



# Mothers' Willingness to Deliver at Health Facilities in Dodoma Region, Tanzania

Agatha Fabian Ngowi<sup>1\*</sup>, Theodora Bali<sup>2</sup>, Switbert Rwechungura Kamazima<sup>3</sup> and Nyasiro Sophia Gibore<sup>1</sup>

<sup>1</sup>Department of Public Health, School of Nursing and Public Health, Dodoma University, Dodoma Tanzania; <sup>2</sup> Department of Educational Psychology and Curriculum Studies, College of Education, University of Dodoma, Dodoma Tanzania; and <sup>3</sup>Department of Behavioral Sciences, the Muhimbili University of Health and Allied Sciences, Dar-es-salaam, Tanzania

**\*Corresponding author:** Agatha Fabian Ngowi, Department of Public Health, School of Nursing and Public Health Dodoma University, P.O. Box 395, Dodoma, Tanzania. Email: agywin2009@yahoo.com

---

## Summary

### INTRODUCTION

Maternal morbidity and mortality are a public health concern in most developing countries. It has been shown that skilled attendance at birth can be the single most effective intervention in preventing maternal death. However, limited studies have updated current knowledge on why some women prefer to deliver at health facilities and others do not. The study was aimed to explore mother's willingness to deliver at the health facilities and attitudes toward service providers in Dodoma Region, Tanzania

### METHODS AND MATERIALS

This was a qualitative cross-sectional study design conducted in four districts of the Dodoma region. The study population was women of reproductive age with their (spouses) who had children aged less than two years, health care providers, TBAs, and community leaders. We conducted eight focused group discussions (FGDs) and fourteen In-depth interviews (IDIs) using interview guides and an IDI checklist respectively. Data were transcribed and translated from Kiswahili to English. The transcribed documents were then exported into NVivo 10 software to facilitate the coding process and analyzed through a thematic approach.

### RESULTS

The study participants reported that the majority of women were willing to deliver at health facilities but some still preferred home delivery due to different reasons including positive or negative attitudes toward service provided by nurses and traditional birth attendants.

### CONCLUSIONS

Our findings suggest for health care providers customize respectful maternity care to all women. This may encourage all women to deliver at the health facilities; hence, decreasing the risk of maternal morbidity and mortality.

*Keywords:* Willingness, Attitude, Health Facility, Delivery, Home Birth, Dodoma, Tanzania

[*Afr. J. Health Sci.* 2022 35(3): 307 - 321]

---



## Introduction

Improving access to maternal health services is a global health priority. This is due to high rates of maternal and infant mortality as a result of poor access and poor quality services particularly in developing countries [1-3]. For many women in developing countries giving birth is associated with suffering, ill-health, and even death [2]. Globally, approximately, 800 women and girls die each day due to pregnancy and childbirth-related complications. However, an estimated 99% of all deaths occur in developing countries and more than half in sub-Saharan Africa (SSA) [4]. In Tanzania, the maternal mortality ratio is still very high at 556 maternal deaths per 100000 live births [5]. Due to high maternal deaths, the country did not achieve the Millennium Development Goal (MDG) number five (Improving Maternal Health) by 2015 and currently has embarked on Sustainable Development Goal (SDG) number three aiming at reducing the global maternal mortality ratio to less than 70 per 100000 live birth by 2030 [6].

Complications related to pregnancy and childbirth are a leading cause of morbidity and mortality for women of reproductive age [7]. There is an emerging consensus in the literature that skilled attendance at birth can be “the single most effective intervention in preventing maternal death”. [8-9]. This means that a greater proportion of all these deaths can be prevented if deliveries are assisted by skilled health professionals who are trained to diagnose obstetric complications and manage or refer them and as well as the existence of an effective postnatal healthcare system especially within the first 24 hours after childbirth [10-13].

Although maternal mortality and morbidity can be prevented through early and timely utilization of Maternal Health Care Services (MHCS), women have different

preferences for their places of childbirth either at the health facility or non-health facility [14]. Studies have shown that developing countries, especially sub-Saharan Africa have the lowest facility delivery rates in the world. For example, a study conducted in Kenya and Bangladeshi showed that, although the overall antenatal care (ANC) coverage was high only 43% and 48.9% of pregnant women delivered at the health facilities respectively [15-16]. The same applies to Tanzania where more than 90% of women make at least one ANC visit during their pregnancy but only 62.5% give birth at the health facilities with assistance from a skilled birth attendant; hence, increasing the risk of maternal mortality and morbidity [5;17].

The government of Tanzania has mandated that all maternal and child health services, including deliveries, be exempted from fees at any government health facility to increase their uptake by poor and vulnerable groups [18-19]. Although the percentage of women delivering at health facilities in Dodoma has increased from 45.1% in 2010 to 69.1% in 2015 [5; 20], still some women deliver at home and lack assistance from skilled health care providers. There is a need for understanding why some women prefer to deliver at health facilities and others do not. Knowledge of region-specific factors that influence the accessibility and utilization of MHCS during delivery is an important prerequisite for any attempt aiming to improve access to and utilization of MHCS in that particular region. Therefore, this study aimed to explore the mothers’ willingness to deliver at the health facilities and attitudes toward service providers in the Dodoma region, Tanzania.



