Diversities in the Place of Delivery Choice: A study among expectant Mothers in Ghana

Mahama Ibrahim Baba

Tamale Teaching Hospital

Kofi Adesi Kyei (✉ kakyei@ug.edu.gh)

University of Ghana <https://orcid.org/0000-0003-3485-5368>

Justina Baaba Kyei

Ghana Health Service

Joseph Daniels

Korle Bu Teaching Hospital

Isaac Justice Kobina Biney

Britannia Medical Center, Accra

John Oswald

Walden University

Patrick Tschida

Walden University

Michael Brunet

Walden University

Research Article

Keywords: Delivery, expectant mothers, childbirth, culture

Posted Date: April 18th, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1064138/v2>

License: This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background: In this study, the factors that influence the choice of place of delivery among expectant mothers in both rural and urban settings in the northern part of Ghana were identified and compared using the conceptual framework provided by Thaddeus and Maine.

Methods: A mixed-method study was used to examine expectant mothers and their responses related to factors that affect their choice of place of delivery through a concurrent triangulation using health professional interviews and a detailed participant survey. The sample consisted of 552 expectant mothers between the ages of 15 and 49 years. Individual interviews were held with 8 health professionals and a focus group discussion with randomly selected pregnant women and lactating mothers. Themes were generated through open coding of the interview data, while multiple regression was performed to identify the factors associated with choice of place of delivery, rural area.

Results: Preference (60.1%) was for home delivery compared to 20.7% for urban participants.

Statistically significant variables affecting the choice of place of delivery among study participants were found to be educational background, the experience of previous deliveries, the attitude of hospital staff toward pregnant women during labor, and frequency of accessing antenatal care

Conclusion: The study's implications may lead to positive change where stakeholders develop and implement policies to promote health facility delivery for expectant mothers in Ghana.

Background

In Ghana, the place of delivery had a direct effect on the maternal mortality rate. The chances of mothers surviving childbirth may either increase or decrease depending on where they deliver their babies. The World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA), and World Bank [1] have defined maternal mortality as deaths happening among pregnant women or women within 42 days of termination of a pregnancy. This usually does not depend on duration and site of the pregnancy; it could also be a cause related to the pregnancy or a complication of the pregnancy or its management, but not due to accidental or incidental cause. Indicators for maternal mortality have remained relatively high for much of sub-Saharan African countries, including Ghana [2]. In a 2014 report sponsored by WHO, UNICEF, UNFPA, World Bank, and United Nations Development Programme (UNDP), the maternal mortality rate in Ghana was estimated at 380 deaths per 100,000 live births, whereas the 2015 Millennium Development Goals (MDG) 5 target was 185 deaths per every 100,000 live births. Maternal health care provision remains a major challenge in developing countries [3].

WHO, UNICEF, UNFPA, World Bank, and UNDP [4] (2012) reported that the reduction of maternal mortality was a high priority area for the government of Ghana, as well as other developing countries; this shows the importance the government of Ghana attached to this problem. The warning signs had already

indicated that Ghana was behind schedule on MDG 5, as acknowledged by a report from Ministry of Health (MOH), Ghana Health Service (GHS), and UNDP [5]. Shah et al. [6] reiterated that institutional delivery improves outcomes for expectant mothers as it reduces the risk of maternal mortality. Der et al. [7] asserted that delivery in a health facility reduces maternal mortality, and emergency obstetric care remains as one of the major ways to cut down the maternal mortality rate. Birmeta et al. [8] also argued that the main cause of high rates of maternal deaths is the lack of access to health services during pregnancy and at delivery, and this problem is more pronounced in developing countries than in developed ones, which may help explain the disparity. The place of delivery may help determine the survival rate of women who deliver either in a health institution or at home. Individual factors like maternal age, parity, education, and marital status help determine the place of delivery. Conditions that also determine the place of delivery include household factors like family size and household wealth. The community where a person resides, their socioeconomic status, the community's health infrastructure, and the region could also affect a decision to deliver at home or at a health institution.

Over the past 5 years, the northern region of Ghana has been the only region with coverage below 50%, that is, the health facilities attended by less than 50% of pregnant women according to a Multi-Indicator Survey [9]. According to Ghana Demographic and Health Survey (GDHS) [10], among 480 women who had a live birth in the five preceding years, 92% received antenatal care (ANC) from a skilled provider in the northern region; this was the lowest among all 10 regions in Ghana. Only 73% of women in the northern region had more than four ANC visits. Out of a total of 709 live births surveyed in the northern region, only 36.4% of deliveries were by a skilled provider, this was the lowest figure among all ten regions of Ghana.

