

Why Expectant Mothers Deliver At Home Rather Than A Hospital - A Cross-Sectional Study In Tamale, Ghana

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ABSTRACT

Introduction

Deaths associated with pregnancy and childbirth which is second only to HIV/AIDS can be largely averted if all expectant mothers are delivered of their babies by skilled health personnel. Despite the accessibility and availability of modern health facilities, some women still deliver at home. This study therefore assessed reasons for which some women deliver at home and which factors could be associated with this practice.

Methodology

Data was collected using a semi-structured questionnaire from 301 women selected using the convenience sampling method from 20 randomly selected suburbs in the Tamale metropolis. Data was analyzed using Microsoft Excel and Statistical Package for the Social Sciences. Association between variables were obtained using appropriate tools at a confidence interval of 95% and significance is assumed when $p < 0.05$.

Results

More than three-fourth of the women in this study had up to 4 antenatal visits but 23.6% of the them still delivered at home. Lack of transportation (42.3%) and precipitate labour (28.2%) were their top two reasons. No formal education, being unemployed and living in an extended family system were found to be statistically associated with home deliveries ($p < 0.001$)

Conclusion

Up to 23.6% of pregnant women still deliver at home even in a city where health facilities and skilled health personnel are easily available and accessible. Health care professionals should intensify their education among expectant mothers to identify the signs of labour while government increases accessibility of women to ambulances which will save the lives of mother and their babies.

Keywords—Home, delivery, expectant, mother, Tamale, Ghana

INTRODUCTION

Death resulting from pregnancy and childbirth continues to deprive families of their loved ones especially in developing countries of low-income or lower-middle income status where up to 95% of global maternal deaths estimated at 3003,000 in 2015 occur [1]. Two-thirds (65%) of the world's maternal deaths that have been reported in Africa could have been lower if these births were handled by skilled birth attendants whose numbers varies greatly across the world at a lower coverage of 59% in the WHO African region and as high as over 90% in America, Europe and the Western pacific regions [1]. Ghana in 2008 introduced free maternal deliveries in its effort to reduce the high maternal mortality ratio (MMR) of about 350 per 100,000 as of 2008 to enable many expectant mothers to have access to modern healthcare services which saw the MMR decreasing to 170 per 100,000 in 2011 [2, 3]. Maternal mortality has been recorded to occur mostly during labour and immediate post-partum [4]. There is no doubt that one way of reducing maternal mortality rate is for pregnant women to attend Antenatal clinics and health facilities where they can access obstetric care by skilled personnel [5, 6]. In Ghana, both attendance to ANC and institutional deliveries have seen an increase from 96% to 98% and 54% to 79% respectively within a decade from 2007 to 2017 as a result of increasing number of health facilities and skilled health professionals [5]. There are differences in obstetric care seeking behavior of pregnant women across the various region of Ghana with 59% of women

delivered by skilled personnel in the northern region against 92% in Greater Accra and Upper East regions [5]. For a large number of pregnant women who had accessed antenatal care to rather deliver at home can be a source of worry. Home deliveries in Africa are attended by traditional birth attendants (TBAs) who although may be providing some assistance to the process of delivery unfortunately lack scientific knowledge about safe practices during child birth therefore leading to complications which could have been avoided if pregnant women had access to a skilled birth attendant such as doctor, nurse, midwife- during childbirth [5, 6]. With the presence of several health care facilities in the Tamale metropolis, and other interventions such as free maternal health care it is expected that all women will deliver in a health facility but it is very likely some home deliveries still occur. It is important to know the possible factors that would cause women to resort to the services of non-skilled persons at a stage of pregnancy which can be deadly. This study therefore measured the prevalence of home delivery in the Tamale metropolis and reasons for which expectant mothers deliver their babies at homes rather than health facilities.

METHODS

Study design and population

This study was a quantitative research using a cross-sectional study design. Data was collected from pregnant women in the Tamale metropolis who had had delivered within a period one to reduce the problem of recall of information. The

study was carried out between May and June, 2019.