## Methods and Materials

### *Study setting*

The study was conducted in Dodoma Region, Tanzania, which is among 31 administrative Regions (i.e., 26 in Tanzania Mainland and 5 in Tanzania Zanzibar). The Region has seven districts including Mpwapwa, Kondoa, Bahi, Kongwa, Chamwino, Chemba, and Dodoma City. Dodoma Region is the National Capital of Tanzania, located at the centre of the country. It is the twelfth largest in the country with an area equivalent to five per cent of the total area of Mainland, Tanzania [21]. The Region is also the seventeenth most densely populated region with 50 people per square kilometre and had a population of 2,08 million and an annual growth rate of 2.1 [21]. The main tribes of the region are Wagogo, Warangi, and Wasandawe. However, due to the region being a national capital and rapid urbanization, many people from different areas inside and outside the country have migrated into the Region

### *Study design, sampling, and participants*

A qualitative cross-sectional study design was adopted that allowed the collection of data in the community at a single point in time. Data were collected through IDI and FGDs. The study participants were women of reproductive age with their (spouses) who had children aged less than two years, health care providers, traditional birth attendants (TBAs), and community leaders

The sampling techniques used were simple random and purposive sampling in the selection of districts, wards, villages/streets, and study participants. Purposive sampling enables the selection of participants with rich information regarding mothers' attitudes toward service providers and their willingness to deliver at health facilities. A simple random sampling

technique, using the lottery method was used to select four districts - Kondoa, Kongwa, Chamwino, and Dodoma City out of seven districts. A simple random technique was also used to select one ward in each selected district. A list of all wards from each selected district was obtained, where four wards were selected randomly, using the lottery method. Finally, a list of all villages/streets was obtained and one village was picked randomly from each ward, ending with a total of four villages/streets. From each selected village/street, twenty households were selected based on couples living together and having children aged less than two years. With the help of community leaders, participants were invited to participate in the focus group discussion (FGD) which was conducted separately for males and females. Those partners who met the inclusion criteria but refused to participate and those who were sick or not mentally fit were excluded from the study. However, couples who had resided in the area for less than six months were also excluded because they would not have had enough local experience in maternal health services. A total of 8 FGDs were conducted and each FGD comprised 8-10 participants.

Moreover, participants for IDIs were purposively selected to participate in the study which involved four health care providers, six community leaders, and four TBAs. The data saturation point was reached when no new information linked to the research objective was emerging. Therefore, two planned IDIs with community leaders were discontinued after sharing reflections and preliminary analysis among the research team.

### *Data collection methods and tools*

FGDs and IDIs were used to collect data using the interview guide and checklist. Data collection tools were developed in English and translated into Kiswahili a national language and



understood by the majority of the study participants. Before the actual data collection process, tools were pretested in one village which was not included in the study, and adjustments were made according to early experience and information participants had provided.

Three research assistants (RAs) (one male and two females), experienced in qualitative research were involved in the data collection process. The RAs underwent training for two days before data collection to familiarize themselves with data collection tools. All RAs were fluent in the Kiswahili language. The female RAs were involved in women's FGDs, while a male RA was involved in men's FGDs. The fieldwork data collection was conducted from January to June 2015. During the data collection process, a lead author moderated the FGDs while a RA operated the tape recorder and took notes. These discussions provided an opportunity for the researchers to explore attitudes regarding service providers' and mothers' willingness to deliver at the health facilities and the reasons for their choices. IDIs participants were mainly asked to share their experiences regarding the topic under discussion and provide more insight into the subject. After self-introduction and explanation of the objectives of the study; the session started by asking simple questions about family wellbeing as an ice breaker to create a comfortable atmosphere. This was followed by more specific questions about the study objectives.

To ensure privacy and confidentiality, each FGD and interview was conducted in a quiet place in the village/ward office or under a tree. Both FGDs and IDIs were conducted in the Swahili language and the average time for FGDs was 60 – 80 minutes, while IDIs took 40 – 60 minutes.

### **Data analysis**

Before data analysis, the tape-recorded interviews were transcribed verbatim into Kiswahili which is the national language for participants as well as for the researchers. Then the translation of the transcripts from Kiswahili to English was done by the researchers. Twenty-five per cent of the transcripts were back-translated into Kiswahili to check for accuracy whereas the research team compared Kiswahili and English versions for differences and similarities while listening to the original voice recordings. Seventy-five per cent of the transcripts which were not back-translated were also reviewed by the research team by listening to the original voice recordings to make sure that they retained the original meanings. Each translated transcript was compared with the hand-written field notes.

After proofreading and making corrections, the transcribed documents were then exported into NVivo 10 software (QSR International, Melbourne, Australia) to facilitate the coding process. The data were analyzed using a thematic approach whereby authors generated the codes and examined for similarities and differences. Codes that express the same meaning were grouped and assigned a phrase; phrases for several groups of codes constituted descriptive themes. The further analysis went on towards answering the main research objective whereby information captured from the participants' views in the process of the descriptive theme resulted in more abstract analytical themes (*Figure 1*). Moreover, the data analysis process was completed by the two pairs of authors who separately met, compared outputs, and achieved a consensus on the themes. Triangulation of the different data sources, FGDs, IDIs, and field notes were employed to validate the data. Finally, the main themes that were identified included mothers'



willingness to deliver at health facilities and home delivery preference

### ***Trustworthiness of the study***

The trustworthiness of the findings of this study can be observed in various criteria developed for qualitative research, namely credibility, dependability, transferability, and conformability [22]. Credibility means, how well the data addressed the intended focus. This was ensured through the use of triangulation methods of data collection whereby both FGDs and IDIs were used. The researchers are knowledgeable of the subject matter and familiar with the study area which also ensured credibility. Dependability was enhanced through the translation of IDI checklists and FGD guides from English to Kiswahili to facilitate the free expression of participants, as the participants were more familiar with Kiswahili – the national language. The data collection tool included open-ended questions which allowed openness to new insights and therefore, the new subject that emerged were measured in subsequent data collection and the analysis process as an emergent design.