In the Northern Region of Ghana maternal deaths increased from 88 deaths in 2010 to 130 in [11]; this increase is attributable to sociocultural practices and is a major obstacle to attaining the country's MDGs. Other factors, such as inadequate health care facilities, equipment, personnel, infrastructure, and gross ignorance, play a significant role [12]. In Ghana, three quarters of all maternal deaths occur during birth and the immediate postpartum period, but skilled birth attendance remains low and a significant equity gap exists between urban and rural settlements [13]. This study sought to investigate factors that influence place of delivery choice among expectant mothers in rural and urban settings of northern Ghana.

Methods

A mixed-method paradigm, with a predominant focus on quantitative data was used. The qualitative data were from interviews with selected health workers and a focus group discussion with randomly selected pregnant women and lactating mothers, ages 15–49 years, who volunteered. The interview guide developed for this study is provided as Additional File 1. The quantitative data comprised a two-stage sampling technique using a structured questionnaire to find out the reasons behind the place of delivery choice of the expectant mothers. The quantitative research questions sought to identify the relationship between independent and dependent variables among expectant mothers at the study site. The focus

group discussion was used to explore significant quantitative results by probing aspects of the factors influencing the women's place of delivery choice in rural (Tolon District) and urban (Tamale) settings in northern Ghana. A conceptual framework by Thaddeus and Maine [14] allowed the researchers to investigate the factors that hinder skilled delivery, and explain why expectant mothers may or may not seek skilled care at childbirth. Four thematic areas of the framework were the sociocultural and economic factors, accessibility to health facilities, care environment and resources, and availability of skilled attendants.

The interviews were with some selected health workers in close collaboration with expectant mothers such as the community health nurses, midwives, and general nurses. Randomly selected participants from a group of volunteer women, expectant mothers and women with children, for a focus group discussion were also included. The quantitative data were however from a representative survey with a questionnaire using a sample size of 552, which is 276 each from the rural and urban settings of the study site. The women were selected based on a two-stage sampling technique. The first phase looked at households selected out of clusters/blocks of individuals while the second phase were individual participants from the households/blocks who responded to items on the survey questionnaire.

Data was collected using survey instruments that were a modified version adopted from GDHS, [15]. Participant demographics, such as marital status, socioeconomic status, age, and educational level were measured. Purposeful sampling was used to determine the health professionals from a pool of over 35 staff with a minimum of 5 years of working experience, under the reasoning that in 5 years, the health professional might have been in touch with clients who have provided reasons they chose to deliver at home or at health facilities. A random cluster selection was used for the quantitative aspect: first sampling cluster/blocks of households within the two selected districts (i.e., Tamale and Tolon District) and then selecting individual respondents from households who took part in the questionnaire-based survey. Eight participants for each of two focus discussion groups from the two districts based on the inclusion criteria were also selected. Qualitative data were information from participants (midwives, community health nurses, and general nurses) collected through interviews and a focus group discussion with expectant mothers from the two communities. The interviews took 15 minutes and the focus group discussions took 45–60 minutes.

The interview and focus group discussion data were analysed using the NVivo version 11 through transcribing, finding emerging themes, coding, and making connections to the research questions. The quantitative data were analyzed using Statistical Package for Social Sciences (SPSS) version 22 package. A univariate, bivariate, and multivariate analysis were performed. The bivariate analysis established an association between the variables collected. A cross tabulation and stepwise logistic regression were done to assess the predictors of skilled and some determinants of health facility delivery. Binary analysis (Pearson chi-square test) was performed to test the statistical significance of the association between the main predictors of skilled delivery using a significance level of <0.05 .

Ethical clearance was obtained from the Ethics Committee of Tamale teaching hospital, the Tamale Metropolitan Health Directorate as well as the Tolon District Health Directorate, and the final approval from the Walden University Institutional Review Board (10-02-18-0402836). This study has been performed in accordance with the ethical standards laid down in an appropriate version of the 2000 Declaration of Helsinki as well as the Declaration of Istanbul 2008. All persons gave their informed consent prior to their inclusion in the study. Particularly, written consent was obtained from parents for participants under 16years. Any details that sought to disclose the identity of the subjects under the study was omitted.

Results

The results were in two categories, the qualitative data quantitative.

Qualitative Data

Participants were mainly Midwives, Physician assistant, and a Clinical nurse. In all, 7/9 of these health professionals were women. All the participants had an average of 7 years working experience. Three themes such as Service Provided, Preferred place of delivery, and Factors accounting for Hospital delivery, were generated from the interview data.

