adjustments to the furniture in the delivery room need to be made to accommodate mothers' birthing position preferences. For instance, ropes suspended from the ceiling would assist mothers who wish to squat to deliver, stools for mothers who wish to sit, and beds close to the ground so mothers do not have to climb onto a high surface right before they deliver. Nurses requested additional spaces to deliver in case there are ever two deliveries happening at once.

> *"Sometimes we are forced to tie strings at the roof of households so that they hold onto them tight as they try to deliver"* – TBA

> *"I wish that in this facility you came up with that bed that we put and sleep on the floor. Not a bed that we have to climb on to it, if you make us the bed that is next to the floor, we will come to the facility."* – Mother

Privacy

A major issue with the current health facility, according to many mothers, was the lack of privacy and fear of being seen by acquaintances and neighbors in the village. Mothers requested that curtains be added around each bed so that only nurses and caregivers can see them during labor and delivery. Nurses suggested providing mothers with long gowns which would enable easy examinations and be more comfortable for the mothers.

> *"The thing that scares me about delivering in hospitals is the fact that there is no privacy"* – Mother

> *"Matongo Health Center is so close and within our village, so the perception is that every person knows you, when they come looking at you, naturally you'll feel ashamed, because we are known."* – Mother

One mother explained how fear of exposure can actually harm the baby because mothers may quickly close their legs if a passerby sees them, thus putting the baby in danger.

> *"When you are not covered you might see someone coming then you close your legs when the baby is coming out then end up pressing the baby. So privacy will help one to deliver safely without putting the baby in danger."* – Mother

People Present in Delivery Room

When asked who should be able to attend the delivery, mothers, TBAs, and nurses provided a variety of responses. Some suggested husbands should be able to attend, while others implied that only female relatives should. The rationale for excluding husbands was because witnessing childbirth may be traumatic for husbands and negatively impact the couple's sexual relationship.

> *"You should also have the liberty to call any family member you are comfortable to have around, could be your mother sister or husband so that you can feel at home."* – Mother

Almost all participants agreed that it should be the mother who decides who is allowed to attend the delivery, although one TBA indicated that it could be a female relative – just not the husband.

> *"I am delivering, I am the one supposed to determine who should be present or not present at the delivering room."* – Mother

> *"It can be the mother, the person she came with the mother in-law or the nurse but not the husband [who decides who is in the delivery room]."* – TBA

Adjustments to Clinic Structure

Other suggestions were made on how to improve the structure and services provided at the MHC more generally. Mothers requested better resources for bathing. Currently, mothers are given basins to use for bathing, however these are usually in short supply and require mothers to have to share or "fight" over them. In addition, when the power goes out, mothers explained that they have no access to warm water.

> *"They should add more basins so that we do not fight for one. When we share we do not know who has a skin disease."* – Mother

A request from both TBAs was that they are warmly welcomed by nurses at the facility. According to the TBAs, the mothers trust, are comforted by, and depend upon TBAs to bring them to the facility.

> *"As midwives we would like to be welcomed and also a lower platform should be provided for childbirth so that when I bring a mother I can sit down with her as I help her out. Also we would need a room to stay with the mother until they are done giving birth."* – TBA

> *"Get a room to stay as midwives as they give birth since the mothers have faith in us who have brought them to the facility so it would be better we work together with the nurses"* – TBA

Larger adjustments to the clinic structure were suggested, including the addition of an emergency transport service from MHC to a referral hospital and beds to the ANC wing. One nurse recalled a situation in which mothers in ANC had to share a bed with one another due to overcrowding.

> *"I wish that we had a stationed ambulance at Matongo Health Center (…) If the ambulance is here, it gives us confidence that just in case of a complication, I will be rushed to the county referral hospital where I can be rushed to and get the necessary help."* – Mother

> *"I will also suggest the expansion of the maternity ward, the number of delivering rooms and beds. Just imagine more women come to deliver at the facility but the space and beds are limited."* – Mother

Mother's Understanding of Labor

Mothers were asked several questions to better understand what they know about the labor and delivery process.

> *"For those of us who deliver at home the mothers will take us by the head low and shake us so that the baby will come to the same level."* – Mother

> *"There are times also when you are giving birth you feel like the baby is coming out through the back side, in this case the elderly ladies will take a piece of cloth and block the hole you so that the baby comes out from the front side."* – Mother

One mother suggested that during ANC visits they are made aware that they may be in labor for longer if they have never given birth before.

> *"Tell mothers who are nulliparous that their labor might be longer."* – Mother

Mothers expressed a desire to be kept informed about the stages of labor. One nurse recommended having cervix dilation models and a clock to help mothers understand the stages of labor and the rate at which it should occur (1cm every 2 hours), as well as pictures of birthing positions so they can choose how they would like to deliver.

> *"They should tell me of my progress and when the time is drawing near, my doctor should tell me as in after these minutes your time will be due, prepare yourself."* – Mother

Another request from mothers was to receive honest and accurate information about complications which may arise, such as if the baby is facing the wrong way and/or if a Caesarean section is needed.

> *"When I am required to undergo caesarean section because of maybe my situation, the doctor should tell me so that I psychologically prepared for the impending pain."* – Mother

> *"They should tell me if the baby is facing the right direction so that I can know if I will deliver safely."* – Mother

Cultural Practices and Beliefs

A myriad of cultural practices and beliefs about labor, deliver, and newborn care exist in Kisii. For instance, mothers with many girls often wish to leave the facility immediately after delivery out of fear that a male baby will be stolen, female circumcision still occurs for many girls, and some mothers believe that the second born child should be born at home. The most prominent cultural beliefs include "evil eyes," Amasanga (described below), celebrations and prayers, and practices related to the umbilical cord and afterbirth.

Mothers explained that "evil eyes" is a spell cast from the eyes of an evil person. This person has the power to quickly cause newborn illness and death. Children can be protected from "evil eyes" with the use of traditional medicines.

> *"This is a spell cast from the eyes of an evil person. With just a look, the person transfers some evil materials to your child and all of a sudden, your child develops fever, stomachache and even death maybe some seconds away."* – Mother

> *"When I give birth, my mother in law usually has some medicine that they put on the baby's navel to prevent them from being looked at with 'evil eyes' (biririgwa)."* – Mother

Mothers, on the other hand, feared Amasanga for their own health and safety. According to this belief, if the woman with whom a mother's husband is having an affair comes to the facility and passes by the mother, the mother will die of bleeding. If a husband is known to be polygamous, there is a concoction called Amasangi which they give the mother and husband to prevent bleeding. Because of this belief, one nurse explained that mothers do not understand the biological causes of post-partum hemorrhage. If excessive bleeding begins, mothers assume it is from Amasanga rather than a medical complication.