Transferability was facilitated by providing a description of the study context, selection criteria, and data collection and analysis process. The purposive sampling techniques were used which enable the selection of participants with rich information and who fulfilled the participation criteria. The confidentiality of information collected was maintained by encouraging the participants not to share the discussion outside the group. The presentation of the findings together with appropriate quotations allows readers to assess the transferability of the findings. The conformability of data was ensured through the process of translation of data collection tools from English to Kiswahili to enhance the free expression of participants and back translation

from Kiswahili to English to confirm the accuracy of translation before data collection.

### ***Ethical and consideration***

Ethical approval for this study was granted by the University of Dodoma Research and Ethical Clearance Committee. Permission to collect data was obtained from the Dodoma Regional Administrative Secretary, Dodoma Municipal Director, and District Executive Directors of Chamwino, Kongwa, and Kondoa. The permission letters obtained were then presented to the respective District Medical Officers and the local leaders who granted permission to conduct the study in their areas. Informed consent (oral/written) was obtained from each study participant and participants were assured the right to withdraw from the study at any time. Confidentiality was guaranteed and only identification numbers (ID) were used to identify participants.

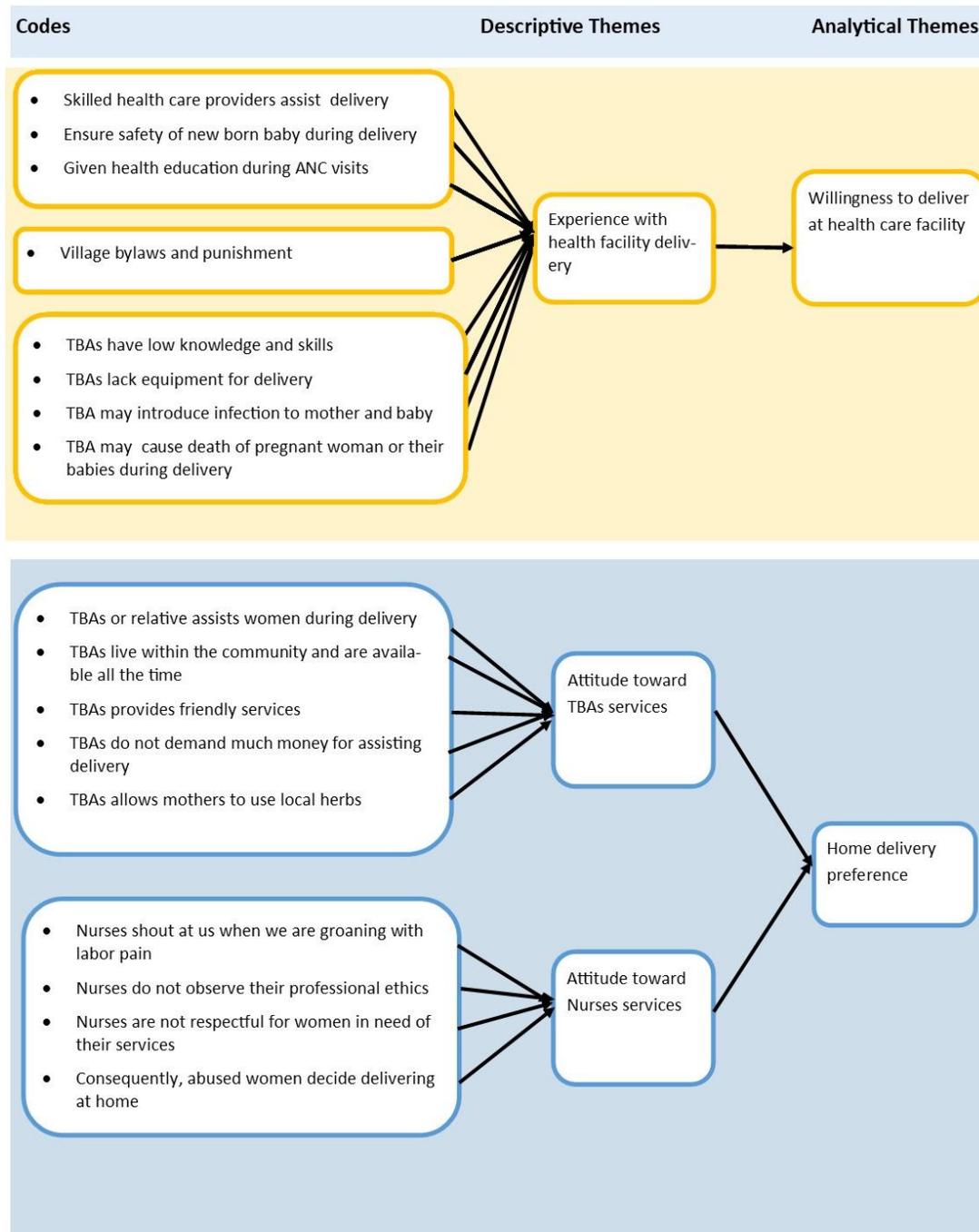
## **Results**

### ***Characteristics of study participants***

In this study, we conducted 8 FGDs (4 with women and 4 with men) and 14 IDIs (6 with community leaders, 4 with health care providers, and 4 with TBAs) making a total of 84 participants. About 45 participants were female and 39 were males, both aged between 18 and 63 years.