Service Provided by Health Facility

Respondents were initially asked of the exact services they provide to pregnant women. The feedback from participants revealed that health personnel provide services such as scan, palpation, preparation of cases for emergency surgery and family planning. Participants were also found to undertake outreach programs to areas with limited access to health facilities on a regular basis.

Preferred Place of Delivery

Preferred place of delivery was a theme extensively discussed by participants. Feedback indicated that options available to pregnant mothers were delivery at a health facility or at home assisted by a traditional birth attendant. Most of the participants from the Tamale vehemently indicated that most pregnant women prefer to deliver at health facilities instead of delivering at home. However, a section of pregnant women especially in Tolon District according to the participants preferred home delivery to health facilities.

In order to unpack the variations among women for place of delivery, participants were asked their views on the factors accounting for preference for home delivery. The study identified a plethora of factors accounting for pregnant women preferring home delivery. It was observed that there was traditional notion that a woman's ability to deliver at home is a sign of strength and faithfulness to her husband. Again, participants indicated that some patient's belief in the maternal prowess of traditional birth attendants and behavior of hospital staff served as a disincentive to pregnant women to visit health facilities when in labor. Finally, economic and environmental factors, such as poverty and poor road

networks connecting communities to health centers, played a role in deciding the choice of place of delivery by pregnant women.

Factors Accounting for Hospital Delivery

Factors accounting for delivery of pregnant women's preference as discussed by the participants were

1. Education of pregnant women by health professionals (enlightenment),
2. Dangers associated with delivering at home,
3. Increase in approval rate of husbands to allow their wives to go labor at health facilities,
4. Success stories of past deliveries at health facilities and
5. Extent of inhumane treatment given at home during childbirth

Quantitative Data

In all, a total of 552 patients participated in the study with 523 respondents representing 94.7% of the entire study population being married and only 1.3% being single (Table 1). 94.7% of study respondents could identify a health facility within their locality (Table 2). Also, a test of correlation between the availability of midwives and the study districts was 0.01 which an indication there is a relationship between the locations of respondents. In all, 94.7% of study respondents could identify a health facility within their locality. However, the study also revealed that more respondents (99.3%) from Tamale answered in the affirmative of yes response. It was identified that whereas 95.1% of health facilities had equipment for delivery (Table 3). Concerning means of transport, responses were categorized into the vehicle, walking, tricycle/motor. Vehicle (57.6%) constituted the dominant mode of transportation for accessing health care delivery for pregnant women followed by motor/tricycle (21.4%). The locational variation also revealed that about 75.6% of respondents in Tamale employed vehicle as a mode of transportation, with a further 22.6% relying on motor/tricycle (Figure 1).

A 20.7% of respondents in Tamale preferred home delivery compared to 60.1% of respondents in Tolon District that indicated their readiness to deliver at home (Figure 2). A regression analysis was also performed (Table 4) to determine factors that were significant in affecting the choice of place of delivery among pregnant women within the study area. The study employed indicators such as respondent's education, the location of respondents, availability of health facility, minimum distance traveled in accessing health care, experience from previous deliveries, and the frequency of attending ANC and seeking of husband's consent. Variables whose p-value were smaller than 0.05 were considered to be significant factors influencing the choice of place of birth among pregnant women.

Discussion

Service Provided by Health Facility

The results indicated that health personnel in both locations provided similar services with slight variations in approach. Midwives were the most common providers for ANC and delivery care in both study areas, but the clinical nurse and physician assistant played greater roles in the rural area. Tran et al. [16] indicated that physician assistants provided ANC and delivery care for more than 25% in rural areas compared to 0.5% among urban women. ANC counseling among rural women was only given to one fourth of that for urban women [16]. Low household economic status in rural areas might be a barrier preventing women from obtaining expensive services for example laboratory tests [17].

Preferred Place of Delivery

Participants indicated that most pregnant women prefer to deliver at health facilities instead of delivering at home. A segment of pregnant women in Tolon District preferred home delivery (Figure 2). This may be due to unavailability of specialized skills and expertise in the rural area compared to urban. A woman's place of residence, whether rural or urban, could affect the place of delivery [18]. The findings in this study agree with a study by GDHS and Envuladu et al, [19] where most participants in a rural area preferred home delivery to delivering in a health facility.

