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Factors Influencing Home Delivery in Rural Rwanda: A Qualitative Study

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Abstract

Background: Skilled birth attendance (SBA) has been promoted to as evident strategy to improve maternal and neonatal morbidities and mortalities in Rwanda and elsewhere. Therefore, understanding the factors influencing home deliveries in rural area, especially in Kabari and Kigufi health centers which located in rural areas of Rubavu District, from July to December 2021was essential for the development of effective interventions to ensure that those remaining pregnant women could deliver at health facilities. **Methods:** The researcher used an exploratory-descriptive qualitative research design with in-depth interviews (IDIs), Focus Group Discussion (FDGs) and Key Informants Interviews (KIIs) in August 2022. We purposively selected fifty-six participants including 20 women who had delivered at home during the study period, 8KIIs with health personnel (Midwives, CEHOs, CHWs and in-charges of social affairs) and four focus group discussions (FGDs) on heterogeneous groups of seven community members comprised of husbands of women giving birth at home, nurses, elderly women, village leaders, CHWs, women and in-charge of social affairs. The data collected were transcribed, coded, and analyzed thematically using MAXQDA software. **Result:** Two main themes that emerged as factors that influenced home delivery were belief and perceptions, as well as barriers to SBA. The beliefs and perception factors that influenced home births were sociocultural and birth unpreparedness. While barriers that prevented SBA were previous childbirth experience, family issues, economic factors, health facility factors, and geographical access. **Conclusion:** Our findings provide vital information on the factors influencing home deliveries and practices in Kigufi and Kabari catchment areas. This study

underscores the need for comprehensive interventions to address the factors that affect mother's accessibility to maternity services, increased awareness of the dangers of home births. Thus, emphasis on more efficient referral system and the use of health services during childbirth in Nyamyumba and Kanzenze sectors, as ones of the rural remote areas in Rwanda and elsewhere in low resource countries.

Keywords: *Maternity services, Birth preparedness, Factors influencing, Home delivery, Qualitative study*

1.0 Introduction

Pregnancy and childbirth are critical times of vulnerability that need assistance of skilled personnel (Hidengwa et al., 2020). Globally in 2020, the skilled birth attendant accounted for 83% of births while in Sub-Sahara only 64% of births were assisted by skilled birth attendant. It means that 17% of births worldwide still occur without health professional assistance whilst 36% of birth in sub-Sahara Africa, still occurring at home in unsafe delivery (UNICEF/WHO, 2021). In most Central, Northen and Southern European countries, the proportion of domestic births is small and rate at 0.2% of home birth. This is due to historical developments in these countries, as well the legislation does not allow midwives to work in the home environment (Galková G et al., 2022).

Approximately 3 out of 10 mothers in less developed countries had delivered at home (Hernández-Vásquez et al, 2021). According to the latest RDHS survey (2019-2020), only 7% of births took place at home, 92% of births in rural areas took place in a health facility, compared to 98% of births in urban areas. A significant portion of pregnancy and childbirth-related deaths and disabilities worldwide, particularly in developing countries, are caused by complications related to pregnancy and childbirth (Tamale et al., 2022). These deaths are primarily caused by prolonged or difficult labor, complications from unsafe abortions, hemorrhage, pregnancy-related malaria, anemia, and sepsis (Ayenew, 2021). These causes can be averted if a woman is socially and economically empowered to deliver at a facility with a skilled health care professional. In line with Global Goal 3 target, all countries must reduce the maternal mortality rate below 70 per 100,000 live births and NMR below 12 per 1000 live births by 2030 (WHO, 2016). Every day, 810 pregnant women dead from unnecessary causes associated with pregnancies and childbirth, for instance 99% of maternal deaths occurred in less developed countries (World Health Organization, 2016). The countries in Sub-Saharan African had the high MMR with an estimated 542 maternal deaths per 100,000 live births (WHO, 2019). The recent Rwanda Demographic and Health Survey (2019-20) reported MMR of 203 pregnant women per 100,000 live births who dead from unnecessary factors associated with pregnancies and childbirth in Rwandan (National Institute of Statistics of Rwanda, 2021). Improving maternal and neonatal survival will also require an effort to move the place of birth from home to health facilities and provide ample information on the importance of facility birth (Boah et al., 2018).