Study setting

According to the Ghana Statistical Service (GSS), the Tamale Metropolis which is made up of 115 suburbs has a total estimated land size of 646.90180sqkm and is geographically located between latitude 9° 16 and 9° 34 North and longitude 0° 36 and 0° 57 West [7]. Tamale, the only city in northern Ghana has a population of 233,252 in the last Population and Housing Census in 2010 [7]. Apart from several private health facilities and quasi-government ones, there are three major government owned hospitals which are the Tamale Teaching Hospital, Tamale West Hospital and the Tamale Central Hospital.

Sample size

Since the total number of women in the reproductive age of 15 to 49 years in the Tamale metropolis was unknown, the sample size of 301 was considered as adequate since some previous similar studies in Ethiopia and Eritrea used similar numbers [8, 9].

Sampling procedure

Twenty suburbs out of the 115 communities were randomly sampled using the Microsoft excel Rand function. The suburbs were Lamashegu, Zuozugu, Sorugu, Shigu, Kasalgu, Pagazaa, Jekarayili, Cheshei, Nangbagu, Yipala, Wovugu, Russian Bungalows, Jerigu, Kalipohin, Gumbehini, Parishei, Kakpagyili, Dimala, Dungu-Asawaba, Viting and Kpeni. Non-probability methods of convenient and snowball

or network sampling techniques were the strategies used to get participants in these selected communities. The convenient sampling was used to get women whom by chance were met carrying a child who the researchers suspect could be at most year old. Snowballing technique was then applied to get other women in the community totaling 15 for each of the 20 communities. Respondents were therefore met at their homes, along the streets, shops as well as boreholes.

Study tool and data collection

The semi-structured questionnaire used for the final study was piloted from 20th to 27th March, 2019 to test the study tool to remove ambiguities and also make it easier to administer. Actual data was collected from the 1st to 15th April, 2019. The semi-structured questionnaire was divided into sections to collect information on socio-demographic characteristics as well as their obstetric history.

Statistical analysis

Microsoft Excel and the Statistical Package for Social Sciences (SPSS) version 23.0 were used to analyze the data for the frequencies and percentages. Association between the socio-demographic characteristics and facility or place of delivery was determined using the appropriate tools. Association was considered statistically significant when p value < 0.05 at a confidence interval of 95%.

RESULTS

Socio-demographics characteristics of the respondents.

Majority, 270 (89.7%) of the respondents were married, but 7 (2.3%) were single. For the educational status, most of the correspondents 134(44.5%) had no formal education while the rest have some level of education but only 29 (9.7%) went beyond senior high school level. Most respondents, 84 (28%) were between the ages of 20 and 25 while only 7 (2.2%) gave their ages to be above 45 years. The religious inclination of majority, 271 (90.0%) of respondent was towards Islam with the Christians

being in the minority, 30 (10.0%). Majority of respondent, 185 (61.5%) were employed and also living in a nuclear family system, 188 (55.1%) unlike the rest 135 (44.9%) who live with some other relatives. We will consider majority of the respondents, 157 (52.2%) to be low income earners since they stay in single room apartment with only 18 (6.0%) occupying apartments hence can be considered as high-income earners. However, subscribers of the National Health Insurance Scheme (NHIS) were in the majority, 269 (89.4%). Table 1 shows the socio-demographics characteristics of the respondents.

Table 1: Socio-demographics characteristics of the respondents.

Variables	Subgroups	Frequency	Percentage
Age	<20	17	11.7
	20-25	84	28
	26-30	83	27.6
	31-35	41	13.6
	36-40	44	14.7
	41-45	25	8.3
	>45	7	2.2
Marital Status	Single	7	2.3
	Married	270	89.7
	Co-habiting	24	8
Religion	Christianity	30	10
	Islamic	271	90
Family System	Nuclear	166	55.1
	Extended	135	44.9
Type of Accommodation	Chamber and hall	54	7.9
	Apartment	18	6
	Compound house	72	23.9
	Single room	157	52.2
Are you a subscriber of the NHIS?	Yes	269	89.4
	No	32	10.6
Type of Employment	Employed	185	61.5
	Unemployed	116	38.5
Educational Status	No formal Education	134	44.5
	Primary	81	26.9
	JHS	57	18.9
	At least Senior High School or /Vocational	29	9.7

Obstetrics characteristics/ history of respondents.