> *"If this woman whom my husband has an affair with for example, if she happen to visit me in the hospital, you will die, if she just has a look at you may die."* – Mother

Many mothers explained that before they deliver, they pray with their families and whoever else is in attendance. After delivering, families name the baby and celebrate with songs and local brew.

> *"We pray before the process begins, giving the baby a name and then singing and hallulations, joy and celebrations here and there."* – Mother

> *"As Kisii women we usually pray first after, the baby is born we sing a folk song then name the baby."* – Mother

> *"We prepare drinks like beer and local brew so that people can celebrate."* – Mother

After delivery there are several cultural practices which mothers engage in regarding treatment of the umbilical cord and afterbirth. One TBA described cutting the umbilical cord with a type of grass (likely after home deliveries) and washing the baby immediately after delivery.

> "*In the past we would cover the baby with leaves then tie the umbilical cord then use Napier grass to cut it. Then after that we put water in a basin then wash it with soap then wrap the baby well with old clothes or blankets then celebrate."* – TBA

While mothers did not describe any specific practices they engage in regarding treatment of the afterbirth, some did express discontent about the way it is treated at health facilities.

> *"There is this culture, where the afterbirth is treated and handled in a particular way. I mean the way they dispose it traditionally is different from the how hospitals dispose it, where they only throw in in a pit."* – Mother

Finally, many TBAs and mothers had particular beliefs about specific foods and beverages with the capabilities to induce labor, assist in recovering from delivery, or facilitate production of breastmilk.

> *"Chocolate is good in the production of breast milk."* – TBA
> *"[Chinsaga] helps in the production of breast milk."* – TBA
> *"She is given water and Coca-Cola soda to relieve stomachache after delivery. It is believed that Coca-Cola cleanses the system after birth."* – Mother
> *"Black tea can also help for those who shed blood instead of the amniotic fluid."* – TBA

Interventions

Traditional Practices

Related to the cultural beliefs related to labor, delivery, and newborn care, mothers and TBAs explained many traditional practices used to prevent complications and alleviate discomfort. For instance, herbs and tea leaves are often used to reduce labor pains and hasten childbirth. Nurses explained that during facility deliveries they discourage these practices so that the birth can be as natural as possible to prevent fetal distress. Still, during home deliveries, many mothers and TBAs incorporate these practices.

> *"When you are about to deliver they can get you the roots of a vegetable known as risosa to chew so that it can hasten the childbirth."* – Mother

> *"Omwabori is also called egwagwa. Once it is rubbed at the back of the mother it helps in hastening the childbirth. It serves the same purpose as the drip used in hospitals."* – TBA

> *"Delivering at home, when you start experiencing labor pains you are either given hot water or hot tea so that the baby can come out faster."* – Mother

TBAs also mention that encouraging mothers to walk around prior to delivering is another common traditional practice used to induce or quicken childbirth.

> *"When I observe a mother is about to give birth, I usually ask her to walk around until she is completely ready to give birth and there are times I would ask them to rest as the child prepares to come out. However most of them do not prefer resting."* – TBA

> *"Some of the women may walk around and deliver in the process there end up delivering in an unhygienic environment."* – TBA

According to mothers and TBAs, mothers experiencing prolonged labor and/or extreme fatigue are often told to blow into a gourd. TBAs mention that, in some cases, a "strong man" will suck air from the mother's mouth to assist with pushing during delivery.

> *"You can be given a gourd to blow if the baby has delayed to come out so that it can help in pushing the baby."* – Mother

> *"For those who are tired, you can give them a gourd to blow so that it can help in the pushing."* – TBA

> *"There are some who get tired of pushing. If this happens a strong man is called to suck air through her mouth until the ribs open up and she is able to push the baby out."* – TBA

After delivery, mothers and TBAs mentioned using herbs, plants, and stomach binding to alleviate pain and assist in the delivery of the afterbirth.

> *"They also use hot water to rinse your body to relax it."* – Mother

> *"The leaves of certain strawberries (chinkenene) are usually crushed and dissolved for the mother to drink so that it can alleviate the stomach pains."* – Mother

> *"There is another plant called ekerachwoki that the mother can chew the bud and swallow the juices to help in the removal of the afterbirth."* – TBA

> *"You can also tie her with a cloth around the stomach so as to suppress the stomach. This also helps in pressing the stomach in order to push out the dirt that comes along with childbirth from the womb."* – TBA

Local brew and the roots of certain herbs are also used to stimulate breastmilk production for new mothers.

> *"When the mothers breast milk delay to come, they usually boil the local brew (busaa) for to trigger the milk to come."* – Mother

> *"You can also use the roots of a herb called chinsaga that is boiled slightly then given to the mother to drink to enhance the production of milk."* – TBA

Mothers and TBAs explained that traditional remedies are often used on newborns, too. Mothers explained that some herbs are used to alleviate or prevent stomach aches for the baby.

> *"It is referred to as chinkenene according to the Kisii Language. They give the child to prevent the child of especially stomach pains."* – Mother

> *"There is […] some medicine for the baby called Rinyabobongi, which is sometime called Ekemiso. This given to the child to protect him/her from stomach aches."* – Mother

Other traditional practices include applying "obosas" to the baby's navel to protect him/her from "evil eyes." At times, lizard waste is also applied, however the reasons for doing so were not stated.

> *"When I give birth, my mother in law usually has [obosasa] that they put on the baby's navel to prevent them from being looked at with 'evil eyes.'"* – Mother

> *"At home they usually put the waste of a lizard at the navel."* – Mother

Finally, certain herbs and "morning dew" are sometimes given to babies to calm them down and prevent them from crying. The reasons for their effectiveness were not explained by the mothers. One mother also described orally administering "hygiene medicine" to her baby, although it was not clear exactly which medicine she is referring to.

> *"The baby is given a herb called ekemiso so that they cannot keep crying at night."* – Mother

> *"My mother would bring some hygiene medicine and drops them to their mouth. She also gives them the morning dew so that they can be calm for me to be able to do my chores with ease."* – Mother

Pain-Relief Strategies

Despite the use of traditional herbs after deliver to ameliorate pain for the mother, nurses state that they discourage the use of medicines and herbs during labor process with the rationale that delivery should be as natural as possible to prevent fetal distress. Nurses said that exceptions are sometimes made for mothers who request pain medicine or experience prolonged labor and persistent stomach pains.

