Original Research Article

Exploring the factors influencing home delivery: a cross sectional study among rural residents in Tamale metropolis.

ABSTRACT

Introduction: Maternal and child mortality continues as a disturbing public health problem facing Ghana and other low and middle-income countries. As such there are advocacy for skilled birth delivery. Despite the advocacy, in most rural communities, unskilled delivery still persists. It is against this background that this study aims to explore the factors influencing home delivery among women in rural areas of Tamale Metropolis.

Method: The study employed the descriptive cross-sectional design with the mixed method approach. The study recruited 200 women within reproductive age of 18-49 who had delivered at least once in the selected rural communities in the Tamale Metropolis. Questionnaire and interview guide were used to collect data for this study. The data was analyzed using SPSS version 26 and manual thematic content analysis for quantitative and qualitative data respectively.

Results: The prevalence of home delivery was reported as (36.5%) among the respondents. More than quarter (35.5%) of the respondents rate their satisfaction of home delivery as good whereas more than half of the respondents rated TBAs' attitude as good. Three (3) qualitative respondents indicated that most women choose to deliver at home in neglect of hospital because of better satisfaction gained from delivering at home. The qualitative data showed that the factors identified to influence home delivery were as followed: negative attitude of health workers, lack of trust in health workers competence, unnecessary expenses from hospitals, distance, and poor quality of services. Nearly 90.0% of the respondents were enrolled on the NHIS with a proof of active NHIS card. Majority of the respondents were aware of the free maternal health services and all respondents agreed that they had a CHPS compound in their communities, however, only 36.5% responded in the affirmative that these CHPS compound are resourced adequately.

Conclusion: The study showed a substantive percentage of the respondents to be practicing home delivery with the support of unskilled birth attendants. Poor attitudes from health workers, better previous experience in delivering at home, unreliable means of transport to the hospital and additional informal delivery expenses were some of the factors found to be significant determinants of home delivery. It is recommended for the government and other stakeholders to provide rural ambulance services to aid in the transport of pregnant women in labor to the nearest health facility.

Keywords: Home delivery, rural, residents, factors

Introduction

Maternal and child mortality continues as a disturbing public health problem facing Ghana and other low and middle-income countries. The World Health Organization in the year 2017, estimated a global toll of maternal mortality to be 295,000, corresponding to a maternal mortality ratio of 211 deaths per 100,000 live births. In the same year, about 810 women were reported to have lost their lives from pregnancy-related causes every day [1]. Close to 86% of these maternal mortality cases occur in Sub-Saharan Africa and Asia with Sub-Saharan Africa accounting for two-thirds of the cases [1]. As of 2017, the maternal mortality ratio of Ghana was estimated at 308 deaths per 100,000 live births. Even though Ghana has achieved substantial progress by reducing its maternal mortality from 117 per 100, 000 live births in 2019 to 106 in 2020, Ghana MMR is still above the global target of achieving less than 70 deaths per 100, 000 live births as envisioned by the Sustainable Development Goal 3.1- reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030 [1,2].

Globally, the WHO has reported that about one in every five births (22%) take place without the help of a skilled birth attendant in 2015 alone. Additionally, the WHO reported in 2016 that the coverage of skilled birth attendance across regions ranges from 99% in Eastern Europe, Central Asia, and Western Europe to 52% in West and Central Africa. The World Bank has also emphasized the importance of skilled birth care in reducing maternal mortality, indicating all countries where skilled birth care attendance is higher than 80% have maternal mortality rate less than 200 per 100,000 live births. It was estimated that inadequate or no care at all during pregnancy, and delivery was largely responsible for the annual deaths of an estimated 303,000 mothers and 2.7 million new-borns in the first month of life in 2015, a huge figure that reflects the need for investments and high input in skilled birth care.

The majority of maternal deaths are as a result of causes such as labor complications, hemorrhage, and sepsis which could be prevented with access to quality health services [3]. Close to three-quarters of all the deaths related to maternal or perinatal occur during delivery and in the immediate postpartum period [4]. The World Health Organization (WHO) indicates that whereas women in high-income countries have a lifetime risk of dying from pregnancy-related causes is 1 in 3800, that of women in sub- Saharan Africa is 1 in 39 [5] .

Regrettably, many pregnant women in Ghana and other low and middle-income countries still deliver at home in neglect of the health facilities despite the health benefits of institutional-based delivery [6,8]. Home delivery according to Budu, [9] refers to the practice of pregnant women going into labor and delivering at their home or other people's homes. Whereas professionally trained birth attendants support the delivery of women in health facilities, women who deliver at home are mostly attended to by unskilled birth attendants and under unhygienic conditions [7,9]. Unskilled birth attendants are usually untrained individual such as traditional birth attendants, relatives or friends who assist in child delivery at home. Home delivery is argued to be an associated cause of maternal and child mortality and morbidity as a result of the unprofessionalism in the conduct of the deliveries [10].