Table 2 shows the obstetric characteristics of the respondents. Those having only one child were 70 (23.3%) while those with two, three, four, five, six and seven represent 84 (27.9%), 73 (24.4%), 38 (12.6%), 18 (6%), 13 (4.3%) and 5

(1.7%) respectively. The number of home deliveries were 71 representing 23.6% and those who delivered in the hospital were 230 (76.4%). Most, 58 (19.3%) of respondents had had six antenatal clinic (ANC) visits during their last pregnancy but 7 (2.3%) on the other hand never attended any ANC.

Table 2: Obstetric characteristics of respondents

Variables	Subgroups	Frequency	Percentage
Total number of deliveries	1	70	23.3
	2	84	27.9
	3	73	24.3
	4	38	12.6
	5	18	6
	6	13	4.3
	7	5	1.7
Ever had home deliveries	Yes	71	23.6
	No	230	76.4
Number of ANC visits so far in the current pregnancy	0	7	2.3
	1	10	3.3
	2	28	9.3
	3	29	9.6
	4	47	15.6
	5	57	18.9
	6	58	19.3
	7	53	17.6
	8 or more	12	3.9

Reasons for home delivery

Fig. 1 shows the reasons why some women delivered their babies at home instead of hospital. The most common reason for home delivery was lack of transportation to the health facility, 30

(42.3%), with other reasons being precipitate (unexpected) labour, 20 (28.2%), inadequate funds for hospital bills, 10 (14.1%), lack of health facility nearby, 5 (7%), cultural reasons, 3 (4.2) and other reasons, 3 (4.2%).

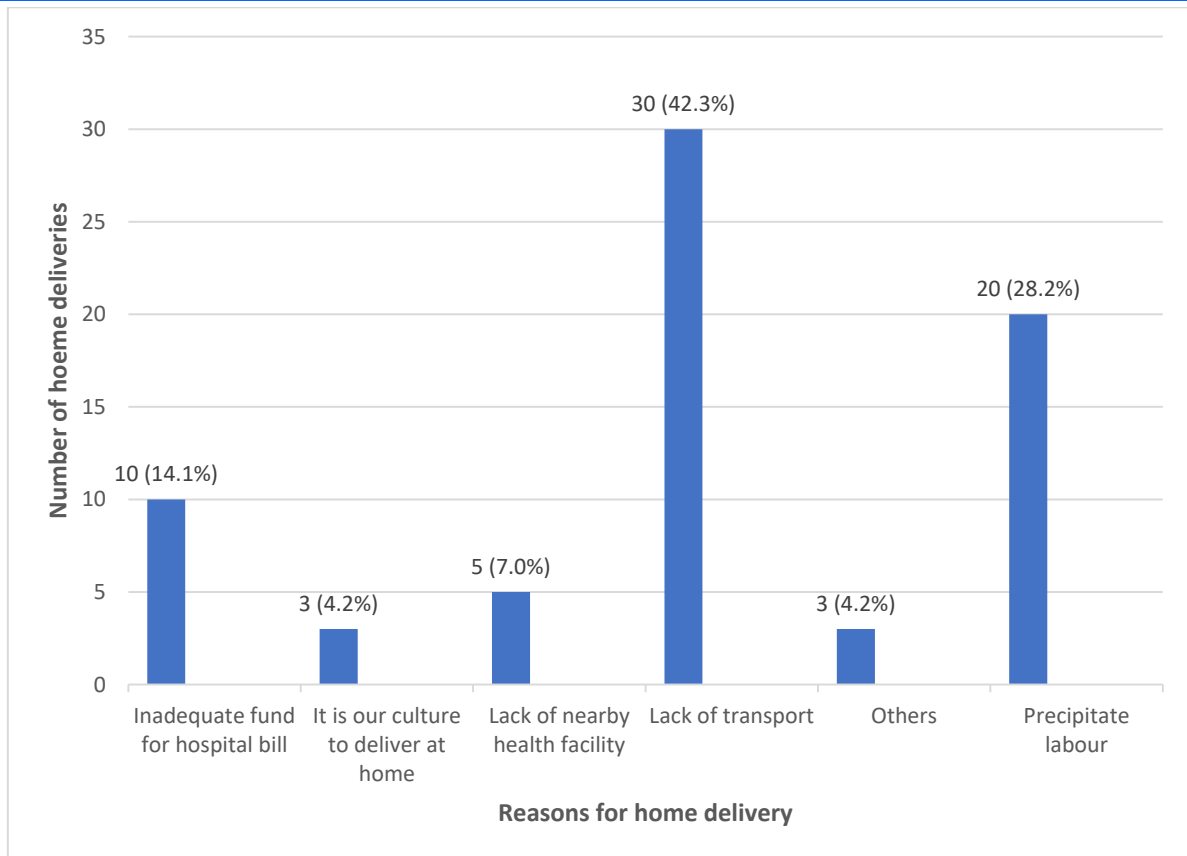


Figure 1: Reasons why some women delivered their babies at home instead of hospital