Despite the availability of safe motherhood initiatives, such as those that offer minimum fees of maternity care, are still underutilized by pregnant women in Rwanda (Sserwanja et al., 2022), those women with poor knowledge regarding childbirth services, distance to health facility, lower family wealth status, marital status, owning insurance have been identified as factors that hinder the use of childbirth services in Rwanda (Sserwanja et al., 2022). Traditional beliefs, poor housing, strong believe in the traditional birth attendant,

low literacy rates and lack of knowledge about motherhood healthcare, influence in religious beliefs, and the geographical location of some areas of Nyaruguru District, which impedes the availability of transport and fear of undergoing caesarean section in health facilities, were identified as factors influencing home births in rural areas by the researcher (Kanyamarere et al, 2021). Different monitoring health reports demonstrated inconsistency between different areas of country; especially the rural areas demonstrate a high proportion of home delivery as highlighted above. The risk of obstetric complications has been reported to decrease in assisted deliveries by trained health workers (Shajarizadeh & Grepin, 2022).

It is of great importance that local information is needed to carry out this study to assess the reasons behind recurrence of home deliveries regardless of all interventions that have been made available to strengthen skilled birth attendance in Rwanda. Therefore, we explored the factors influencing home deliveries to recommend more effective interventions designed to promote skilled birth attendance in the impoverished and remote area as as Nyamyumba and Kanzenze Sector, in Rwanda.

2.0 Methods

Study setting:

This study was conducted in the Rubavu District of Western Province, Rwanda, which is located in the northwest region of the country. The district is primarily rural, with most of the population engaged in subsistence agriculture. The health system in Rubavu District is decentralized, with the district health office overseeing a network of health centers, health posts, community health workers and one district Hospital. The study was conducted in two health centers, Kigufi and Kabari, both of which offer maternal health services.

Kigufi Health Center is located in the Nyamyumba sector of Rubavu District and serves a catchment area of approximately 49,085 people. The health center has fourteen staff, including eight nurses and one midwife, and works with 192 community health workers in its catchment area. The health center offers a range of maternal health services, including antenatal care, delivery services, and postnatal care. Kabari Health Center is located in the Kanzenze sector of Rubavu District and serves a catchment area of approximately 26,102 people. The health center has fifteen staff, including twelve nurses, one midwife, and 84 community health workers. The health center offers similar maternal health services as Kigufi Health Center. In both health centers' catchment area, home delivery is higher compared to the rest of the district catchment area and the National level. Nationally, between July to December 2021, Rubavu district had reported the most home deliveries at 2%; of these 18% and 12% of home births were registered at Kabari

and Kigufi health centers respectively, the same period Kigufi Health Center experienced one case of maternal death who had attempted to deliver at home (HMIS, 2021).

Study design and population

An exploratory-descriptive qualitative study was conducted in order to have a deep understanding on the factors determining home deliveries among women, community members and their health care providers in the catchment areas of Kigufi and Kabari Health Centers. The study population included women who have experienced home deliveries including twenty-two cases of home birth from Kabari and twenty-one cases of home birth from Kigufi HC within the period of the study between July and December 2021(HMIS,2021; eight staff (2Midwives, 2CEHOs, 2 In charge of social affairs and 2 CHWs) working from the Kigufi and Kabari Health Centers as key informants and, four FGDs on heterogeneous groups of seven community members by each comprised by 4husbands of women who delivered at home, 4old women, 4chiefs of villages, 4 nurses, 4CHWs, 4women(pregnant or no pregnant) and 4 in charge of social affairs. Non-probability sampling was adopted to purposively select homogenous 56 participants from these two Health Centers, including twenty women among these who gave birth at home within the period of the research, 8KIIs and 28 participants divided into 4FGDs as a sufficient sample size to reach saturation because this is a qualitative approach. Recruitment of women was done in collaboration with leadership of both health centers based on data recorded from maternity registers and Siscom (HMIS,2019-2021). Then with assistance of CHWs, the women and community members were identified and convened to both health centers.