In order to address the problem of maternal mortality globally, a number of policies and initiatives have been designed and implemented by international and national institutions to increase the number of institutional based deliveries which is proven to have low risk of maternal and newborn mortality [11]. Some of these initiative in Ghana include the introduction of Community-based Health Planning and Services (CHPS) in rural settings and introduction of the National Health Insurance Scheme policy in 2005, which offers free health care services to the expecting mother from pregnancy to birth and the baby for three months after birth[12,13].

Though these initiatives have contributed to the reduction of home delivery from 45% in 2007 to 20% in 2017, a lot more pregnant women continues to deliver at home especially in the Northern and Upper East regions where more than 63% and 35% women delivered at home respectively [14].

It is therefore necessary to explore and understand the factors that influence home deliveries among women in the context of the free maternal health policy to help develop a tailored interventions targeted at reducing maternal mortality in local communities and the country at large. In response to this, a number of studies have been conducted in the country and showed educational background of women, distance to health facility, valid health insurance, place of residence among others to be factors influencing home deliveries [7,15,16]. However, most of these studies conducted has its focus in the Southern regions of the country and on personal and health facilities factors that influence home delivery. There is paucity of information on the factors that influence home delivery among women in the Northern region despite the fact that it is among the regions in the country with high prevalence of home delivery. The extent to which women still chooses to deliver at home even in the presence of the free maternal health policy is minimally explored. This study therefore seeks to explore the factors influencing home delivery among women in rural areas of Tamale Metropolis.

METHODOLOGY

Study Area

The study was conducted in some selected Communities of the Sagnerigu Municipal in the Northern Region of Ghana. The communities were Dungu, Datoyili, Yilonayili and Sheshigu which are not very far from the center of Tamale township. The Sagnarigu Municipality has 79 communities, comprising of 20 urban, 6 peri-urban, and 53 rural areas.

The Sagnarigu Municipal covers a total land size of 200.4km² and shares boundaries with the Savelugu-Nanton Municipality to the north, Tamale Metropolis to the south and east, Tolon District to the west and Kumbungu District to the north-west. Geographically, the district lies between latitudes 9º16’ and 9º 34’ North and longitudes 0º 36’ and 0º 57’ West.

Dagomba is the main ethnic group in the Municipality. Other ethnic groups are Gonja, Mamprusi, Akan, Dagaaba from the Northern Region and other parts of Ghana.

The total population of the Sagnarigu Municipality is 148,099 with males constituting 50.6% (74,886) and females 49.4% (73,213) with women within the age of 15 – 49 years in the municipality being 38,548. The Municipality has a very young population, where 48.8% of the population falls between ages 0-19 years. The aged (65+), constitute only 4.1% of the total population in the municipality.

The main economic activity of majority of the people in the municipality is Agriculture. The people are largely engaged in both crop and animal farming. The main crops cultivated by farmers in the municipality are yam, millet, maize, cassava, groundnuts, cowpea, and soya beans among others.

Study Design

The study employed descriptive cross-sectional study design with the mixed method approach. The cross-sectional study assesses information about the status of a phenomenon in a population at a specific point in time and describe the status in the present [17]. The main advantage of cross-sectional design is that they are economical and easy to manage.

Study Population

The targeted population for the study were women within reproductive age of 18-49 who had delivered at least once.

Inclusion and Exclusion Criteria

The study includes women who were within the age of 18-49 and have had delivered either a year before the study year or presently, who reside in rural areas of the Sagnarigu Municipality and have accepted to voluntarily participate in the study. The study excludes women who have not given birth before the period of the data collection for this study. Also, women who fall within the reproductive age bracket of 18-49 but do not reside in the study area and those who refuse to participate in this study voluntarily were exempted from it.

Sample Size

The study recruited 200 respondents to participant. Given that the study population was limited to those who have given birth, this sample size was considered to be adequate. Nine (9) people were recruited for the qualitative data. The nine (9) respondents were obtained after saturation point was reached. Thus, after the nineth respondents, all the other person recruited did not add any further information to the study.

Sampling Method and Techniques

Purposive sampling was specifically used to select the study participants for the qualitative data. This sampling method was adapted because the researchers' selected respondents, and contexts based on who can give the most and the best information about the research topic and objectives. For the quantitative data, simple random sampling was used to select the respondents.