### ***Mothers' willingness to deliver at health facilities***

The study aimed at understanding, from the participants' perspectives, the mothers' attitudes toward service providers and willingness to deliver at the health facilities in this area. During FGDs and IDIs we posed a question, "Are mothers in this area willing to deliver at the health facilities, and why"? In the course of the discussion, participants expressed mothers' preferred places of birth for their children.



**Figure 1:**  
*Thematic Analysis from Codes to Analytical Themes*



Findings indicated that the majority of women preferred to deliver at health facilities and others at home. Among the reasons given for preferred health facility delivery were: assistance from skilled healthcare providers, ensuring the safety of newborn babies during delivery, and health education given during ANC visits. They explained that during ANC visits, they were taught about the importance of delivering at health facilities. The participants also explained that nowadays, TBAs are not allowed to assist with deliveries; they are required to refer or escort their clients to the nearest healthcare facility. In addition, the participants recognized existing village by-laws punishing home deliveries. A female participant in the FGD in District 'A', for example, explained,

*"I prefer delivering at the health facility because there are nurses and doctors [Clinical Officers] who help us during childbirth and ensure the safety of my baby. For example, I delivered my young child at the District Hospital ... I was assisted by a competent nurse"* (FGD woman, District 'A').

A female participant in the FGD in District 'B' observed,

*"Nowadays, we are insisted to deliver at the health facility and majority of us deliver there ... However, there are some women who, for some reasons, still deliver at home ... When you deliver at the health facility you are assisted by a nurse who is knowledgeable in managing the childbirth process"* (FGD woman, District B').

A health care provider in an IDI reported,

*"When women attending ANC visits during pregnancy, were given health education concerning the importance of delivering at the health facilities to ensure the safety of the baby during delivery".* (IDI health care provider, District 'B').

A female participant in FGD in District 'D', narrated,

*"I have three children ... I delivered two of them at home and I was assisted by a TBA ... I delivered my young child at the health facility because nowadays TBAs are not allowed to assist deliveries ... They [TBAs] are required to refer or escort their clients to the nearest health facilities"* (FGD woman, District 'D').

A TBA interviewed in district 'D', confirmed, *"Currently, we are not allowed to assist women during childbirth, instead we are supposed to escort them to the health facility to be assisted by a nurse or a doctor [Clinical Officer]"* (IDI TBA, District 'D').

Most of the villages in the study area had introduced village by-laws that intend to eliminate home delivery. If a woman delivers at home, she and her family are charged between TShs. 20,000 and 50,000 (appr. \$9-22). This punishment/charge aims to motivate women to deliver at the health facilities or deter them from delivering at home. A community leader interviewed in District 'C', explained,

*"In our village, we have introduced a village by-law of charging TShs. 50,000 [\$22] as a punishment to a woman who delivers at home. This pushed many women to go to the health facility soon when she feels a sign of labour... So, if a labour complication arises, she will be at the hospital and assisted by health care providers"* (IDI Community leader, District 'C').

However, participants complained of the punishment/charge given to the family due to home delivery while women are not told the exact date of delivery. A man in FGD said,

*"We are given charges of 50,000Tsh when a woman delivered at home yet they are not told exactly the date of delivery during ANC attendances."* (FGD man, District 'C').



Another man also narrated,

*“Nurses tell pregnant women the expected date of delivery only but when she gets an abstract labour and deliver at home she will be fined 50,000/= Tsh.”* (FGD Man, District ‘D’).

Other participants interviewed in the study area expressed negative attitudes toward the TBAs. They claimed that they do not trust their (TBA) services due to low knowledge and skills and lack of equipment so they cannot assist women during delivery. A female participant narrated that:

*“We do not trust TBAs’ services because they do not have equipment for assisting delivery”* (A woman in FGD, district ‘D’). *Another female participant in the same FGD added “TBAs are not providing safe service and therefore they can cause women to be infected with diseases such as HIV/AIDs”* (FGD woman, district ‘D’).

Again, participants explained that due to low knowledge and skills among TBAs, they can cause the death of pregnant women or their babies during delivery. A female participant in FGDs reported,

*“We do not trust TBAs’ services because they can cause death to women or their babies due to lack of enough knowledge and skills to conduct safe delivery.... one TBA delivered a woman and caused the death of her baby due to excessive pulling of baby’s head.”* (FGD woman, District ‘C’).