> *"There are others who might still be having persistent stomach pains so there are given some drugs to help reduce the pain."* – TBA

However, mothers are typically okay with nurse's suggestion not to use pain medicine since experiencing childbirth naturally is considered to be a dignified and honorable experience.

> *"To them, that's their dignity, that's womanhood. Undergoing that pain during delivery proves that you're a woman in Africa."* – MHC Nurse

Lastly, a nurse explained that women who receive proper ANC typically experience less pain because they are taught natural pain-relief strategies such as breathing through their mouths and having a family member or love one come and massage their back throughout labor.

Medical Practices

One of the nurses at MHC explained that in general, mothers are comfortable with non-invasive medical practices such as urine measurement and the use of antibiotics. In the event that a mother experiences a laceration or vaginal tears, they are typically also comfortable with small sutures. One mother also explicitly expressed her comfort with having her blood pressure monitored.

> *"My doctor needs to take my blood pressure, and tell me whether the pressure is normal or there is a problem with it."* – Mother

Mothers expressed that they were typically comfortable with the use of medical interventions to manage complications and ensure the newborns health, such as the prevention of mother to child transmission of HIV and the use of an incubator for premature infants.

> *"When there is any complication be either the mother or the baby, they can receive adequate, prompt and appropriate care to prevent loss or further complications."* – Mother

> *"In case the mother was a person living with HIV, if she deliver at the hospital, there is a way the doctors can help her not infect her baby with HIV, and not only HIV but also among other infectious diseases."* – Mother

> *"What also makes me for example deliver in the hospital is that, if in case I deliver a baby before the time, the baby will be placed in the incubator and nursery the very moment. This form of management you will not find when delivering at home."* – Mother

Episiotomies and Caesarean sections were two medical interventions toward which mothers expressed apprehension. Mothers universally were averse to episiotomies out of fear that their vaginal opening would permanently widen. However, one nurse stated that once the procedure was explained and rationalized to mothers they became more accepting to this procedure. Many mothers stated that they fear Caesarean sections because they believe it will impair them from having children in the future.

> *"Some women are comfortable to undergo caesarean section while others are not willing to undergo the procedure."* – Mother

> *"This is because you will be disabled and will not be able to deliver another child."* – Mother

Birthing Positions

With the current furniture and structure of MHC, the only birthing position available to mothers is the lithotomy position, in which a woman lays on a bed on her back with her legs up. However, mothers, TBAs, and one of the nurses all agreed that mothers would prefer to deliver in a different position including kneeling, squatting, sitting on a stool, and laying on a flat surface.

> *"The nurses should stay close and they should give you the freedom to give birth in a manner you are comfortable. If it is while kneeling or while lying down they should allow you."* – Mother

The most frequently mentioned and agreed upon opinion was the desire to have beds on the floor. Mothers explained that they often arrive to the facility far along in the stages of labor at a time when it is

difficult and painful to climb onto a high surface. However, nurses state it is not currently sanitary to delivery on the floor of MHC.

> *"I prefer giving birth while lying down."* – Mother

> *"There are some of us who prefer giving birth on the floor, so if you could modify and get a place we can deliver on a lower surface as opposed to the beds where we struggle to climb so that we can give birth on a flat surface."* – Mother

> *"We would like a bit lower bed, just close to the ground and not climbing the delivery-bed, which is mostly too high. Like when in pain, you do not feel like raising your legs, like to me I prefer kneeling or lie flat on a flat surface and I do not want to lift my legs up."* – Mother

Other mothers expressed a desire to delivery by sitting on a stool. This is a position commonly chosen during home deliveries.

> *"At home can be brought a stool to sit on and a woman supports your back making you comfortable."* – Mother

> *"It is a small stool that is quite low (…) The mother in law will be sitting at the front waiting for the baby while there is another woman supporting you from your back making it more comfortable. That is what makes us happy about home delivery."* – Mother

One nurse commented on the positive impact which allowing mothers to choose their birthing position would have on the delivery experience and the utilization of the health facility for childbirth.

> *"This mother will birth in any position she wants. She will enjoy the experience. Then she will go spread the news: 'Oh, if you go to Matongo you can deliver in any position that you want. The nurses there will let you squat, do anything that you want!'"* – MHC Nurse

Foods and Beverages

Food and beverage preferences among mothers typically included porridge, ugali, vegetables (such as kale and chinsaga), tea with sugar, milk, and warm water. Several mothers expressed their dislike for beans.

> *"There should be food like the kales and chinsaga so that I can eat them after delivery, with that I can stay. If there is no food I will just go back home to eat."* – Mother

> *"Serving me with beans is what discouraged me the most for staying in the hospital."* – Mother

There were specific foods and beverages which mothers explained were most appropriate either before or after delivery. For instance, mothers prefer tea and warm water before delivery to hasten childbirth and Coca Cola afterwards as it is believed to "cleanse" the system.

> *"Before she has delivers, she is given hot water and it hastens the arrival of the baby. Cold water is not allowed to be given to the woman who is about to deliver. You are served tea of course warm."* – Mother

> *"She is given water and Coca-Cola soda to relieve stomachache after delivery. It is believed that Coca-Cola cleanses the system after birth."* – Mother

With the exception of Coca Cola, mothers explained that they like warm foods and beverages during their stay rather than cold ones, especially at times when it is cold at the facility.

> *"You may also eat food, but you are not supposed to take cold food."* – Mother

Nurses' Understanding of Patients' Preferences and Cultural Beliefs

Nurses were asked similar questions to investigate whether their understandings of mothers' preferences were similar to what mothers actually reported in their FGDs.

KIKOP Nurse

The KIKOP nurse interviewed understood that mothers do not want pain medication and value the experience of a natural childbirth. This nurse stated that s/he was aware that mothers prefer birthing positions other than lithotomy, despite that being the only feasible position offered at MHC. Finally, this nurse knew about the cultural belief of Amasanga and that the preference of most mothers is to only have female family members and caregivers in the room while they deliver.