Data Collection Tools and Procedures

The study used in depth interview guide and structured questionnaire as instrument in the data collection. Both the in-depth interview guide and the questionnaires were structured into four sections with each section addressing the respective objectives of the study. The first section of the data collection tools centered on socio demographic characteristics of the participants. The content of the section entails marital status of participants, gender, occupation, and income level among others. The second section was also centered on identifying factors that influence home delivery among women in the study area and the third part focused on health system contributions to home delivery among women in the study setting. The final section was framed on identifying preventive measures that have been put in place to reduce home delivery among women in the study area.

The data collection was done in rural communities in the Sagnarigu Municipality. Before the data collection commenced, an introduction letter was sought from the Department of Midwifery and women's health and used as an official document to meet the chiefs of the selected communities and explained the purpose of the research and to further seek permission to proceed with the data collection. After permission was granted to proceed with the data collection, the group started entering the houses to identify individuals who met the inclusion criteria of the study. The purpose of the study was explained to participants and their consent were then sought to proceed. In the engagement process, a recorder was used to record the

response of participants who were interviewed using the interview guide. The questionnaire was also administered to the participants through a face-to-face approach. The questionnaire was read, interpreted and explained to those who could not read before eliciting for their response. The same procedure was repeated throughout the data collection process. The research team used three (3) weeks for the data collection.

Piloting and Pretesting

The questionnaire was pretested in Lamashegu among 20 women who had delivered at home within the last two years. Also, the in-depth interview guide was also pretested using 3 participants in the same location. The pretesting was done to enable the researcher to conclude on relevance of questions, how comprehensive it was and mutually exclusive nature of it in the view of respondents before administrating it to the targeted population. There was a 100% questionnaire return rate and respondents faced no challenges in responding to the questions.

Validity and Reliability

To ensure validity of the study, clear and realistic objectives were set, well organized literature review compiled, and the items of the questionnaire and interview guide reflected on the objectives in as much as it will be understood to be answered by the respondents. The data collection instrument was also pretested to ensure clarity of questions and to rule out ambiguous questions. The questionnaire and interview guide were reviewed by the research supervisor to ensure its validity and reliability.

Data Analysis

For the quantitative, the questionnaires after being retrieved were checked for completeness, scored, coded, and entered into Microsoft Excel. This was further exported to the Statistical Package for Social Sciences (SPSS) version 26 for analysis. Descriptive analysis was used to analyze the data and the results presented in frequency tables and graphical presentations. For the qualitative data, the recordings were transcribed verbatim and categories into themes for analysis. The transcribed data were analyzed using thematic analysis technique as suggested by [18].

RESULTS

Socio-Demographic Characteristics of Respondents

Most of the respondents (38%) were between the ages of 33 and 37. Majority of respondents (68.5%) were Muslims, 85.0% were married. In terms of respondents' educational backgrounds, the study discovered that most of the respondents (48.5%) had basic level of education and more than half (66.0%) of the respondents were self-employed. Table 1 shows the socio demographic characteristics of the respondents.

Table 1: ***Socio-Demographic Characteristics of Respondents***

Characteristics	Categories	Frequency (%)
Age (Years)		
	18-22	15(7.5)
	23-27	31(15.5)
	28-32	52(26)
	33-37	76(38)
	38-42	26(13)
Religious Affiliation		
	Christian	55(27.5)
	Muslim	137(68.5)
	Traditionalist	8(4)
Marital Status		
	Single	11(5.5)
	Married	170(85)
	Divorced	3(1.5)
	Widowed	16(8)
Educational Level		
	Non-educated	68(34)
	Basic	97(48.5)
	Secondary	30(15)
	Tertiary	5(2.5)
Occupation		
	Farming	47(23.5)
	Self-employed	132(66)
	Civil Service employee	21(10.5)

Prevalence of Home Delivery Among Respondents

The minority of the respondents (36.5%) delivered their most recent baby prior to the study at home whereas 63.5% were reported to have delivered in health facilities (Figure 1).