Data collection procedure

The interview guide focused on a consolidated checklist criteria developed for reporting qualitative studies (Allison Tong at al., December 2007) to design social demographic characteristics of the respondents. As well as a list of two thematic areas developed prior based on the researcher's objectives and questions about the possible factors that influence home birth. The first Author (AN) wrote the interview guide in English and then translated into Kinyarwanda which was the local language of respondents IDIs, FGDs, and KIIs. To collect the data, the researcher was supported by two trained data collectors, who received a one-day orientation on the research objectives, tools used, data collection methodology, including translation and transcription. The speeches were recorded in audio and manuscript form in a book note. The researcher also consulted existing reliable records as data sources to produce a list of women who gave birth at home between July -December 2021. The interview guide was pre-tested at the Gisenyi HC with a group of patients who came for treatment with the same characteristics as the sampled participants to determine the strengths, weaknesses and estimated time required to collect data for adjustment purposes. Data collection for this study was

conducted in August 2022 and involved 56 respondents for IDIs, KIIs and FGDs as the sample size. With assistance of CHWs, the selected participants were convened at health centers and after being informed on the objectives and procedures of the activity, they provided written consent. The interviews were conducted in a private room at the health center respectively and lasted between 30 to 45 minutes. The interview guide included questions related to the factors contributing to home deliveries and the experiences of women who had given birth at home.

The data collectors ensured that the data was collected in a respectful and culturally sensitive manner, and they took measures to maintain the confidentiality and privacy of the participants. All interviews and focus group discussions were audio-recorded, transcribed verbatim and translated into English by trained data collectors, then reviewed by the author.

Data collection and analysis:

The thematic analysis framework approach that has been applied is that used for skill-mix innovations to improve access and quality of care (Maeseneer et al., 2022) in assistance to identify patterns and themes related to the factors influencing home deliveries and the experiences of women and healthcare providers. A deductive parallel coding approach was used to create a codebook. Each interview was independently coded by two coders, one using the Kinyarwanda transcript and the other using the English translation. The coders used an open coding approach to identify and label themes in the data. Identified codes were then discussed and harmonized to generate a codebook, which was used to guide the subsequent coding of the remaining interviews. The coded data was then entered into MAXQDA software, which was used to facilitate the analysis process.

Finally, the data was synthesized into a coherent narrative that provided insights into the factors influencing to home deliveries and the experiences of women and healthcare providers. Quotations from the data were used to support the findings, and the narrative was reviewed by the research team to ensure that it accurately reflected the data and addressed the research question.

3.0 Ethics

The researcher sought clearance of the research proposal and ethical permission from Mount Kenya University's Research. The Researcher then submitted these documents to the Kigufi and Kabari Health Centres for approval to proceed with data collection.