MHC Staff Nurse

The nurse employed by the Ministry of Health understood mothers' desire for more privacy to be provided at the facility. S/he was aware that most women do not like to use pain medication, and could cite cultural practices such as female circumcision and the use of herbal remedies to reduce pain and quicken childbirth. This nurse, however, did not mention practices such as Amasanga or "evil eyes" and was under the impression that mothers liked to deliver either in a lithotomy or left-lateral position.

Birthing Plan

Mothers and TBAs expressed some challenges related to the details which should be outlined in a birth plan. For instance, some women do not bring food to the facility and/or eat before coming to the facility, leaving them hungry after delivering.

> *"Most of the women would not have come prepared and some might not have eaten well preceding the childbirth and therefore making it hard for them to be able to breastfeed."* – TBA

Transportation challenges were also described by many mothers and TBAs.

> *"In the past, the transportation challenge was what mostly made them choose to give birth at home."* – TBA

> *"No means of transport (…) letting you remain at home without a plan and seek any help available in the village."* – Mother

One mother explained that her husband spends the family's money on alcohol and there is therefore no money to use for hospital fees when she has to deliver.

> *"You might find that your husband is a drunkard so there is no money to use for hospital charges so he suggests you deliver at home."* – Mother

Finally, a common reason mothers provided for refusing to stay at the facility for 24-hours after delivery for monitoring was that they must return home to care for their families.

> *"I would like to leave the morning after delivery and go back home to take care of my husband and my other children."* – Mother

Husbands' Involvement

Participants frequently commented on the ways in which husbands were involved – or not involved – with labor and delivery. For instance, one nurse explained that mothers usually have to wait for a female family member to bring them to the facility because husbands feel shameful and guilty because of the pain mothers experience. Some mothers explained that their husbands may be out of town working, thus requiring mothers to go home immediately after delivering to care for their children rather than staying at the facility for the 24-hour monitoring period.

One nurse explained that many mothers do not want their husbands in the delivery room out of fear that witnessing childbirth would be traumatic for the husbands and damage their sexual relationship. A mother also explained that after delivering the woman should "tuck in" her stomach to appease her husband.

> *"After giving birth the women will tie your stomach then it goes back inside. When the stomach is tucked in, your husband will love you, but when it is hanging the husband will not like you."* – Mother

Several mothers had positive things to say about their husbands and expressed their desire for them to be present in the delivery room. One mother explained that when she delivers at home the husband is more supportive and involved with the delivery, but at the facility he is not because the nurses treat him poorly and make it difficult for him to be involved.

> *"When you deliver at home, you get your husband being so close and supportive and he is happy with the baby when you deliver. However, when you deliver in the hospital, when he comes there, the nurses may mishandle him, (…) and they sometimes shout at them that they are not supposed to enter maternity room, hope they have stopped. If I deliver at home, he is so supportive and even prepares meals for you during that time, when you are still weak. This makes you feel appreciated and happy."* – Mother

> *"At home, when you are tired, the women will support you and a man will be called to suck air from your mouth in order to help you push the baby."* – Mother

Discussion

Key Findings

This operational research study provided a rich understanding to how the MHC can be adjusted to improve birth experiences for mothers and prevent maternal and newborn deaths by increasing facility utilization. Insight regarding the needs, preferences, traditions, and cultural practices of mothers was obtained through extensive interviews and focus groups. Overall, the results were highly detailed, and participants

expressed a vested interest in the diverse topics presented through the opinions and experiences they presented. Birthing experiences are clearly highly valued by mothers and validate the need to adjust the MHC to reflect their preferences. The key takeaways from this study can be categorized into three main themes: hesitancy toward health facility deliveries, how to create a culturally appropriate birthing space, and knowledge gaps.

Hesitancy toward Health Facility Deliveries

A mother's decision to deliver at home or at the health facility is complex. It relies on many factors including lived and anticipated experiences and pressure from TBAs and family members. As predicted from formative research, the preference of many mothers to deliver at home was due to receiving more support from neighbors and family members, having a midwife in the family, the ability to incorporate mothers' preferences such as birthing position and traditional practices, and feeling protected from threatening cultural beliefs such as Amasanga and "evil eyes." However, this study discovered that, similar to nurses, TBAs recognize the importance of facility deliveries and therefore work with the KIKOP project to encourage mothers in the community to deliver at the facility. It is likely a result of the TBA's involvement that many mothers did express the desire to utilize the facility's obstetric services due to the availability of resources which can prevent both maternal and neonatal complications such as hemorrhage and mother to child transmission of HIV. This study therefore demonstrated the integral role of the TBA's in the KIKOP project to increase health facility usage.

Not surprisingly, some women who would prefer to deliver at the facility reported experiencing barriers to accessing the services such as transportation challenges and an inability to pay for health care services. The concern over the cost of services despite the services at MHC being free of charge reflects a knowledge gap that should be addressed more thoroughly through community outreach going forward. The negative experiences of mothers who were able to overcome these barriers to deliver at a facility (either MHC or elsewhere) included discontent over the health worker shortages, sanitary conditions of the facility, quality of surgical procedures, neglect, harassment, and both verbal and physical abuse from the nurses. It is possible that the harassment and physical abuse mother's experience was in fact reference to the standard obstetric practices of cervix dilation monitoring and episiotomies. In any case, these practices are being interpreted as abuse and harassment and therefore fuel the hesitancy toward delivering at facilities. The disconnect between providers and patients regarding preferred care and treatment likely fuels the negative experiences mothers have at facilities. Efforts to improve nurses' understanding of mothers' preferences and beliefs would likely improve patient satisfaction and increase health facility utilization.

Despite mothers being educated through community outreach and in antenatal care visits on the importance of developing a birth plan to enable staying at the health facility for 24 hours post-delivery, many mothers would rather promptly return to their homes to cook, bathe, care for their families, and protect themselves against "evil eyes." Mothers often explained that they could be convinced to stay if they are given appropriate sleeping conditions, treated with respect, ensured a clean facility, and provided with incentives such as diapers, food, and soap. Considering budgetary constraints which would interfere with the provision of incentives to all mothers who deliver at MHC, efforts should be made to improve facility's cleanliness and the care provided to mothers as a means of encouraging them to stay for the monitoring period.