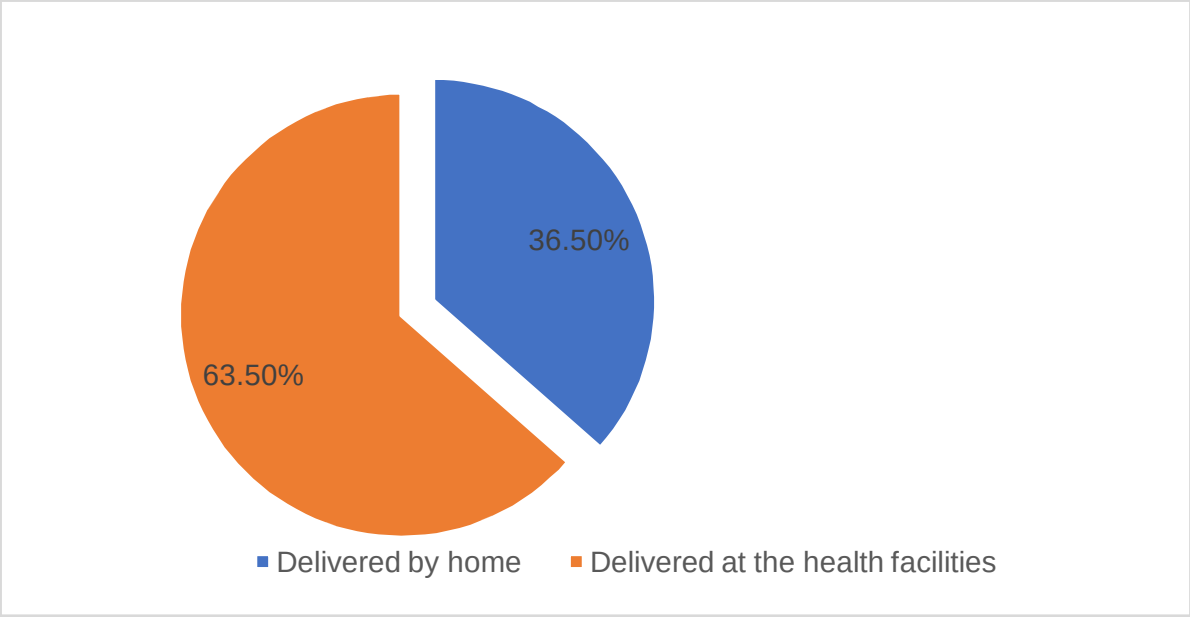

Figure 1: ***Prevalence of home delivery***

Factors Influencing Home Delivery Among Respondents

More than quarter (35.5%) of the respondents rate their satisfaction of home delivery as good. In terms of the level of comfort associated with home delivery, 35.0% of the respondents said it was satisfactory.

Three (3) respondents indicated that most women choose to deliver at home in neglect of hospital because of better satisfaction gained from delivering at home. This was further confirmed in the responses that were collected from the qualitative aspect of the study as captured in the excerpts below:

> "…*When I was going to deliver my second born in the house, I was not feeling sad like when I had my firstborn in the hospital because this time it was my home. The TBA was encouraging me to push and wasn't angry at me. I felt I delivered very fast and well in the home than in the hospital…"* (Respondent 4)

More than half of the respondents (54.0%) rated TBAs' attitude as good. The findings of the qualitative study also noted that four (4) interviewees mentioned how good the traditional birth attendants who assisted in their delivery were compared to trained birth attendants in the hospital. One of the interviewees explained that:

> "…*The TBA who helped me deliver my babies has been very good and doesn't say harsh words to me when I am to give birth. They are experienced and know how painful birth is, so you won't hear them saying harsh words to you like some midwives will do in the hospital…*" (Respondents 3)

Another respondent shared that the TBAs are very compassionate and play with them during the delivery process. She explained that:

"*At some point, I was so much in pain and crying and the TBA encouraged me to be strong and push. When the baby came out, she cracked a joke and everyone around was laughing including myself…*" (Respondent 2)

Table *2*:*Factors Influencing Home Delivery Among Respondents*

Variables	Frequency (N)	Percentage (%)
Satisfaction with home delivery		
Poor	37	18.5
Satisfactory	74	37
Good	71	35.5
Very good	18	9
Comfort with home delivery		
Poor	27	13.5
Satisfactory	70	35
Good	67	33.5
Very good	36	18
Attitude of TBA		
Poor	20	10
Satisfactory	45	22.5
Good	108	54
Very good	27	13.5

Health System Factors Contributing to Home Delivery Among Respondents

From the qualitative aspect of the study, five health systems factors were noted to be influencing home delivery among women in the study area. Most of the factors identified were related to attitude of health workers, lack of trust in health workers competence, unnecessary expenses from hospitals, distance, and poor quality of services.