### **Home delivery preference**

Although the majority of women preferred to deliver at health facilities, still few, old and birth-experienced women preferred delivering at home with the assistance of TBAs or relatives. Among reasons given for home birth preferences were: 1) the TBAs live within the same community and they were available all the time. When it happens that a woman starts labour pain abruptly, they may be called to assist

a labouring woman at her home place; 2) Other participants reported they prefer delivering at home because they believe TBAs provide friendly services and do not demand much money for assisting delivery. It was reported that the TBAs charge only TShs. 5,000 [appr. . \$2] for assisting one delivery; whereas healthcare providers may demand bribes of up to TShs. 20,000 [appr. \$9] for assisting one delivery. A female participant in the FGD in District ‘B’, for example, presented,

*“I prefer delivering at home because in our village we have a traditional birth attendant [TBA] who helps us during childbirth ... Even if labour starts abruptly at home, she will come to help because she is available all the time”* (FGD Women, District ‘B’).

Another participant in the same FGD added,

*“A traditional birth attendants [TBAs] provide friendly services to women during delivery ... They do not demand much money when assisting women during delivery ... They [TBAs] charge TShs, 5,000 [appr. 2] only to assist one delivery ... The nurses at the health facility demand up to TShs. 20,000 [appr. \$9] per delivery assisted”* (FGD Women, District ‘B’).

Another female participant in District A had this to say,

*“We trust TBAs’ services because some of them are registered in the health facility and they have enough knowledge to assist women during delivery”.* (FGD women, District ‘A’).

Another woman in the same FGD added

*“TBAs provide friendly services and if you have a problem they make a phone call to the hospital to get transport to the hospital”.* (FGD woman, District ‘A’).



It was also noted that other women preferred delivering at home especially when they do not perceive any pregnancy complications. The majority of old and birth-experienced women believed that only mothers with pregnancy complications should deliver at the health facilities. A female participating in an FGD in District 'C', stated,

*“Those women with problems during pregnancy are the ones who are supposed to go to the health facilities for childbirth ... I have never experienced pregnancy or birth complications ... I have delivered my four children at home safely with the traditional birth attendant’s assistance”* (FGD woman, District ‘C’).

Similarly, old, child-birth-experienced, reported preferred delivery at home with TBAs' assistance which allows them to use traditional herbs when they have problems during childbirth. Narratives demonstrated that some old and birth-experienced mothers take homemade concoctions believed stimulating/intensifying contractions (or to control prolonged labour) for normal delivery. A female participant during FGD in district 'A' narrated,

*“Traditional birth attendants in our community provide good services and when you have a problem they give you local herbs to facilitate processes of labour”* (FGD woman, District ‘A’).

A female participant in an FGD shared her experience saying,

*“Cultural practices – still exist in some families... we use local herbs (boiled roots) to facilitate labour when delivery process delays. I used it and I didn't get any problem. (Women FGD, District ‘C’).*

A male participant in the FGD in District ‘C’ who serves as a traditional healer (TH) in this area, confirmed,

*“We use local herbs in this area... I am a traditional healer ... I help mothers in this village and beyond to deliver normally ... Last time my wife had prolonged labour; I gave her home-made medicine [juice from boiled herbs] that helped her to deliver normally”* (FGD Male, District ‘C’).

A TBA interviewed in District ‘A’, recounted,

*“In this area, we have our traditional practices especially when a woman is having a problem during childbirth... We give them local herbs [boiled medicinal plant roots, barks, and or leaves] to help them deliver normally”* (IDI TBA, District ‘A’).

Finding from this study also showed that, currently this traditional practice of using local herbs to facilitate the childbirth process is declining because TBAs are not allowed to assist women during delivery. This was reported by a health care provider in district 'C' during an IDI, *"This traditional practice was conducted by TBA but nowadays they can't because they are not allowed to assist delivery of a baby"* (IDI health care provider, district ‘C’).

Perceived disrespectful behaviour and abusive language expressed by some nurses in the labour wards were also reported to cause women to prefer delivering at home with the assistance of TBAs or relatives. A female participant during FGD narrated,

*"Some nurses are not friendly to us when they are providing service... They shout at us when we are groaning with labour pain ...That's why some women are discouraged to go to the health facility and delivered it at home* (A woman in FGD, District ‘B’).



Another female participant during FGD reported that,

*“Some women delay informing their husband or relatives that they have started labour pain until they deliver at home... Those women do it purposely just because they don't want to go to the hospital because no good service”* (A woman in FGD, District ‘D’).

During an FGD with men, participants acknowledged receiving complaints from their wives who deliver at the health facility and experienced disrespectful behaviour and abusive language expressed by some of the nurses in the labour ward. A participant in district ‘C’ narrated,

*“Some nurses operate the way they like ... They do not observe their professional ethics ... They are often not respectful to women in need of their services ... Consequently, abused women decide to deliver at home”* (A Man in FGDs, District ‘C’).

## Discussion

The current study explored mothers’ willingness to deliver at the health facilities and attitude toward service providers using data-driven thematic analysis. Two major themes emanated from the data including mothers’ willingness to deliver at health facilities and home delivery preference.

In the first theme, participants acknowledged that the majority of women preferred to deliver at the health facilities to be assisted by skilled health care providers and to ensure the safety of newborn babies during delivery. This also shows that women appreciate health education given during ANC visits on the importance of delivering at the health facilities. This is in line with the results of previous studies which showed that the majority of women preferred to deliver at the health facilities and the rate of health facility deliveries was high

[23-25]. The noted increase in preferred health facility delivery in the study area could be due to fee exemption for maternal health care services, improved primary health facilities with maternity health care services, and ongoing health promotion campaigns through media, health care providers, and community leaders [26].