Creating a Culturally Appropriate Birthing Space

This research study was able to provide a wide variety of inputs on the components of a culturally appropriate birthing space in Kisii. Many opinions and preferences were reported by a large number of women, suggesting that these changes, if implemented, would be well-received by the majority of women

in the community. Questions regarding the physical features and structure of a culturally appropriate birthing space yielded rich responses. Similar to findings from the formative research study, such a space would require the presence of different types of furniture in the delivery room to accommodate a variety of birthing positions. Privacy was clearly a feature lacking from the current structure of the MHC yet considered to be of high importance to mothers. Improving privacy measures through the use of curtains, provision of hospital gowns for mothers, and enabling mothers to determine who is present in the delivery room is likely to make mothers more comfortable using the facility and subsequently recommend the facility to other women in the community. Apart from the birthing space, mothers suggested additional, larger adjustments to the clinic structure including the need for a cleaner facility, bathing facilities, a place for TBAs to stay while the mother is in labor, additional beds to the ANC wing, and an emergency transportation shuttle to a referral hospital. While these adjustments would require a great deal of funding and likely are not feasible to implement at this time, they provide inspiration to improve this facility in the long-term and can guide the development of other facilities in the future.

Mothers did not cite many cultural birthing traditions. Most commonly mothers simply pray before delivery and a enjoy a celebratory song afterwards. A few mothers also alluded to special traditions regarding the handling of the umbilical cord and placenta, yet these practices were not discussed in detail and additional information should be obtained to fully understand these practices. Mothers did express certain cultural beliefs which can pose a threat to the mother and baby including “evil eyes” and Amasanga. Since these beliefs cause fear among mothers who deliver in facilities, nurses should be encouraged to allow mothers and their TBAs or families to engage in safe practices to alleviate this fear and encourage health facility utilization. Similarly, since mothers enjoy incorporating a variety herbs into their home births to protect the mother and baby from both of these threats, hasten childbirth, alleviate pain and stomachaches, and facilitate the production of breastmilk, mothers should be allowed to incorporate these herbs during their facility delivers to the extent that it is safe to do so as determined by the medical nurses at MHC.

Knowledge Gaps

After understanding mothers’ preferences for their birth experience, it became clear that not everyone attending to the delivery and otherwise supporting the mothers was aware of these preferences. Although the nurses at MHC were aware of some preferences such as a general rejection of pain medication and the desire for better privacy measures, only one nurse knew about Amasanga and the desire for accommodations for additional birthing positions, and neither nurse cited the threat of “evil eyes” or the preference for herbal remedies.

Several comments made by TBAs and mothers about the labor and delivery process suggested knowledge gaps in their understanding of the birthing process. The behaviors resulting from their misunderstanding could result in harm to the mother or newborn, therefore their knowledge should be supplemented during ANC visits and throughout the stages of labor while the mother is in the facility to promote a safe and healthy delivery.

Despite community-wide education on the need to develop a birth plan, many mothers expressed challenges with adhering to their birth plan, leaving them without transportation or money to get to a facility. In addition, throughout the interviews, mothers often mentioned difficulties paying for hospital services, even though services at MHC are free. This suggests that further outreach may be needed to ensure mothers understand that they can utilize the maternity services at MHC without having to pay.

Finally, participants suggested that husbands are traumatized by witnessing their wives give birth and care about the physical appearance of their wives even immediately after childbirth. Further education for husbands on labor, childbirth, and the postnatal period may be needed so that husbands can be supportive for their wives and place less value on their physical appearance and sexual relationship.

Recommendations

Based on the findings from this study, ten recommendations can be made to improve MHC and create a culturally appropriate birthing space for women in the community.

1. Mothers must be provided with respectful, non-abuse care when they come to the facility. Nurses should be educated on mothers' preferred birthing positions and cultural beliefs such as Amasanga and "evil eyes." Trainings on how to provide respectful and courteous care to mothers, their relatives, and TBAs should also be provided in combination with further investigation to determine the extent to which mothers are being physical and verbally abused at MHC. Going forward, the quality of mothers' experiences should be recorded using patient satisfaction surveys.
2. The culturally appropriate birthing space itself should be equipped with furniture to enable a variety of birthing positions including a rope suspended from the ceiling to accommodate squatting, a small platform to assist with kneeling, a stool for sitting, and flat mattresses close to the ground for those who wish to lay down. A poster with images of delivery positions as well as cervix dilation models should be included in the space to educate mothers on the positions they can choose from and the stages of labor. Mothers should be permitted time to engage in prayer during labor and a celebration after childbirth.
3. Research should be done on the herbs and plants commonly incorporated into home births. Mothers should be permitted to incorporate safe herbal remedies into their birth experience as they please.
4. Curtains should be hung around all beds in ANC and delivery rooms to ensure privacy.
5. Mothers should be provided with water, soap, and basins and a private space in which to bathe after they deliver.
6. Sleeping conditions should be arranged with adequate bedding to keep mothers warm in the evenings. Mosquito nets should be provided whenever possible.
7. In Care Groups and ANC visits, mothers should be informed that services provided by MHC are free of charge, reminded that their family members can visit them at the facility, taught about natural pain relief strategies, and encouraged to develop and adhere to a birth plan that outlines transportation and establishes arrangements so that mothers can stay at MHC for the 24-hour monitoring period.
8. Nurses at MHC should be surveyed to see how often they are understaffed. Adjustments should be made to ensure that the facility is fully staffed at all times and all mothers are able to deliver with the aid of a nurse.
9. Whenever food can be provided, items mothers enjoy such as ugali, vegetables, and tea should be served.
10. Husbands should be periodically engaged in the form of focus groups or community assemblies to encourage their involvement in childbirth and support their wives as needed.

Conclusion

Despite the great progress which has already been made by KIKOP to increase health facility utilization and reduce maternal and newborn mortality, there still persists some apprehension toward health facility deliveries in Matongo. Creating a culturally appropriate birthing space at MHC would make mothers more comfortable and therefore optimize health facility usage. The recommendations listed above are based exclusively off of the stories, concerns, requests, and preferences of mothers, TBAs, and nurses living in Matongo. These recommendations would ensure that mothers are provided with safe and

dignified care; the preferences, beliefs, and cultural practices of mothers are respected; mothers are adequately prepared for their birth; and husbands, family members, and other caregivers appropriately support the mother and are treated with courtesy. By implementing these recommendations, even more mothers can be encouraged and motivated to deliver at MHC and the lingering preference for home deliveries can be put to rest.

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Appendix

Appendix 1a: Interview Guide for MHC Nurses

Definition of Culturally Appropriate Birthing Space and Care
Interview Guide and Research Questions

Location:
Date:
Start/End times:
Informants:
Facilitator:
Translator (if applicable):
Interview format:

Purpose: To determine the components of a culturally appropriate birthing space according to the local context and to guide the future development of a culturally appropriate delivery room and practices at Matongo Health Centre.