Poor attitude of health workers: From the results of the qualitative study, most of the interviewees indicated they gave birth at home because of poor attitude from health workers during their previous delivery at hospital. Some of the respondents expressed ever being insulted by nurses when they were to deliver and others mentioned harsh words from nurses and midwives. As a result of these experiences with health workers, most of these women preferred to deliver at home where they will be well respected by their relatives and the traditional birth attendants. Some of the experiences shared is captured in the excerpts below:

"…*Whilst I was in the ward, the baby was coming out and I informed the nurses and they thought I was lying and didn't attend to me. I pushed one of the nurses and enter the delivery room and explained to different nurse who asked me to lie down and when I laid down and started pushing the baby started coming out..." (Respondent 9,)*

"…I went to hospital Zogbeli Hospital to deliver one time and the midwives said the place was full meanwhile I was in pains. We tried to beg them for space and they were not listening and asked that we go to TTH. I proceeded to TTH and the nurses there were compassionate…" (Respondent 3)

Lack of trust in health workers competence: Another factor that was found in relation to health system to be contributing to home delivery was lack of trust in the competence of health workers at the CHPS compound. Despite the presence of a health facility in the community, most of the interviewees prefer delivering at home to the health facility because they believe the health workers at the facility are not skillful. One of the respondents said:

"…*The nurses in the hospital here don't have the knowledge, so when you go there to deliver, they will use you for practice*…" (Respondent 2).

Another patient also shared that she visited the hospital one time for ANC and the health workers didn't examine her well because they were students. Because of that experience she decided not to go to the health facility again.

"… *I went for check up one day and students were those who attended to me. From how they examine me, I could tell they didn't know the work because my previous ones were not like that. After that day, I never went to the hospital to get examine again and when it's time for delivery, I deliver at home…*" (Respondent 4)

Unreliable means of transport: Observed in the qualitative findings were that some of the interviewees expressed their interest in delivering at the hospital but as a result of no means to get to the hospital, the ended up delivering at home. Although the respondents confirm of a health facility situated in their community, they preferred going to either Tamale West Hospital, TTH which is far from the community. A respondent explained that:

"…*Most of the time my labour starts in the night after we have finished eating supper. At this time, it usually difficult to get a taxi or 'yellow yellow'-tricycle to take you to the hospital. When it happens that way, we quickly call the TBA to come conduct the delivery…*" (Respondent 5)

Another respondent explained that the readily available means of transport for them is motorbike however it is very discomforting to sit on a bike and be sent to the hospital when you are to deliver. She said:

"…In *my last birth, I was there and at once I started feeling the pains and felt I was about to deliver. I called my husband and he wanted to take me on motorbike to the hospital but the pain was so much that I couldn't sat on it. I ended up delivering at home even though I wanted to deliver in the hospital…*" (Respondent 7)

Inadequate antenatal care visits: In the qualitative study, another health system factor that was identified to be contributing to home delivery among women in study area was low ANC attendance. Antenatal Care serves as platform for pregnant women to assess their health and

wellbeing as well as track the expected day of delivery. However, most of the interviewees were found saying the delivered at home because they didn't know their expected day of delivery. This is confirmed in the excepts below:

> "…. *I usually experience labour pains late at night and if I plan to go to the hospital when day breaks, I will end up delivering before the next morning. And this is because I do not know exactly when I am supposed to deliver…*" (Respondent 1)

Another woman said she usually delivers unexpected which is why she had all her previous delivery at home. She said:

> "…*My birth is easy and comes unexpected. I would be working in the house and all of sudden I will start feeling birth pains. Within short period, I will deliver in the house without difficulty…"* (Respondent 10)

Preventive Measures Against Home Delivery Among Respondents

This survey reveals that majority of the respondents (89.4%) were enrolled on the NHIS with a proof of an active NHIS card. Majority of the respondents were aware of the free maternal health services and all respondents agreed that they had a CHPS compound in their communities. On the question of whether the CHIPS compound available in the community is well-resourced to provide the services they need, only 36.5% responded in the affirmative. Table 3 below presents findings on the measures that can help prevent or reduce home deliveries among the study participants.

Table 3:*Measures to Prevent Home Delivery Among Respondents*

Variables	Frequency (%)
An active NHIS card holder	
Yes	178(89.4)
No	22(11)
Awareness of the free access to healthcare policy for pregnant women with NHIS	
Yes	125(62.5)
No	75(37.5)
Availability of CHIPS compound in your community	
Yes	200(100)
No	0(0)
Resourcefulness of CHIPS compound to deliver maternal healthcare services	
Yes	73(36.5)

The qualitative study also explores the preventive measures that are put in place to prevent the prevalent of home delivery among women in the study setting. The government of Ghana in an effort to curb the issue of home delivery has developed and implemented policies to make healthcare access easy and free for pregnant women in the country. This section of the study was therefore focused on exploring the effectiveness of the interventions in the study area. The major interventions that were explored were the National Health Insurance Scheme policy and the Community Health and Planning Services.