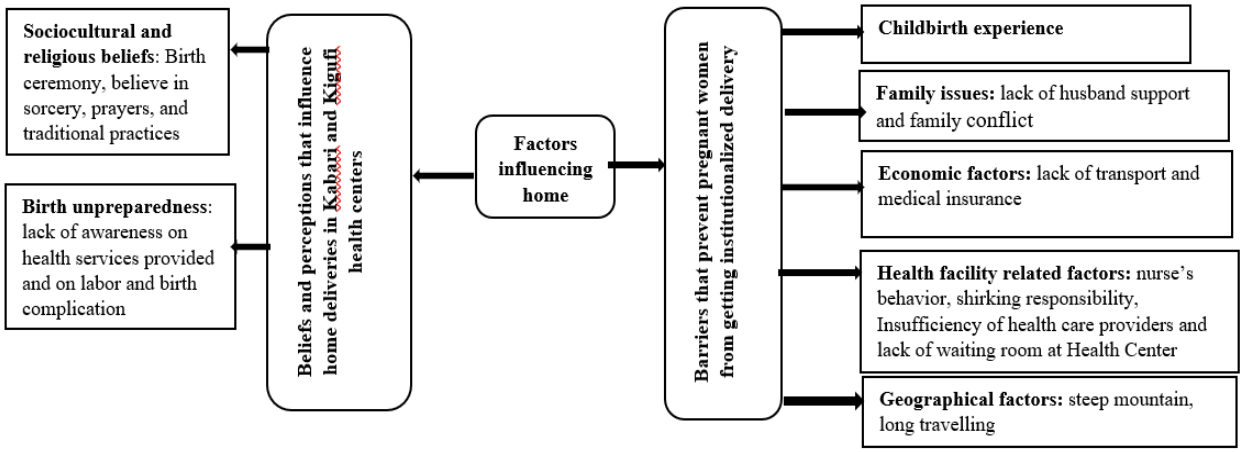
4.0 Results

Out of 20 women who delivered at home, majority were aged above 36 years 8(40%), protestant religion 9(45%), peasants 15(75%), had attended primary school 9(45%) and 12(60%) owned medical insurance. **(Table1)**

Table1: Socio-demographic characteristics of mothers who delivered at home

Variables	*Characteristic*	*Frequency (n)*	*Percentage*
Age group	20 ≤ 25 years	2	10
	25 ≤ 30 years	5	25
	30 ≤ 35 years	5	25
	≥ 36 years	8	40
Religion	No religion	2	10
	Adventist	2	10
	Catholic	7	35
	Protestant	9	45
Occupation	Peasant	15	75
	Small Famer	4	20
	Owner small business	1	5
Education level	None	8	40
	Primary school	11	55
	Secondary school	1	5
Medical insurance	Medical insurance	12	60
	No medical insurance	8	40

Figure 1. Thematic analysis framework on factors influencing home delivery in Rubavu district, Rwanda



Beliefs and perceptions that influence home delivery (Table 2)

Socio-Culture and religious believes

The socio-culture such as religious beliefs, family birth ceremony, sorcery/prayers, custom on traditional practices were important reasons for women to give birth at home.

Influence of Birth rituals, birth ceremony

The influence of birth rituals and ceremonies on home delivery was identified among factors influencing home delivery. In rural areas, families celebrate the moment of childbirth, and poor families who are unable to afford these celebrations prefer not to go to health facilities. This feeling is compounded by the lack of the necessary materials for childbirth.

"There is an established custom that families must prepare large meals and expensive clothes for mother and newborn. Mothers who failed to get her clothes and a full suitcase for her baby feel dishonored and humiliated to come to the health center for the delivery and prefer to give birth at home which she says would avoid being mocked." (KII, #2Kabari HC)

Influence of Believe in sorcery/prayers and traditional practice

In this rural area, pregnant women resort to traditional practice or to prayer groups for support and guidance, believing that the pregnancy has been terminated or poisoned and that their pregnancy is in danger due to evil forces. As well as some women use clay and herbal drugs to maintain their pregnancy or to accelerate the progress of delivery.

Seeking the assistance of traditional birth attendants is still common practice among some mothers, as one mother who delivered at home opined *"They say that when they are about to give birth, they drink that clay to help them give birth well, and they are assisted by their older women or mother in-law" (Mother: #7 Kigufi).*

Birth unpreparedness

Lack of preparedness for birth is fostered by the lack of awareness on health services provided and related cost, as well as the lack of awareness on labor and potential birth complications.