Nonetheless, the majority of women could prefer to deliver at the health facility due to the introduction of home birth fines in the study area where most villages have initiated village by-laws and punishment for home delivery. When a woman delivers at home, a penalty ranging from 20,000-50,000/= Tshs is paid by the head of the household/family. This measure has compelled women to deliver at health facilities. Although this practice motivates women to deliver at the health facilities, it can adversely affect the health of a mother and her baby, indirectly. This is because the amount of money paid as a penalty could help the families to buy nutritious food for the health of mothers and their babies. Again, most women who deliver at home live in rural areas and few can afford to pay such an amount. If the families will not be able to pay that amount, women would be scared to go to the health facilities for postnatal care (PNC) check-ups and also might avoid taking their babies to the clinics for vaccination. This is dangerous because the health of the mothers and their babies will be at risk due to a lack of follow-up care after delivery. Therefore, there is a need for revising the village by-laws and finding an approach to motivate families to prefer delivery at the health facilities, instead of the current penalty-based enforcement.

Although the majority of women in the study area preferred to deliver at the health facilities, some of them still preferred home delivery. It was found that women prefer to be



assisted by TBAs during childbirth because they trust them and are perceived as providing timely and friendly services. A previous study conducted in the Kigoma region, Tanzania, also showed that women living in rural areas commonly consulted TBAs during delivery [27]. Researchers reported that women trust services provided by TBAs, daring even to show their ANC cards hoping that the TBAs could use the information written on the cards [27]. Another study conducted in Kongwa District, Dodoma, also demonstrated that home deliveries persist as showed by 65% of the respondents having delivered at home once and assisted by TBAs [28]. Some women in the community continue to believe that only women with pregnancy complications should deliver at the health facility. Generally, women's experience of delivering more than two times influences their perspectives that they are not at risk and hence preferred to deliver at home. Therefore, there is a need for the health care providers to continue educating women and their families on the importance of delivering at the health facilities and making sure that all women who attended health education sessions during ANC visits understood the message.

Moreover, findings from this study showed that some women in the study area prefer delivering at home and being assisted by TBAs because they allow labouring women to use traditional herbs when they have problems during pregnancy or delivery. It was reported that some women still believe in the use of traditional herbs and took them during delivery to help in speeding up the birth process when a woman had prolonged labour, instead of seeking skilled help at the health facilities. Another study also reported the same finding which showed that women believe in the traditional practices of applying *mlenda* leaves in the birth canal by hand during childbirth. These leaves are very

lubricious and when applied supposedly they make it easier for the neonate to move through the birth canal [29]. However, past studies have demonstrated the dangers associated with the use of traditional herbs as they have been associated with many risks, including rupture of the uterus and maternal and neonatal deaths [30]. Traditional herbs given to women to enhance the birth process can also cause a delay in seeking services of a health facility for delivery and hence, risking the health of a mother and her baby.

According to the National Health Policy of Tanzania, the Ministry of Health (MoH) recognizes the role and contribution of traditional and alternative health care to the health status of people [31]. Tanzania has also enacted a Traditional and Alternative Medicine Act, 2002 that legalizes the practice of traditional medicine and the two health care systems are now under one MoH [30; 32]. Currently, both traditional and western medicines are widely accepted and patients can choose between the two when in need of health attention. Therefore, there is a need for the two health care systems to design a framework on areas for collaboration and research activities on traditional herbs used in the community to speed up the birth process to improve women's health. The Institute of Traditional Medicine (ITM) at the Muhimbili University of Health and Allied Sciences (MUHAS) could be entrusted to spearhead this endeavour.

### **Limitation of the study**

This study used the FGDs method of data collection which could be a challenge for some female participants to share some information because of shyness. The researchers solve this challenge by conducting FGDs in separate groups for males and females and reminded them that all issues that were discussed will remain within the group. Again,



some TBA were afraid of providing detailed information due to the recent ban on TBAs not conducting delivery services rather than escorting women to the health facilities. However, researchers used triangulation methods of results through both IDIs and FGDs, thereby increasing the credibility of the lessons learned.

## **Conclusion and recommendations**

Fostering accessible and respectful maternity health services, customized to the needs and beliefs of individual women, is a key to increasing skilled attendance at birth as well as reducing maternal morbidity and mortality. Indeed, this study found that the majority of women in the study area were willing to deliver at health facilities to be assisted by skilled health care providers and to ensure the safety of newborn babies during delivery. This is partly due to health education given during ANC visits, and partly to the introduction of home birth fines in the study area. Doubtlessly, this penalty may have indirect consequences of adversely affecting the health of a mother and her baby as most of them are poor and cannot afford to pay the amount charged. As a result, women may not report to the health care facility for PNC services, including the mandatory vaccination for the baby.

It is, therefore, recommended that the health care providers customize respectful maternity care to all women. Moreover, there is a need for community leaders to revise the village by-laws of home birth fines, which foster unequal access to maternal health services by poor women; and to find approaches to motivate families to prefer delivery at the health facilities. This may encourage all women to deliver at the health facilities; hence, decreasing the risk of maternal morbidity and mortality.