Community Based Health Planning Services: The findings of the qualitative study corroborated the qualitative findings that there are CHPS compounds situated in the study areas. Almost all the interviewees responded affirmatively that there are CHPS compounds in the communities however, they noted that the facilities are incapacitated for which reason they barely patronize their services. Some of the reasons that was given to have incapacitated the CHPS compounds included inadequate skill personnel, unavailability of 24-hour services, inadequate resources among others.

A woman in her late thirties explained that she delivers at home even though she knows there's CHPS compound in the community because of unavailability of 24-hour services. The CHPS compound was reported to be closing very early in the afternoon, hence when someone is in labour, they can't go there to deliver. She said:

> "…*The community hospital does not work in night, so when I am in labour in night and want to deliver, I can't go there. I will be forced to deliver at home…*" (Respondent 2)

Another disturbing finding on the operation of the CHPS compound in the communities were the lack of skilled personnel in the health facility. According to the interviewees, they are reluctant in seeking maternal healthcare from the CHPS compounds because they have a bad perception of the skills of the health workers in the facilities. One of the respondents explained that she does not believe the nurses at the CHPS compound can perform good delivery and even if they can, she doubts the facility had the resources to manage complications from delivery.

> "…*We have a hospital in the community but we don't go there for delivery. The reason is that the hospital does not look good and to me, I don't think the midwives there can deliver a baby well. The hospital cannot do caesarean section if the need arises…*" (Respondent 10)

Inadequate knowledge of the services of the CHPS compounds was another issue found to hamper the effectiveness of the CHPS intervention in the communities. Even though most of the interviewees registered their knowledge of the presence of the CHPS compound in the community, few were aware that the CHPS compound could provide services such as antenatal care and child delivery. As a result of this, they do not go to the CHPS compound to seek healthcare when they are pregnant or to deliver. A woman explained:

> "…*We usually go to Maligunaayili or Tamale West Hospital for examination and delivery when we are pregnant. I have never gone to the CHPS compound in this community because I don't know they also do the examination and delivery*…" (Respondent 1)

National Health Insurance Scheme: From the qualitative study, it was found that almost all the interviewees were on the health insurance scheme policy. However, the status of NHIS card for some of them were expired and others were active. The researchers explore to identify if the

interviewees are aware of the free maternal health care policy of the NHIS and how often they rely on it. It was impressive to note that most of the women registered knowledge of the free maternal health policy, nonetheless, they lamented that it is not helping much as they expected.

A woman who was in her early forties explained that the health insurance does not cover all the expenses at the hospital at the time of delivery. According to her explanation, some expenses are still demanded from women when they are to deliver in the hospital, and because of this, they prefer to deliver at home where they wouldn't have to pay. She explained that:

> "…*When you go to the hospital to deliver, the nurses and midwives will ask you to pay small money for things like rubber, soap, and Dettol. These monies that you will be paying look small but when you finish paying all, you will realize it's big money. They will not even use the soap to bathe the baby…." (Respondent 6)*

Another one explained that the health insurance does not cover cesarean section because according to her, she paid so much for her CS even though she was using NHIS card.

> *"…My husband was asked to pay a lot of money when I was going to deliver my second born through cesarean section. He told them that I was using NHIS and the health workers said, those payments are not covered by the policy scheme. We ended up paying about 500 cedis for the surgery. So, for us, we do not see the use of the NHIS…" (Respondent 3)*

Discussions

The study revealed that 36.5% of the women in this study delivered at home in their most recent delivery. This finding is consistent with the findings of a study conducted by Ganle et al., [19] at Garu-Tempane District in the Upper East region, where 68% of the women utilized skilled delivery services and only 32% used the services of Traditional Birth Attendants (TBAs). The current study contradicted the high prevalence rate observed in a study conducted in Zala Woreda, southern Ethiopia Bedilu [20] where 77% of the women reported delivering at home in their most recent delivery and in Akure, Nigeria, where 81.8% of women had their most recent delivery at home Adejumo et al.,[21]. The similarities could be associated with the similar policy on maternal health services. The difference in the findings of the previous studies and that of the current study could be associated with the difference in setting and availability of resources as well as the individual characteristics of the respondents.