Population: One nurse working at the Matongo Health Centre in Kisii, Kenya who provides maternal and obstetric health services to women in the Matongo catchment.

Introduction

Good afternoon. Thank you for agreeing to speak with me today. I am a graduate student studying public health in the United States. I am here to assist with the evaluation of the KIKOP project in the Matongo catchment. I am interested in learning more about are the components of a culturally appropriate birth in Kisii so that we can customize the delivery room and services at Matongo Health Centre based on the preferences of local mothers.

I would like to ask you a series of questions about your experiences as a nurse at the Matongo Health Centre. Please know that there are no right or wrong answers to my questions. I only request honest answers that truly express your opinions, observations, and beliefs. I would love for you to answer every question, but you are not required to do so. If you feel uncomfortable answering a certain question, please let me know and you can skip it. We will record your voice and take notes during the interview, but your name will not appear in any document or report and what you say will be completely anonymous.

Please remember that I am a student and I am learning how to conduct these interviews. I may pause from time to time to collect my thoughts and reflect on your responses to guide the rest of the interview.

Do you understand the purpose of this interview?
Do we have your consent to continue with the interview? *(If yes, have them sign consent form.)*
Do you have any questions before we begin?

Let us begin. Feel free to interrupt me if you have any questions or do not understand something I say. To start I have a few questions to help me better understand your background as a nurse and with KIKOP.

Introductory Questions

1. What inspired you to become a nurse?

2. What is your favorite part about attending to deliveries?

3. Approximately how many deliveries have you attended to?

4. Can you tell me about your relationship with KIKOP?

Research Question 1: Are the nurses at Matongo Health Centre familiar with the cultural birthing practices preferred by the women in Kisii?

1. For what reasons do you think that some women prefer a home birth?

2. In your experience, what cultural birthing practices exist in Kisii? [Probe: privacy, teas/herbs, clothing, people in the birth room]

3. Can you tell me about any cultural practices that are incorporated into your training as a nurse?

4. In your experience, what birthing positions do most women prefer? [Probe: In what ways does the delivery room at Matongo determine what delivery positions are possible?]

5. How frequently do mothers request herbal or traditional remedies to be incorporated into their delivery at Matongo?

6. What do you think mothers want their birthing experience to be like? [Probe: people in the room, explanations about stages of labor, pain relief strategies, herbal remedies, medical interventions, nursery]

7. If we were to provide a culturally appropriate delivery room at Matongo, what do you think it would look like? [Probe: room temperature, privacy measures, furniture, birth ball, etc.; What components are missing at MHC?; Which components are most important?]

8. How do you think a culturally appropriate birth experience impacts the health outcomes of mothers and babies?

Appendix 1b: Interview Guide for TBAs

Definition of Culturally Appropriate Birthing Space and Care
Interview Guide and Research Questions

Location:
Date:
Start/End times:
Informants:
Facilitator:
Translator (if applicable):
Interview format:

Purpose: To determine the components of a culturally appropriate birthing space according to the local context and to guide the future development of a culturally appropriate delivery room and practices at Matongo Health Centre.

Population: Eight traditional birthing attendants who attend to deliveries for women in the Matongo catchment of Kisii, Kenya.

Introduction

Good morning. Thank you for agreeing to speak with me today. I am a graduate student studying public health in the United States. I am here to assist with the evaluation of the KIKOP project in the Matongo catchment. I am interested in learning more about the components of a culturally appropriate birth in Kisii so that we can customize the delivery room and services at Matongo Health Centre based on the preferences of local mothers.

I would like to ask you a series of questions about your experiences as a TBA in your community and at the Matongo Health Centre. Please know that there are no right or wrong answers to my questions. I only request honest answers that truly express your opinions, observations, and beliefs. I would love for you to answer every question, but you are not required to do so. If you feel uncomfortable answering a certain question, please let me know and you can skip it. We will record your voice and take notes during the interview, but your name will not appear in any document or report and what you say will be completely anonymous.

Please remember that I am a student and I am learning how to conduct these interviews. I may pause from time to time to collect my thoughts and reflect on your responses to guide the rest of the interview. I anticipate that this interview will take around 90 minutes.

Do you understand the purpose of this interview?
Do we have your consent to continue with the discussion? *(If yes, have them sign consent form.)*
Do you have any questions before we begin?

Let us begin. Feel free to interrupt me if you have any questions or do not understand something I say. To start I have a few questions to help me better understand your background as a TBA and with KIKOP.

Introductory Questions

1. What inspired you to become a TBA?

2. What is your favorite part about attending to deliveries?

3. Approximately how many deliveries have you attended to?

4. Can you tell me about your relationship with KIKOP?

Research Question 1: What are some reasons that mothers choose a home birth?

1. Can you describe some of the benefits mothers see in a home birth? [Probe: safety, familiar environment, comfort]

2. Can you tell me about some of the negative experiences women have had when giving birth at a facility? [Probes: disrespect, fear or mistrust of clinic staff]

3. Can you think of any other reasons why mothers decide to give birth at home? [Probe: Do women fear the clinic in some ways?]

4. We would like to improve the birthing experience at Matongo Health Center so that it has the benefits of a home birth with the safety of a facility birth. Can you describe what adjustments could be made to the clinic structure or services that would provide some of the benefits of a home birth? [Probe: mattresses on floor, bathing facilities]

Research Question 2: What makes women most comfortable during delivery at home?

1. Can you describe what birthing positions women find to be the most comfortable? [Probe: What position do most women choose during deliveries in the home?]

2. When do you think privacy is important during labor and delivery? [Probe: What measures should be taken to ensure privacy? What do women prefer to wear during delivery? What should be covered?]

3. Who do you believe should be invited into the delivery room? [Probe: Who should decide who comes into the delivery room?]

4. What kinds of information do you think mothers want to know about what is happening to their bodies during labor and delivery? [Probe: What do you usually tell women during delivery?]

Research Question 3: What are some cultural birthing practices that are important to women in Kisii?

1. In what ways is giving birth a spiritual experience to women in Kisii? [Probe: What prayers and spiritual activities happen around the birth?]