Distribution of Place of Delivery

This result seems to indicate a higher preference by rural participants to deliver at home than at a health facility. These findings are consistent with the results of a study in some rural areas conducted by Ravi and Kulasekaran [20] in Tamil Nadu, India, where 69% of the study participants delivered at home. Similar findings were also observed by Tsinuel et al. [21] in a study conducted in Jimma Zone, Ethiopia, where 71% of the women delivered at home. Mukhtar et al. [22] found that 72.6% of women gave birth at home in the tribal areas of district Srinagar.

Availability of Health Facilities and Place of Delivery

The variation between the two districts in terms of the availability of health facility was not surprising because of most developmental projects in Ghana. The availability of health facility was not a statistically significant factor that affects the choice of place of delivery between the rural and urban area in this study. Though highly valued, virtues like support, care, and companionship were mostly missing in the experience of many women who delivered at health centers. Women who give birth at home did so because they were assured of these things when they delivered at home [23].

Distance and Place of Delivery

There was no statistically significant association between distance travel and choice of place of delivery. This was consistent with a study by Kifle et al., [24] where he indicated that distance to a health facility was not an influential factor to the choice of place of delivery among mothers living in rural communities of Eritrea. However, the findings of this study were contradictory to findings by Abdulmageed and Elnimeiri, [25] where the study noted that distance to a health facility was a significant factor to the choice of place of delivery among pregnant women.

Implication of Social Change

This study potentially provides information that can help shape the choices many women make because of how they perceive birth and the cultural traditions and taboos around it. This study has provided insight into the importance of individuals' previous experiences with pregnancy, and how that leads them to assess the risk associated with pregnancy. This study also potentially uncovered women's attitudes to danger link to childbirth and how they confront that or rationalize the way they deal with it, as well as the norms and values within certain traditions that inform people about the need and importance of exploring the use of maternal health facilities.

Conclusion

The choice for a place of delivery by pregnant women may differ among the rural and urban areas. Majority of rural women prefer home delivery to facility delivery compared to the low rate of home delivery by urban women. These may be due to several factors that may influence one choice of place of delivery. Significantly, the majority of the study participants at the rural area (Tolon District) opted for home delivery compared to the participants from the urban area (Tamale) indicated their readiness to deliver at home. With the high achievement of health facility delivery at the urban area and moderate achievement at the rural area, GHS should commend and design motivated packages to all skilled birth attendants to maintain the good work in the various health facilities across the country. Education on maternal health services should also be intensified to both women with or without formal education.

Abbreviations

The World Health Organization (WHO)

United Nations Children's Fund (UNICEF)

United Nations Population Fund (UNFPA)

United Nations Development Programme (UNDP)

Millennium Development Goals (MDG)

Ministry of Health (MOH)

Ghana Health Service (GHS)

Ghana Demographic and Health Survey (GDHS)

Antenatal Care (ANC)

Statistical Package for Social Sciences (SPSS)

Declarations

Ethics Approval and consent to participate

Ethical clearance was obtained from the Ethics Committee of Tamale teaching hospital, the Tamale Metropolitan Health Directorate as well as the Tolon District Health Directorate, and the final approval from the Walden University Institutional Review Board (10-02-18-0402836) before the commencement of data collection. Written consent was obtained from parents/guardian for participants under 16years old. All persons gave their informed consent prior to their inclusion in the study

Consent for publication

Not applicable

Availability of data and materials

Data was obtained from consented participants involved in the study

Competing interests

The authors declared that they have no competing interests and none have any conflict of interest to declare.

Funding

No funding was received for this study

Authors' Contributions

Author MIB and KAK designed the study, performed the statistical analysis, JD, PT, and MB wrote the protocol and wrote the first draft of the manuscript. MIB, JK, IJKB and JO helped to design the work, acquired and interpreted data. KAK and PT, helped in the revision for important intellectual content. All authors read and approved the final manuscript.

Acknowledgements

The authors of this article acknowledge with gratitude the support of all the members of staff from Tamale Teaching Hospital and Tolon District for their support in any kind during the study. Our deepest gratitude also goes to all the participants that consented to participate in the study.