In effort to explore the factors that influence home delivery among women, previous experience in delivering at home was found to be an influencing factor. Most of the participants shared to have had a better experience in delivering at home and for that matter they were more likely to deliver at home than hospital. Mothers in this study were comfortable giving birth at home under the care of TBAs, and the majority of them rated the attitudes of the TBAs very high. The majority of women in this study were above the age of 30 years, which mean they probably would have had prior delivery experience. The fact that mothers rated the attitudes of TBAs higher than Nurses/Midwives indicates that they have experienced both facility-based and home deliveries in the past, and were more comfortable with home delivery than delivering at the hospital. Generally, older women perceive home delivery as not risky as they may have had previous safe home deliveries before.

On the other hand, younger women giving birth for the first time will see home delivery as a high risk, and would patronize skilled delivery services at the hospital as opposed delivering under the care of traditional birth attendants. In typical villages of Northern Ghana, traditional beliefs

still exist amongst older women than the younger ones. Gangtaba et al., [22] in their study observed that older women have a strong belief that delivering in a health facility is not part of the ancestral customs. This finding agrees with studies conducted in rural Northern Ghana by Boah, Mahama & Ayamga [23], which revealed that older pregnant women age ≥ 30 years were more likely to give birth at home. Another qualitative study by Mahama [6] on the factors influencing home delivery among women in Tolon and Tamale observed some of the mothers chose home delivery due to societal norms that frowned upon facility-based delivery. This was succinctly captured in the response of one respondent from Tamale who said "*Some of us are made to deliver at home because the society tags women who go to the hospital to deliver as weak. So, when I was in labour, I was made to labour from Wednesday to Friday and when they realized it was a difficult labour, they then took me to the hospital. Most of us decide to deliver at home because we want to be seen to be strong. During labour the family advises you to try your possible best to deliver at home since delivering is a physiological process and with tenacity, you can easily overcome*". Some of these barriers to access to supervised deliveries in rural areas can be addressed by creating awareness on negative beliefs and traditions that may influence maternal health.

The mothers were generally dissatisfied with the attitudes of health workers displayed towards them from their experiences with previous deliveries at the hospital. This indicates that the attitude of health workers towards the women had an influence on their choice of place of delivery. Mothers who felt Nurses and Midwives treat them with disdain and disrespect might decide to deliver at home under the care of relatives and TBAs they know, instead of delivering at the hospital, clinic or CHPS compound under the care of skilled birth attendants like Midwives. This finding agrees with Gangtabaet al., [22] who asserted that women's opinion on satisfaction with their previous place of delivery was significant with health facility delivery (AOR=1.81), but the mothers were still dissatisfied with the attitude of health workers towards them, as majority described the attitude of health staff as "disrespectful". This finding also corroborates the findings of a study conducted in Uganda, where women who rated health workers attitudes as poor had 5.4 times increased odds of home delivery Geleto, Chojenta & Musa., [24]. This would also imply that healthcare providers should receive ongoing training in client-centered communication and service delivery, in addition to better health workforce planning to reduce workload for healthcare providers and overcrowding in ANC clinics and maternity wards [25].

Distance was not found to influence home delivery among the women in this study. So, distance of the health facility was not a discouraging factor that influenced their decision to deliver at home. However, in a related study by Ganle et al., [19] involving women at Garu-Tempane in the Upper East region, distance was shown to be a predictor of utilization of supervised delivery services (OR=0.1.971, CI= 1.138–3.415). Similarly, a study by Johnson et al. [13] also contradict the findings of the current study with its finding that skilled delivery were recorded high in communities where the CHPS compound was closer. The difference in these observations could be associated to the fact that few people in the present study were aware of the CHPS compound in the communities that provide maternal healthcare and delivery services.

The issue of transportation was also found to be a contributing health factor to home delivery in the qualitative stories. The study found respondents reporting their inability to go to the hospital for delivery because there was no means to get them transported to the health facilities in events, they start to experience labour in the night. The women lamented that there was no ambulance that could send them to hospital in the night when they are in labour. This finding was similar to other studies including Boah et al. [26] which documented lack of and cost of transportation to be an impeding factor to women delivering in health facilities. Mrisho et al., [27] in their study also found a result consistent with the current study, where they reported that birth

could occur at any time and due to the absence of means of transport, most women in their study resorted to delivering at home. Even though, participants in the current study mentioned of using 'yellow – yellow' (a tricycle) in certain instances, they also complained of its unavailability in late hours in the night. Institutional delivery could be improved if measures are put to provide a local ambulance to transport pregnant mothers to health facility for delivery.

Another impeding factor to the smoothness of the CHPS compound intervention was according to the respondents was that, the facility has not been adequately resourced in both human and material to meet the health needs of the community. This finding was similar to that of Khatri et al., [28] which reported inadequate resources to be a barrier to institutional child delivery. Corroborating the current study finding is the report of Ghana MAF and Country Action Plan which identified low resources in CHPS to be associated to reduced skilled child delivery in marginalized communities [29]. This could be resolved by increasing resource allocation to boost supply of essential consumables, expanding the human resource base.