2. Can you tell me about medicines or herbal remedies used in labor and delivery? [Probe: Before, during, and after?]

3. What foods or drinks do mothers like to have to prepare for delivery?

4. What foods or drinks do mothers like to have to recover from delivery?

5. How do mothers respond to the pain they feel during delivery? [Probe: Are there expectations for how a woman should act during labor and delivery?]

6. What are some strategies used to relieve pain during labor and delivery?

Research Question 4: What makes women most comfortable at the clinic during delivery and post-partum?

1. What types of medical interventions are women usually comfortable with? [Probe: epidural, episiotomy, C-section]

2. Do mothers prefer to stay at the MHC for 24 hours after delivery to be monitored, or do they prefer to go home right away? [Probe: Why?]

3. What measures could be taken to encourage mothers to stay for monitoring?

Appendix 1c: Interview Guide for Mothers Who Delivered at Home

Definition of Culturally Appropriate Birthing Space and Care
Interview Guide and Research Questions

Location:
Date:
Start/End times:
Informants:
Facilitator:
Translator (if applicable):
Interview format:

Purpose: To determine the components of a culturally appropriate birthing space according to the local context and to guide the future development of a culturally appropriate delivery room and practices at Matongo Health Centre.

Population: Six mothers from partner communities who delivered at home.

Introduction

Good morning. Thank you for agreeing to speak with me today. I am interested in learning more about the components of a culturally appropriate birth in Kisii so that we can customize the delivery room and services at Matongo Health Centre based on the preferences of local mothers.

I would like to ask you a series of questions about your beliefs about the labor and delivery process in Kisii. Please know that there are no right or wrong answers to my questions. I only request honest answers that truly express your opinions, observations, and beliefs. I would love for you to answer every question, but you are not required to do so. If you feel uncomfortable answering a certain question, please let me know and you can skip it. We will record your voice and take notes during the interview, but your name will not appear in any document or report and what you say will be completely anonymous.

Do you understand the purpose of this interview?
Do we have your consent to continue with the discussion? *(If yes, have them sign consent form.)*
Do you have any questions before we begin?

Let us begin. Feel free to interrupt me if you have any questions or do not understand something I say. To start I have a few questions to help me better understand your experiences as mothers and with KIKOP.

Introductory Questions

1. How many children do you have? How old are they?

2. What is your favorite part about being a mother?

3. Can you tell me about your relationship with KIKOP?

Research Question 1: What are some reasons that mothers choose a home birth?

1. Can you describe some of the benefits mothers see in a home birth?
    - Probes: In what ways do mothers feel safer delivering at home? In what ways is it more comfortable to deliver at home?

2. Can you tell me about some of the negative experiences women have had when giving birth at a facility?
    - Probes: Have women you know been disrespected at health facilities? In what ways do women mistrust clinic staff?

3. Can you think of any other reasons why mothers decide to give birth at home?
    - Probe: In what other ways do women fear the health facility?

4. We would like to improve the birthing experience at Matongo Health Center so that it has the benefits of a home birth with the safety of a facility birth. Can you describe what adjustments could be made to the clinic structure or services that would provide some of the benefits of a home birth?
    - Probes: Do women want to deliver on the floor? What types of bathing facilities would women like to have?

Research Question 2: What makes women most comfortable during delivery at home?

1. Can you describe what birthing positions women find to be the most comfortable?
    - Probe: What positions do most women choose during deliveries in the home?

2. When do you think privacy is important during labor and delivery?
    - Probes: What measures should be taken to ensure privacy? What do women prefer to wear during delivery? What should be covered?

3. Who do you believe should be invited into the delivery room?
    - Probe: Who should decide who comes into the delivery room?

4. What kinds of information do mothers want to know about what is happening to their bodies during labor and delivery?

Research Question 3: What are some cultural birthing practices that are important to women in Kisii?

1. In what ways is giving birth a spiritual experience to women in Kisii?

- Probe: What prayers and spiritual activities happen around the birth?

2. Can you tell me about medicines or herbal remedies used in labor and delivery?
    - Probe: What remedies are used before, during, and after delivery?

3. What foods or drinks do mothers like to have to prepare for delivery?

4. What foods or drinks do mothers like to have to recover from delivery?

5. How do mothers respond to the pain they feel during delivery?
    - Probe: Are there expectations for how a woman should act during labor and delivery?

6. What are some strategies used to relieve pain during labor and delivery?

Research Question 4: What makes women most comfortable at the clinic during delivery and post-partum?

1. What types of medical interventions are women usually comfortable with?
    - Probe: Are women comfortable with interventions such as epidural, episiotomy, and C-section?

2. Do mothers prefer to stay at the MHC for 24 hours after delivery to be monitored, or do they prefer to go home right away?
    - Probe: For what reasons do mothers like to go home right away after delivering?

3. What measures could be taken to encourage mothers to stay for monitoring?

Appendix 1d: Interview Guide for Mothers Who Delivered at MHC

Definition of Culturally Appropriate Birthing Space and Care
Interview Guide and Research Questions

Location:
Date:
Start/End times:
Informants:
Facilitator:
Translator (if applicable):
Interview format:

Purpose: To determine the components of a culturally appropriate birthing space according to the local context and to guide the future development of a culturally appropriate delivery room and practices at Matongo Health Centre.

Population: Six mothers from partner communities who delivered at the Matongo Health Center.

Introduction

Good morning. Thank you for agreeing to speak with me today. I am interested in learning more about the components of a culturally appropriate birth in Kisii so that we can customize the delivery room and services at Matongo Health Centre based on the preferences of local mothers.

I would like to ask you a series of questions about your beliefs about the labor and delivery process in Kisii. Please know that there are no right or wrong answers to my questions. I only request honest answers that truly express your opinions, observations, and beliefs. I would love for you to answer every question, but you are not required to do so. If you feel uncomfortable answering a certain question, please let me know and you can skip it. We will record your voice and take notes during the interview, but your name will not appear in any document or report and what you say will be completely anonymous.

Do you understand the purpose of this interview?
Do we have your consent to continue with the discussion? *(If yes, have them sign consent form.)*
Do you have any questions before we begin?

Let us begin. Feel free to interrupt me if you have any questions or do not understand something I say. To start I have a few questions to help me better understand your experiences as mothers and with KIKOP.

Introductory Questions

1. How many children do you have? How old are they?

2. What is your favorite part about being a mother?

3. Can you tell me about your relationship with KIKOP?

Research Question 1: What are some reasons that mothers choose a home birth?