Association between socio demographics and home delivery

Table 3 shows the association between the socio-demographic characteristics of respondents and their tendency of delivering at home rather than the hospital. Women with no formal education were significantly more likely to deliver at home than those with some education (40.3 vrs \leq 11.1%; $p < 0.001$). Again, being unemployed is

significantly associated with home delivery than being gainfully employed (34.3% vrs 16.8%; $p < 0.001$). Also, living in an extended family system is significantly associated with delivering at home compared to those in nuclear families (31.3% vrs 14.1%; $p < 0.001$). There were no significant association between respondents\ marital status, religious affiliation, income level or NHIS subscription.

Table 3: Association between socio-demographic characteristics and home delivery

Variable	Sub group	Home Delivery		p-value
		No	Yes	
Educational status	No formal education	80 (59.7%)	54 (40.3%)	< 0.001*
	Primary	72 (88.9%)	9 (11.1%)	
	Junior high school	51 (89.5%)	6 (10.5%)	
	At least Senior High school	27 (93.1%)	2 (6.9%)	
Type of Employment	Employed	154 (83.2%)	31 (16.8%)	<0.001*
	Unemployed	76 (65.5%)	40 (34.5%)	

Family system	Extended	114 (68.7%)	52 (31.3%)	<0.001*
	Nuclear	116 (85.9%)	19 (14.1%)	
Marital status	Co-habiting	19 (79.2%)	5 (20.8%)	0.905
	Married	206 (76.3%)	64 (23.7%)	
	Single	5 (71.4%)	2 (28.6%)	
Religion	Christianity	27 (90.0%)	3 (10.0%)	0.065
	Islamic	203 (74.9%)	68 (25.1%)	
Type of accommodation	Apartment	13 (72.2%)	5 (27.8%)	0.244
	Chamber and hall	43 (79.6%)	11 (20.4%)	
	Compound house	49 (68.1%)	23 (31.9%)	
	Single room	125 (79.6%)	32 (20.4%)	
NHIS	No	26 (81.3%)	6 (18.8%)	0.495
	Yes	204 (75.8%)	65 (24.2%)	

DISCUSSION

Death during pregnancy and childbirth among women in their reproductive period is second only after HIV/AIDS especially in women aged between 15 and 29 years [1]. Again, according to the WHO, (2019) almost 95% of these maternal deaths occur mostly in developing countries of which up to two thirds (65%) of these deaths happens in WHO African Region [1]. Reduction of the risk of a woman during the period of pregnancy and childbirth can best be achieved if they have access to skilled birth attendants. This study found about a quarter (23.6%) delivering at home compared to the greater number of 76.4% who had hospital deliveries. This study's home delivery proportion seem to be lower than similar works in Eritrea, Ethiopia, Guinea Bissau and Kenya where births not attended to by skilled personnel ranges from 26% to 75.4% [9-14]. Even in Ghana, Boah et al, (2020) recorded home delivery prevalence rate of 38.1% in the Builsa South district in the more northerly located Upper East region [15]. These differences in the prevalence rate can be attributed to the study sites

with most of the high values recorded in more rural districts. Inadequate health facilities and skilled personnel makes the unskilled traditional birth attendants and relatives to be those available to assist in delivery of babies for most of them compared to a city of Tamale where health facilities are accessible and availability of skilled personnel is assured. Another study in Tamale also recorded home delivery rate of 20.7% which was quite close to what was recorded in this study. The most important reason for home delivery in this study was the lack of transportation to the health facilities which was also recorded in Bangladesh and Zambia [16, 17]. It is not so clear what lack of transportation in this study could mean since unlike rural areas where bad roads can hinder the movement, Tamale being a city has most of its roads being mostly motorable all year round. Also, most homes have motorbikes which could in emergencies move expectant mothers to nearby health facilities. Lack of transportation can be attributable to inadequate funds to hire vehicles to move these women to the health facilities