On the part of government interventions to reduce or prevent home delivery, majority of women who were engaged in the study were enrolled on the National Health Insurance Scheme (NHIS), and had active NHIS cards which they were using to access maternal health services. For this reason, many of them who were engaged in the quantitative study admitted they paid no monies themselves for delivery services at the hospitals. This explains why cost of maternal services was found not to be significantly associated with the practice of home delivery among respondents (X^2=2.136, p=.344). The National Health Insurance Scheme is supposed to play a significant role in the used of supervised delivery services with its free maternal health services. In spite of this, the current study has shown that not even the free maternal healthcare service component benefit for pregnant women enrolled on the NHIS, was enough to motivate the mothers to deliver at the hospital. Darega et al., [30] in their study in Ethiopia also found to their surprise that compared to other factors, the financial cost of receiving care is often not a major determinant of the decision to seek care. This suggests that costs deter poorer women from using delivery services for preventive purposes, while they play a lesser role in case of complications where the cost-benefit ratio is different.

In the qualitative study, some of the interviewees expressed that they are still charged for cost related to child delivery even though they are registered on the NHIS. As a result of these charges, the women feel reluctant to go for delivery at the health facilities and rather deliver at home. Evidence from other studies have shown that women continue to pay other informal fees in many places Dzakpasu et al., [31]. When a woman is not registered on the NHIS, the situation becomes even worse. Fears that supervised delivery will incur additional costs among women who are not registered on the NHIS may explain why such women are less likely to use supervised delivery services. As they are not registered on the NHIS, such women may have had less contact with the healthcare system in comparison to other more general healthcare. This would imply a need to encourage NHIS registration, as well as strengthen and ensure effective coverage of the free delivery policy, especially in rural areas.

Conclusion

Even though the government of Ghana has put in measures to increase institutional birth delivery among women in the country, the study showed that, a substantive percentage of the respondents are still practicing home delivery with the support of unskilled birth attendants. Poor attitudes from health workers, better previous experience in delivering at home, unreliable means of transport to the hospital and additional informal delivery expenses were some of the factors found to be significant determinants of home delivery. The study affirms the presence of a functioning CHPS compounds in the communities, however the presence could not influence an uptake of institutional birth delivery due to reasons such as women not being aware of the

services rendered by the health facility. Thus, the availability of the maternal health services alone does not necessitate utilization.

Recommendation

Awareness creation programs can also be put in place to educate the public on the services that are rendered by the CHPS compound in the rural communities. This will help increase the possibility of health facility delivery in the communities as this study found a link between inadequate knowledge on the services of CHPS compound and the choice of home delivery. It is recommended for the government and other stakeholders to provide rural ambulance services to aid in the transport of pregnant women in labor to the nearest health facility. In service training should be organized for health workers on therapeutic communication to curb misunderstanding between patients and their care providers. It is also recommended for future research to be conducted on the topic area in more communities in the Northern region using qualitative studies.

Ethical Approval and Consent

In fulfillment of ethical requirement, an introductory letter was obtained from the Department of Midwifery and Women's Health of the School of Nursing and Midwifery–University for Development Studies which was presented to the District Authorities and opinion leaders in the communities in seeking for permission to conduct the study. An ethical approval was obtained from the University for Development Studies Institutional Review Board (UDSIRB) with certification number UDS/RB/083/22 for this study. Consent was sought from individual respondents too. At any point during data collection, we introduced ourselves and explained the objective of the study to respondents before data was collected. Information collected were treated with strict confidentiality. The respondents were not required to write or mention their names to guarantee anonymity and all respondents were assured that the aim of the study was for academic purpose.

Data Availability

The data used to support this study are available from the corresponding author upon request.

Conflicts of Interest

Authors have declared that no competing interests exist.

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Authors' Contributions

Conceptualization: A.-S.M., E.T., R.A.A., and C.A; Data collection: A.-S.M., E.T., R.A.A., and C.A; Data curative: F.K.C., A.A.A., E.T., R.A.A., and C.A.; Formal analysis: A.-S.M., F.K.C., and A.A.A.; Project supervision and contributed to writing the manuscript: A.-S.M., V.N.Y., and F.K.C.; Original draft: A.-S.M., V.N.Y., and A.A.A.; Review and editing: V.N.Y., F.K.C., and A.A.A. All authors proofread and approved the final version of the manuscript.

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