1. Can you describe some of the benefits mothers see in a home birth?
    - Probes: In what ways do women feel safer delivering at home? In what ways is it more comfortable to deliver at home?

2. Can you tell me about some of the negative experiences women have had when giving birth at a facility?
    - Probes: Have women you know been disrespected at health facilities? In what ways do women mistrust clinic staff?

3. Can you think of any other reasons why mothers decide to give birth at home?
    - Probe: In what other ways do women fear the health facility?

4. We would like to improve the birthing experience at Matongo Health Center so that it has the benefits of a home birth with the safety of a facility birth. Can you describe what adjustments could be made to the clinic structure or services that would provide some of the benefits of a home birth?
    - Probes: Do women want to deliver on the floor? What types of bathing facilities would women like to have?

Research Question 2: What makes women most comfortable during delivery at home?

1. Can you describe what birthing positions women find to be the most comfortable?
    - Probe: What positions do most women choose during deliveries in the home?

2. When do you think privacy is important during labor and delivery?
    - Probes: What measures should be taken to ensure privacy? What do women prefer to wear during delivery? What should be covered?

3. Who do you believe should be invited into the delivery room?
    - Probe: Who should decide who comes into the delivery room?

4. What kinds of information do mothers want to know about what is happening to their bodies during labor and delivery?

Research Question 3: What are some cultural birthing practices that are important to women in Kisii?

1. In what ways is giving birth a spiritual experience to women in Kisii?

- Probe: What prayers and spiritual activities happen around the birth?

2. Can you tell me about medicines or herbal remedies used in labor and delivery?
    - Probe: What remedies are used before, during, and after delivery?

3. What foods or drinks do mothers like to have to prepare for delivery?

4. What foods or drinks do mothers like to have to recover from delivery?

5. How do mothers respond to the pain they feel during delivery?
    - Probe: Are there expectations for how a woman should act during labor and delivery?

6. What are some strategies used to relieve pain during labor and delivery?

Research Question 4: What makes women most comfortable at the clinic during delivery and post-partum?

1. What types of medical interventions are women usually comfortable with?
    - Probe: Are women comfortable with interventions such as epidural, episiotomy, and C-section?

2. Do mothers prefer to stay at the MHC for 24 hours after delivery to be monitored, or do they prefer to go home right away?
    - Probe: For what reasons do mothers like to go home right away after delivering?

3. What measures could be taken to encourage mothers to stay for monitoring?

Appendix 2: Codebook

Culturally Appropriate Birthing Space

Topical and Interpretive Codes and Sub-Codes
Data Collection Methods: Focus Group Discussions, Key Informant Interviews
Informants: TBAs, mothers, nurses at Matongo Health Center (one KIKOP, one MHC staff)

Topical Code	Code ID	Sub-Code	When to Apply Code
Use of the Health Facility	T1.0		Apply this code to text that provides information about the use of the health facility that is not captured by the sub-codes below.
	T1.1	Facility birth experiences	Apply this code to text that describes any experiences mothers have had when giving birth at the facility.
	T1.2	Barriers to a health facility delivery	Apply this code to text that describes any barriers mothers face to delivering at the health facility if they wish to (i.e. cost, distance, transportation).
	T1.3	Perinatal Care	Apply this code to text that provides information about ante- and post-natal care at the health facility.
Home Births	T2.0		Apply this code to any text related to home births that is not captured by the sub-code below.
	T2.1	Home birth reasons	Apply this code to any text that describes why some mothers choose to give birth at home.
Culturally Appropriate Birthing Space	T3.0		Apply this code to any text that describes general recommendations about what the birthing space should look like that is not captured by the sub-codes below.
	T3.1	Furniture	Apply this code to any text that describes what furniture should be present in the culturally appropriate birthing space at Matongo.
	T3.2	Privacy	Apply this code to any text that describes the importance of privacy and any measures that should be taken to ensure privacy before, during, and after delivery at a health facility.
	T3.3	People present in delivery room	Apply this code to any text describing who should be allowed into the delivery room with the mother and who should be responsible for making this decision.
	T3.4	Adjustments to clinic structure	Apply this code to any information about what adjustments should be made to the infrastructure of and services provided by Matongo.
Cultural Practices and Beliefs	T4.0		Apply this code to any text that describes cultural practices, cultural beliefs, or spiritual rituals in Kisii relating to labor and delivery.
Mothers' Understanding of Labor	T5.0		Apply this code to any text that relates to the information mothers have and/or want to know about what is happening before, during, and after delivery.
Interventions	T6.0		Apply this code to any text that describes interventions before, during, or after delivery that is not captured by the sub-codes below.
	T6.1	Traditional practices	Apply this code to any text that describes traditional remedies and/or non-medical practices that mothers like before, during, or after delivery as substitutes for medical interventions. This may include remedies that mothers eat or drink or something the health provider or TBA does to assist the mother that does not require surgery or medicine.
	T6.2	Medical practices	Apply this code to any text that describes medicines and medical interventions or practices performed by health providers that women are comfortable with before, during, or after delivery.
	T6.3	Pain-relief strategies	Apply this code to any text describing pain-relief strategies mothers are comfortable with and/or find effective.
Birthing Positions	T7.0		Apply this code to any text relating to the positions mothers give birth in.
Foods and Beverages	T8.0		Apply this code to any text describing the foods or drinks mothers typically consume before or after delivery, as well as any text describing the foods and drinks mothers would like to have before or after delivery.
Nurses' Understanding of Patients' Preferences and Cultural Beliefs	T9.0		Apply this code to any text describing nurses' general understanding of patients' preferences and cultural beliefs that is not captured by the sub-codes below.
	T9.1	KIKOP nurses	Apply this code to any text describing the KIKOP nurses' understanding of patients' preferences and their understanding of cultural birthing practices in Kisii.
	T9.2	MHC staff nurses	Apply this code to any text describing the MHC staff nurses' understanding of patients' preferences and their understanding of cultural birthing practices in Kisii.
Interpretive Code	**Code ID**	**Sub-Code**	**When to Apply Code**
Incentives for Mothers	I1.0		Apply this code to any text describing mothers desires for incentives for delivering at or otherwise utilizing MHC for maternal health services.
Birthing Plan	I2.0		Apply this code to any text relating to the development of or adherence to a birth plan.
Husbands' Involvement	I3.0		Apply this code to any text relating to the ways in which husbands are involved with the birth and/or exhibit control or influence over mothers' decisions, health, and emotional well-being.