References

1. WHO U, UNFPA WB. Trends in maternal mortality: 1990 to 2015. Geneva: World Health Organization; 2015.

2. 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;11(3).
3. Mahiti GR, Mkoka DA, Kiwara AD, Mbekenga CK, Hurtig AK, Goicolea I. Women's perceptions of antenatal, delivery, and postpartum services in rural Tanzania. *Global health action*. 2015 Dec 1;8(1):28567.
4. World Health Organization. Trend in maternal mortality: 1990 to 2010. WHO, UNICEF, UNFPA and The World Bank estimates; 2012.
5. World Health Organization. Universal access to reproductive health: accelerated actions to enhance progress on Millennium Development Goal 5 through advancing Target 5B. World Health Organization; 2011.
6. Shah R, Rehfuess EA, Maskey MK, Fischer R, Bhandari PB, Delius M. (2015). Factors affecting institutional delivery in rural Chitwan district of Nepal: a community-based cross-sectional study. **BMC Pregnancy and Childbirth**, 15, (27). Retrieved from <http://doi.org/10.1186/s12884-015-0454-y>.
7. Der EM, Moyer C, Gyasi RK, Akosa AB, Tettey Y, Akakpo PK, Blankson A, Anim JT. Pregnancy related causes of deaths in Ghana: a 5-year retrospective study. *Ghana medical journal*. 2013 Dec;47(4):158.
8. Ghana. Statistical Service. Multiple Indicator Cluster Survey, 2011: Monitoring the Situation of Children, Women, and Men; with an Enhanced Malaria Module and Biomarker. Ghana Statistical Service; 2011.
9. Birmeta K, Dibaba Y, Woldeyohannes D. Determinants of maternal health care utilization in Holeta town, central Ethiopia. *BMC health services research*. 2013 Dec 1;13(1):256.
10. Ghana Statistical Service. Ghana Health Service, ICF International. Ghana Demographic and Health Survey, 2014. 2015.
11. Ghana. Statistical Service, Macro Systems. Institute for Resource Development. Demographic, Health Surveys. Ghana demographic and health survey. Ghana Statistical Service; 1993.
12. Yidana A, Issahaku M. Contextualising women decision making during delivery: socio-cultural determinant of choice of delivery sites in Ghana. *Public Health Research*. 2014;4(3):92–7.
13. Akum FA. A qualitative study on factors contributing to low institutional child delivery rates in Northern Ghana: the case of Bawku Municipality. *J Community Med Health Educ*. 2013;3(6):1–9.
14. Thaddeus S, Maine D. Too far to walk: maternal mortality in context. *Social science & medicine*. 1994 Apr 1;38(8):1091-110.
15. Ghana Statistical Service. Ghana Health Service, and ICF Macro. Ghana demographic health survey 2014: Key indicators. Accra, Ghana.
16. Tran TK, Gottvall K, Nguyen HD, Ascher H, Petzold M. Factors associated with antenatal care adequacy in rural and urban contexts-results from two health and demographic surveillance sites in Vietnam. *BMC Health Serv Res*. 2012 Dec;12(1):40.

17. Gifford BD. Quality care in a medicaid managed care program: adequacy of prenatal care for teens in Chicago. *Public Health Nurs.* 2001 Jul;18(4):236–42.
18. 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;11(3).
19. Envuladu EA, Agbo HA, Lassa S, Kigbu JH, Zoakah AI. Factors determining the choice of a place of delivery among pregnant women in Russia village of Jos North, Nigeria: achieving the MDGs 4 and 5. *International Journal of Medicine Biomedical Research.* 2013;2(1):23–7.
20. Ravi RP, Kulasekaran RA. Does socio-demographic factors influence women's choice of place of delivery in rural areas of Tamilnadu state in India. *American Journal of Public Health Research.* 2014;2(3):75–80.
21. Girma T. Traditional newborn care in Jimma town, Southwest Ethiopia. *Ethiopian Journal of Health Sciences.* 2008;18(3):79–86.
22. Mukhtar M, Nelofar M, Quansar R, Khan S, Bashir H. Factors influencing the choice of place of delivery among recently delivered women in tribal areas of district Srinagar: A cross-sectional study. *Journal of Medical Science Clinical Research.* 2018;6(6):356–61.
23. Akum FA. A qualitative study on factors contributing to low institutional child delivery rates in Northern Ghana: the case of Bawku Municipality. *J Community Med Health Educ.* 2013;3(6):1–9.
24. Kifle MM, Kesete HF, Gaim HT, Angosom GS, Araya MB. Health facility or home delivery? Factors influencing the choice of delivery place among mothers living in rural communities of Eritrea. *Journal of Health Population Nutrition.* 2018 Dec;1(1):22. 37(.
25. Abdulmageed SS, Elnimeiri MK. Sociocultural determinants of place of birth among Sudanese women. *International Journal of Community Medicine Public Health.* 2018 Aug;5(8):3220–6.

Figures

Figure 1

Means of transport for accessing health care

Figure 2

Preferred place of delivery

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [AdditionalFile1.docx](#)
- [AdditionalFile3COREQChecklist.pdf](#)
- [Tables.pdf](#)