## **Acknowledgements**

We wish to thank all data collectors and the study participants for their willingness to get involved in the study and avail their time for the interview. We also extend our thanks to the staff of the School of Nursing and Public Health at the University of Dodoma for the assistance provided in this study.

## **Funding information**

This study was part of the PhD study at the University of Dodoma and received funds from the Higher Education Student Loan Board of Tanzania. The funder had no role in study design, data collection, and analysis, decision to publish, or preparation of the manuscript.

## **Authors' contribution**

AFN contributed to study design, engaged in data collection and data analysis and drafted the Manuscript. TB SRK and NSG contributed to the data analysis and revised the manuscript. All authors read, commented on, and approved the final manuscript

## **Availability of data**

The data used in this study are available from the corresponding author on reasonable request.

## **Conflict of interests:**

The authors declared no potential conflicts of interest.

## **Author contact emails**

Ngowi A. F. - agywin2009@yahoo.com  
Bali T. - : balitheodora@gmail.com  
Kamazima S. - skamazima@gmail.com  
Gibore N. S. - nyasiro@hotmail.com

## **References**

1. **Magoma M, Requejo J, Campbell OM, Cousens S, Filippi V.** High ANC coverage and low skilled attendance in a rural Tanzanian district: a case for implementing a birth plan intervention.



- BMC pregnancy and childbirth. 2010 Dec;10(1):1-2.  
<https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-10-13>
2. **Titaley CR, Dibley MJ, Roberts CL.** Factors associated with non-utilization of postnatal care services in Indonesia. *Journal of Epidemiology & Community Health.* 2009 Oct 1;63(10):827-31. <https://jech.bmj.com/content/jech/63/10/827.full.pdf>
  3. **WHO report 2009,** Maternal mortality (online) Available from: [http://www.who.int/making\\_pregnancy\\_safer/topics/maternal\\_mortality/en/index.html](http://www.who.int/making_pregnancy_safer/topics/maternal_mortality/en/index.html)
  4. **WHO.** *Maternal mortality.* WHO News/Fact sheets, 2018
  5. **Tanzania Demographic and Health Survey and Malaria Indicator Survey, 2015–2016.**  
[www.nbs.go.tz/.../index.../statistics.../health-statistics/demographic...health-survey-dhs/](http://www.nbs.go.tz/.../index.../statistics.../health-statistics/demographic...health-survey-dhs/)
  6. **Johnston, R. B.** (2016). Arsenic and the 2030 Agenda for sustainable development. *Arsenic Research and Global Sustainability - Proceedings of the 6th International Congress on Arsenic in the Environment, AS 2016,* 12–14. <https://doi.org/10.1201/b20466-7>
  7. **Exavery A, Kanté AM, Njozi M, Tani K, Doctor HV, Hingora A, Phillips JF.** Access to institutional delivery care and reasons for home delivery in three districts of Tanzania. *International journal for equity in health.* 2014 Dec;13(1):1-1. <https://link.springer.com/article/10.1186/1475-9276-13-48>
  8. **Lozano R, Wang H, Foreman KJ, Rajaratnam JK, Naghavi M, Marcus JR, Dwyer-Lindgren L, Lofgren KT, Phillips D, Atkinson C, Lopez AD.** Progress towards Millennium Development Goals 4 and 5 on maternal and child mortality: an updated systematic analysis. *The Lancet.* 2011 Sep 24;378(9797):1139-65. (<https://www.sciencedirect.com/science/article/pii/S0140673611613378>)
  9. **AbouZahr C.** Global burden of maternal death and disability. *British medical bulletin.* 2003 Dec 1;67(1):1-1. <https://academic.oup.com/bmb/article/67/1/1/330397>
  10. **Freedman LP, Graham WJ, Brazier E, Smith JM, Ensor T, Fauveau V, Themmen E, Currie S, Agarwal K.** Practical lessons from global safe motherhood initiatives: time for a new focus on implementation. *The Lancet.* 2007 Oct 13;370(9595):1383-91. [https://www.academia.edu/download/42434188/Practical\\_lessons\\_from\\_global\\_safe\\_motherhood\\_20160208-1013-unmmkf.pdf](https://www.academia.edu/download/42434188/Practical_lessons_from_global_safe_motherhood_20160208-1013-unmmkf.pdf)
  11. **Ronsmans C, Graham WJ,** Lancet Maternal Survival Series steering group. Maternal mortality: who, when, where, and why. *The Lancet.* 2006 Sep 30;368(9542):1189-200. [https://www.publichealth.columbia.edu/sites/default/files/pdf/lancet\\_maternal\\_survival\\_1.pdf](https://www.publichealth.columbia.edu/sites/default/files/pdf/lancet_maternal_survival_1.pdf)
  12. **Adegoke AA, Van Den Broek N.** Skilled birth attendance-lessons learnt. *BJOG: An International Journal of Obstetrics & Gynaecology.* 2009 Oct;116:33-40. <https://obgyn.onlinelibrary.wiley.com/doi/pdf/10.1111/j.1471-0528.2009.02336.x>
  13. **Filippi V, Ronsmans C, Campbell OM, Graham WJ, Mills A, Borghi J, Koblinsky M, Osrin D.** Maternal health in poor countries: the broader context and a call for action. *The Lancet.* 2006