especially if labour sets in late in the night. Just as found in Bangladesh and Kenya, inadequate fund for the hospital bills was another stated reason for home deliveries in this study [11, 16]. With almost nine out of ten (89.4%) of the women being National Health Insurance beneficiaries and that since 2008 maternal care in Ghanaian hospitals is supposed to be free, it will be expected that cost of maternal and obstetric care should not be a barrier for health facility delivery among expectant mothers in Ghana. Some studies in Ghana have however found that although the NHIS and the Free Maternal Care policy in Ghana had reduced cost associated with pregnancy and delivery, there are still some cost that women bear when accessing maternal and obstetric care in health facilities across Ghana which showed that inadequate funds for hospital bills being a factor for home delivery had been corroborated [18, 19]. In this study, precipitate (unexpected) labour was assigned as a reason for more than a quarter (28.2%) of women who delivered at home similar to those reported in Kenya and Zambia [10, 11, 17]. This study found that about three-fourth of the respondents attended the ANC at least four times as previously recommended by the WHO with only 12 (3.9%) satisfying the current minimum of eight visits [20]. Although, the minimum of four ANC visit model developed in the 1990s have been found to be associated with more perinatal deaths, than the at least eight ANC visit model, one encouraging development found in this study is that a high proportion of 97.7% experienced at least one ANC visit where the health

professionals could have told the women their expected date of delivery as well as some signs of labour. For about a quarter of the women to experience precipitate labour calls for more education at the ANCs and a more effective communication of health information. Although not a very popular reason cited for home delivery, some women (4.2%) in this study claimed that their culture or tradition prevents them from delivering at health facilities just as recorded in some studies in Bangladesh and Zambia [10, 16]. Interventions that will reduce proportion of home deliveries can best be targeted if factors that are associated with these home deliveries are known. This study found two-fifth (40.3%) of women who delivered to be those with no formal education which is similar to situation in other parts of Ghana as well as other African countries such as Ethiopia, Guinea Bissau and Kenya [11, 13, 14, 15]. Lack of education makes such women probably not earning good incomes as they may be unemployed. Unemployment was a factor associated with home delivery similar to another Ghanaian study and one from Guinea Bissau [14, 15]. Although being unemployed was found in this study to be significantly associated with home delivery, a respondent's income level measured in this study by the type of accommodation the family occupies was not found to be associated with home delivery as reported in other studies [13, 17, 21]. Just a little below half the number of respondents were living in an extended family system which in Africa may be aunts, grandparents, cousins among other [22]. These older relatives in extended

families may hold fast to the methods they were delivered of their babies so will not appreciate health facility delivery and hence influence their pregnant relatives to opt for home delivery. Expectant mothers living in extended family systems were therefore significantly opted for home deliveries. Marital status was not significantly associated with home delivery just as reported in Kenya, Zambia and another study in the northern region of Ghana [11, 15, 17]. One would have thought that holding a health insurance card should encourage an expectant mother to deliver in the health facilities since lack of funds may not be a challenge since the National Health Insurance Scheme would absorb the cost of delivery but this was not found in this study. Ogolla, (2015) and Boah et al., (2020) also did not find any association between being registered on an insurance package and delivering at health facilities instead of the home [12, 15].

CONCLUSION

This study found up to 23.6% of women in this study delivering their babies at home. Difficulties in getting transportation was the most common reason for not getting to a health facility to deliver although more than a quarter expected labour being the cause of their home delivery. With this high level of home delivery in a city such as Tamale, it is imperative that health professionals intensify their education so expectant mothers would know when labour is setting in so they can make arrangement for transportation to the health facilities

Although this study was limited by virtue of it being conducted in some suburbs of the city of Tamale and not across the country, this result cannot be generalized as what pertains throughout Ghana. Also, in choosing the respondents, convenience and snowballing sampling methods were applied; sampling methods that are prone to biases. Despite these limitations, knowing the factors responsible for some women delivering at home will enable health policy makers and politicians to make necessary interventions which should encourage more health facility delivery thereby ultimately reducing maternal and child mortality rate so that many more countries including Ghana can meet the Sustainable Development Goal 3.

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