Awareness on health services provided

Lack of awareness on health services provided and related costs has a significant impact on a pregnant woman's decision to give birth at home rather than at a health facility. Participants mentioned the fear of high costs as result of unprepared medical insurance left them with no option other than home delivery. *"We believe that giving birth at a health facility will be expensive and worry that we may be transferred to a hospital where we will incur even high costs." (FGDR2, #1 Kabari)*

Awareness on labor and birth complications

Poor knowledge and awareness about labor and childbirth complications was a factor in home delivery. Participants reported that some pregnant women do not know the signs of the onset of labor and are not aware of the complications that may arise during childbirth. This lack of knowledge and awareness resulted in unsafe and unprepared home deliveries in some instances. *"When I started the birthing process, I did not know what it was all about. So, I ran to the health center when I got halfway, I could not find a motorbike to take me, and I gave birth on the way." (Mother, #6 Kabari)*

Additionally, some teenager girls hide their pregnancy status from their parents and do not attend antenatal care, leading to a lack of knowledge about potential complications. *"Teenager girls often hide their pregnancy status from their parents, leading to parental ignorance of their pregnancy. The teenagers themselves do not often attend antenatal care and are often unaware of the potential complications that could arise during delivery. As a result, they choose to give birth at home, putting themselves at risk of associated complications."(KII, #1Kabari)*

Barriers that prevent pregnant women from getting institutionalized delivery (Table 3)

Childbirth experience

Personal experience of previous related birth and labor outcomes are linked to home delivery. Some women said that the labor progresses very quickly and only suffer for a

few minutes and they give birth, there were others who said they feel no pain. *"My labor typically progresses quickly, and on one occasion, the delivery happened suddenly as I was about to leave. I felt the baby coming out and was unable to stop it."* (Mother, # 7 Kigufi)

This experience is strongly influenced by old women, multiparous women who experienced more deliveries at home especially when it happened that those previous births resulted in a positive outcome. *"Yes, the woman expecting to give birth for the third or fourth pregnancy considers that she has mastered the term pregnancy so that she does not have to wait long at the health center before giving birth; during this waiting time for a full-term pregnancy, the mother ends up giving birth at home."* (KII, #3 Kigufi)

Rural pregnant women referred to their parents in years past as if all births would be this simple. *"So, there's a perception based on ancient culture, "What if our parents who gave birth to us at home didn't exist?" There are those who still have this perception."* (FGDR2, #1 Kabari).

Family issues

The family issues revealed by the participants are the lack of support from husband or family and family conflicts. Rural families are often disrupted by marital discord, unequal sharing of responsibilities and misunderstanding about gender equality, which could hinder the family's progress towards prosperity and resilience.

Lack of husband support

It emerged that there are men who do not care to support each other with their wives in household chores or who do not give any family provisions. In this case the woman found herself solely responsible for everything and she managed in misery without any support from her husband or any other related family. As a result, it became very difficult to find everything necessary for the motherhood and they ended up giving birth at home. "*The husband? Do not talk of that creature who never cares about his children! When you tell him that you are about to have a baby and that you need to get prepared, he will say that affairs concern you not him! As you do not have anything you cross your arms and wait until you give birth at home.*" (Mother, #9 Kabari)

There are women who say that they have not had the chance to marry, in which case they are only looking for someone to impregnate them to get children. In this case, she is all alone and struggling to survive, this situation could be the reason to give birth at home. *"There are other women who give birth without a husband support, and you realize that they are single mother, they live alone" (FGD*R6, #1 Kabari)

On the other hand, concubinage and polygamy can also lead to a state where spouses get stuck in unhappy marriages. In fact, often in such relationships, the legitimate wife will be treated rather badly and deprived of her husband's income. *"The other problem was that of polygamy, a man who took the second wife finds it very hard to support the prime family" (FGDR5, #2 Kabari)*

Family conflict

Misunderstandings between family partners, family conflicts due to infidelity aggravate the life situation, hence a woman who does not expect any financial or moral support from her husband, and sometimes the spouse does not accept her child and refuses to provide maternity support. This situation could lead the woman to give birth at home as state the respondent *''Hein, the other issue may be the conflict between spouses whereby the husband denies responsibility over the pregnancy and refuses to help the mother raising funds and materials to support both pregnant women and welcome newborns. This situation pushes pregnant women to give up and decide to deliver at home"* (KII, #4 Kigufi).

Economic factors

People who live in conditions of poverty are the most affected by health problems, due to the lack of transport means and health insurance to access health services.