- Oct 28;368(9546):1535-41.  
<https://files.givewell.org/files/Cause12/+UNICEF/Lancet%20Maternal%20Mortality%205.pdf>
14. **Babalola S, Fatusi A.** Determinants of use of maternal health services in Nigeria-looking beyond individual and household factors. *BMC pregnancy and childbirth.* 2009 Dec;9(1):1-3.  
<https://link.springer.com/article/10.1186/1471-2393-9-43>
15. **Kitui J, Lewis S, Davey G.** Factors influencing place of delivery for women in Kenya: an analysis of the Kenya demographic and health survey, 2008/2009. *BMC pregnancy and childbirth.* 2013 Dec;13(1):1-0.  
<https://link.springer.com/article/10.1186/1471-2393-13-40>
16. **Jat TR, Ng N, San Sebastian M.** Factors affecting the use of maternal health services in Madhya Pradesh state of India: a multilevel analysis. *International journal for equity in health.* 2011 Dec;10(1):1-1.  
<https://equityhealthj.biomedcentral.com/articles/10.1186/1475-9276-10-59>
17. **Afnan-Holmes H, Magoma M, John T, Levira F, Msemu G, Armstrong CE, Martínez-Álvarez M, Kerber K, Kihinga C, Makuwani A, Rusibamayila N.** Tanzania's countdown to 2015: an analysis of two decades of progress and gaps for reproductive, maternal, newborn, and child health, to inform priorities for post-2015. *The Lancet Global Health.* 2015 Jul 1;3(7):e396-409.  
<https://www.sciencedirect.com/science/article/pii/S2214109X15000595>
18. **Ministry of Health:** National Health Policy. United Republic of Tanzania: 2013.  
<https://www.healthresearchweb.org/files/Tanzania%20National%20Health%20Policy%202003.pdf>
19. **Ministry of Health.** (MOH) Report on Health Care and Financing in Tanzania: 2005 Fact Sheet No. 1.
20. **Tanzania Demographic Health Survey 2010,** (Online) National Bureau of statistics Tanzania: <http://www.nbs.go.tz/DHS/index.htm>.
21. **Tanzania NB. 2012 population and housing census.** <https://www.nbs.go.tz/nbs/takwimu/census2012/Projection-Report-20132035WallChart.pdf>
22. **Patton MQ.** Qualitative research and evaluation methods 3rd Ed: Thousand Sage: Oaks.
23. **Ngowi AF, Kamazima SR, Kibusi S, Gesase A, Bali T.** Women's determinant factors for the preferred place of delivery in Dodoma region Tanzania: a cross-sectional study. *Reproductive health.* 2017 Dec;14(1):1-8.  
<https://link.springer.com/article/10.1186/s12978-017-0373-7>
24. **Enuameh YA, Okawa S, Asante KP, Kikuchi K, Mahama E, Ansah E, Tawiah C, Adjei K, Shibanuma A, Nanishi K, Yeji F.** Factors influencing health facility delivery in predominantly rural communities across the three ecological zones in Ghana: a cross-sectional study. *PloS one.* 2016 Mar 31;11(3):e0152235.  
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0152235>
25. **ML AN, Malonga F, Dramaix-Wilmet M, Donnen P.** Determinants of maternal health services utilization in urban settings of the Democratic Republic of Congo—a case study of Lubumbashi City. *BMC pregnancy and childbirth.* 2012 Dec;12(1):1-3.



<https://link.springer.com/article/10.1186/1471-2393-12-66>

26. **Ministry of Health and Social Welfare Tanzania.** The National MOH Strategic Plan to Accelerate Reduction of Maternal, Newborn and Child Death in Tanzania 2008-2015.[Online].Available from <http://www.tanzania.go.tz>

27. **Vyagusa DB, Mubyazi GM, Masatu M.** Involving traditional birth attendants in emergency obstetric care in Tanzania: policy implications of a study of their knowledge and practices in Kigoma Rural District. *International journal for equity in health.* 2013 Dec;12(1):1-4.

<https://link.springer.com/article/10.1186/1475-9276-12-83>

28. **Simfukwe ME.** Factors contributing to home delivery in Kongwa District, Dodoma-September 2008. *Dar Es Salaam Medical Students' Journal.* 2011;18(1):13-22.

<https://www.ajol.info/index.php/dmsj/article/download/71001/59980>

29. **Pfeiffer C, Mwaipopo R.** Delivering at home or in a health facility? health-seeking behavior of women and the role of traditional birth attendants in Tanzania. *BMC pregnancy and childbirth.* 2013 Dec;13(1):1-0.

<https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-13-55>

30. **Kayombo EJ, Uiso FC, Mahunnah RL.** Experience in healthcare utilization in seven administrative regions of Tanzania. *Journal of ethnobiology and ethnomedicine.* 2012 Dec;8(1):1-8.<https://ethnobiomed.biomedcentral.com/articles/10.1186/1746-4269-8-5>

31. **Ministry of Health report,** 2002, National Health Policy (2nd ed.). Dar es Salaam.

32. **WHO report,** Maternal mortality in 2005 (online) available from: [http://whqlibdoc.who.int/publications/2007/9789241596213\\_eng.pdf](http://whqlibdoc.who.int/publications/2007/9789241596213_eng.pdf)