Lack transportation

Due to limited resources, it was difficult to get to the health center. When she was trying to walk, the women sometimes gave birth halfway.

"The health center is quite far, and it takes around one and a half hours to reach there, even when we pay two thousand on a motorcycle. There was a time when I walked to the hospital but became tired and could not move anymore. Eventually, I gave birth on the way there." (Mother, #3 Kigufi)

Medical insurance

Lack of medical insurance was identified as a barrier to accessing institutionalized childbirth. Without medical insurance, an expensive treatment plan made pregnant mothers fear giving birth in a health facility, as stated by respondent. *"I did not have any medical insurance or means to pay for medical expenses, and this made me fear that I would be charged a lot of money at the health center." (Mother, #1 Kabari).*

Health facility related factors

Health facility related factors including nurses' behavior, shirking responsibility, insufficiency of health care providers, and lack of waiting room at HC, negatively affect healthcare seeking behavior.

Nurses' behavior

The behavior of the nurse, such as insults, neglect, and late reception, emerged to be a trigger for a home birth. One of the women who gave birth at home testified that the nurse delayed examining a pregnant woman during labor; she ended up giving birth at the entrance to the maternity ward. *"There was a time, pregnant woman was ignored by the nurses, and as a result, she ended up giving birth at the entrance of the maternity room due to the nurses' negligence." (Mother*, #8 Kigufi)

Pregnant women felt that their needs, wants and expectations had not been met. They complained about poor services, including poor customer care, come and go, and lack of attention, which had a negative effect on their motivation to return for maternity services as testified by one participant from FGD *"Nurse's attitude of insulting patients. In the other world there are some nurses who lack good manners in giving care to patients." (FGDR1, #1 Kigufi).*

Shirking responsibility

As testified by the mother, nurses quit their accountability to caring for pregnant women. They tended to refer pregnant women to hospitals, which had become a common practice where every pregnant woman complained that they were immediately sent to the hospital and feared being charged high fees. *'' Another thing I often hear from women here is that they are always immediately referred to the hospital as a result, they are afraid that when reaching the hospital, the services provided will become more expensive." (FGDR4, #1 Kabari).*

Insufficiency of health care providers (workload)

Insufficient number of nurses and their workload appeared as barriers to utilize maternity services. The nurse said that due to the workload and the shortage of nurses, sometimes the nurse leaves the patient for other emergencies and the first one thinks he is abandoned. *"As of now, we have three nurses for which the health managers do not cease to cry over their number, noting again that those three should organize to serve at the health post as well. This situation may depress the pregnant woman coming for delivery to take it as negligence. And this may push her to resist coming back to the same health facility based on the service he previously received."* (KII, #1 Kigufi).

Lack of waiting room at health center, "Tegereza system"

The lack of waiting room at HC and poor implementation of "Tegereza program" were mentioned as barriers that prevent pregnant women from getting institutionalized delivery, as testified by the mother who delivered at home. When she came to the health center to give birth, she was returned home by nurses and when she got home, she gave birth. *"When I went to the health center to give birth, they told me my pregnancy was not due yet, and sent me back home and I gave birth as soon as I arrived home*."(Mother, #4 Kigufi)

Waiting two or three days at the health center for labor to progress was considered boring, as pregnant women had nothing to do but lie down or walk around. In this case, they think of the situation where they left other children at home. All of this becomes a reason to wait for a strong contraction and get to a full-term pregnancy where she might be at risk of giving birth at home or on the road. *"Yes, they refuse to be bored while waiting for delivery in the waiting room, they prefer to come when strong contractions start". (FGDR4, #1 Kabari)*

Geographical access

Crossing steep hills and long travelling distance to health facilities appeared as barriers of seeking healthcare for pregnant women. This long distance and crossing steep mountain may be aggravated by lack of required means of transport difficulties to facilitate her movements to the health facility for further support and finally decide to wait for delivery at home.

Steep mountains

As the Nyamyumba sector is a very steep hilly and difficult terrain region, with bad roads, it is difficult to get a car or even a motorbike from its community. It is a long walk to get to Kigufi health center, walking on foot, the pregnant women give birth on the way to the health center or choose to give birth at home. As it was the same case of this mother. *"We came down from the mountain, that's where I live and I was in a hurry, and there was no motorcycle, we must walk to the health center on foot, then I gave birth on the way to health center"* (Mother, # 3 Kigufi)

Long traveling distance

As evidenced by this woman who gave birth at home, from her home to the health center, she made a long journey of more than 2 hours, when she went into labor, it happened to her to give birth on the way.*" It can take about two hours of walk*" (Mother, #2 Kigufi)"

5.0 Discussion

Our findings stipulated that the preference for maintaining cultural and traditional customs, such as celebrating childbirth, having special meals after childbirth, praying before and while giving birth, belief in sorceries and traditional practice foster home delivery. "*Some pregnant women believe that their pregnancy might be damaged by evil people or by their enemies and to prevent the risks that may arise during childbirth, they must first seek prayer groups or run for traditional practices."* (KII, #4 Kabari). Compared with a study conducted in Ghana (Yarney, 2019), very strong associations were found between maternal health decisions and knowledge on pregnancy and childbirth related taboos, traditional birth attendants (TBA) patronage, and religious beliefs and practices. These findings agree with other studies conducted in Dodoma, Tanzania (Simfukwe, 2011), found that about 163 (62.9%) had traditional ceremonies after childbirth especially after the first childbirth. These wrong false beliefs induced to three delays that have their root from consulting before prayer groups and run for traditional practices instead of seeking health providers to increase the facility delivery, the health system should incorporate some cultural practices and customs in social behavior change communication.

Similar studies were in line with our findings on low awareness on labor and childbirth complications, where women could mention at least one key danger sign during pregnancy, labor and postpartum respectively, but only one in ten women could mention

three or more (Smeele et al., 2018). Our study found low awareness of the onset labor signs and complications that may arise during childbirth among the women experienced home deliveries. *"Childbirth can come suddenly like a thunderstorm and hit you like lightning and sometimes we wait until the pregnancy becomes too hot to give birth." ((Mother, #6 Kigufi).* As well as low knowledge on health services provided and related costs has a significant impact on a pregnant woman's decision to give birth at home rather than at a health facility. Through community mobilization the health providers and CHWs should strengthen communication and raise awareness to prevent unsafe and unprepared home deliveries.

Our findings are in line with other studies on the barriers that impede pregnant women's access to facility delivery services. Prior research indicates that the past childbirth and labor experience play a significant role in women's choice of birthplace, particularly when previous home births were successful (Cook K & Loomis C, 2012; Chantal Louise Woog, 2017). Our study found that women who had positive maternal outcome on previous home births believed that they would have a safe home birth in the future, even if complications arise. This perception induces three delays which usually occur during labor and childbirth and creates a false sense of security and can encourage women to give birth at home in subsequent pregnancies.
Similarly, Women in both preference groups (home and hospital) made their decisions based on negative and positive motivations. As well as insecurity, poverty, lack of food at home and at health facilities, lack of supplies, etc. Were main barriers to utilisation of maternal health services (Sluijs et al., 2015; Wilunda et al, 2014). Our study found that women who lacked support from their husband, medical insurance experienced difficulty to afford institutional delivery services. Family conflicts, misunderstandings, and gender inequality exacerbate this issue, leaving pregnant women feeling unsupported and unable to access institutional delivery services. As stated by the responded*:" I was abandoned by my husband when he found out I was pregnant. I stayed alone at home, struggling against everything while I did not have the strength to find food, even the baby's clothes and I did not have the means to pay the medical Insurance." (Mother, #3 Kabari)*

Health facility-related factors such as nurses' behavior, shirking responsibility, insufficiency of healthcare providers, and the lack of waiting room emerged as barriers to the use of institutional delivery. Consistent with previous research (Paudel et al., 2015), inadequate healthcare infrastructure, inappropriate customer care or insufficient medical supplies, can also discourage women from seeking institutional delivery services. In comparison with a previous study conducted using 29 studies across 17 countries (Penn-Kekana et al., 2017); Poor utilization of maternity waiting homes was due to lack of knowledge and acceptance, long distance, institution cultural inappropriate care and poor structure including inadequate toilets and kitchens and lack of space for family and

companions. We found that expectant mothers complained of poor service, including poor customer service, comings and goings and lack of attention, which had a negative effect on their motivation to return for maternity services. The nurses quit their accountability to caring for pregnant women they tended to refer pregnant women to hospitals, which had become a common practice. We also found that waiting for more than two days of labor progress was considered boring and provided an opportunity to worry about the children left at home. Also, due to a poor layout of the waiting room, the expectant mothers were sent home and told that she would return when they felt a strong contraction, which states the high risk of giving birth at home. The health system leadership should review and harmonize the implementation of "Tegereza program" and improve waiting room system at health center. Thus, the facilitation of pregnant women and healthcare providers is necessary to better understand the factors that impact successful implementation.

Finally, our study found that geographical accessibility was related to poor use of birthing facilities, being far away in steep hills can deplete the pregnant woman's energy when she decides to go to the facility. health. These findings were consistent with other studies that found steep mountains, long distances to walk as women travel more than 2 km to reach health facilities poorly utilize the health service for their birth (Kanyamarere et al., 2021; Kifle et al., 2018). Decentralizing maternity services to public health posts closer to the community could make it easier for pregnant women to reduce travel.

6.0 Limitations

The study has some limitations as it was conducted in a specific geographic region and the findings may not be generalizable to other regions or populations. The study also relied on qualitative data, and quantitative studies may be needed to further investigate the factors that influence institutional delivery.

7.0 Conclusions

In conclusion, this study provides valuable insights into the barriers that prevent pregnant women from seeking institutional delivery services in rural health centers in Rwanda. Understanding the local context regarding birthplace preference highlights key points that could be used to improve the accessibility and acceptability of facility birthing services in similar settings. To reduce home birth, socio-cultural beliefs and perceptions, birth experience, lack of support from family members, economic and geographic factors, as well as health facility factors should be considered. To deal with these barriers, a multifaceted approach is needed, which involves improving healthcare infrastructure and resources, community participation in childbirth preparedness education, and addressing economic and social factors that affect women's healthcare seeking behavior. It is hoped that these findings can be used to inform the development of targeted

interventions that promote institutional birthing services and improve maternal and child health outcomes in Rwanda and similar settings.

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Conflict of Interest Statement

The authors declare no conflict of interest.

Author contributions

AN, SR, MM, RK, developed study protocol. AN, MM developed data collection tool, AN, supervised data collection. AN, MM, RK conducted data analysis. AN, RK developed the manuscript. All authors reviewed and critically approved the final manuscript.

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Table 2: Thematic analysis exploring beliefs and perceptions that influence home delivery

Main Theme	Categories	Sub-category
Beliefs and perceptions	1.Socio-Culture and religious believes	1.1. Birth rituals, birth ceremony
		1.2. Believe in sorcery/prayers
		1.3 Traditional healers
	2.Birth unpreparedness	2.1. Awareness on health services provided
		2.2. Awareness on labor and birth complications

Table 3: Thematic analysis exploring Barriers that prevent pregnant women from getting institutionalized delivery

Main Theme	Categories	Sub-categories
Barriers that prevent pregnant women from getting institutionalized delivery	1. Childbirth experience	1.1 Prior pregnancy experience
	2. Family issues	2.1. Lack of husband support
		2.2. Family conflict
	3.Economic factors	3.1. Lack transportation
		3.2. Medical insurance
	4.Health facility related factors	4.1. Nurses' behavior
		4.2. Shirking responsibility
		4.3.Insufficiency of health care providers (workload)
		4.4. Lack of waiting room at HC, "Tegereza system" at HC
	5.Geographical access	5.1. Steep mountains
		5.2. Long traveling distance