SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
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FACTORS INFLUENCING UTILISATION OF SKILLED DELIVERY
IN THE EAST AKIM MUNICIPALITY OF GHANA

BY

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DECLARATION

I, Rebecca Bantey, do hereby declare that apart from the references made to other people’s work which have been duly acknowledged, this research work is purely my own effort conducted under the supervision of Prof. Richard Adanu and Dr. Deda Ogum Alangea; and it has not been submitted either in part or whole to the University of Ghana or elsewhere.

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Dr. Deda Ogum Alangea Date

(Supervisor)
DEDICATION

I dedicate this work to God Almighty for His protection over my life, His grace, and the strength given to me throughout the course of the program. I also dedicate it to my spouse, Mr. Eric Kojo-Moon and my lovely daughters, Barbara, Princess, Queen and Quinsker for their love and encouragement which had been my source of inspiration.
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LIST OF ABBREVIATIONS

ANC    - Antenatal Care
DHS    - Demographic and Health Survey
GHS    - Ghana Health Service
MOH    - Ministry of Health
WHO    - World Health Organization
TBAs   - Traditional Birth Attendants
NHIS   - National Health Insurance Scheme
DOSH   - Department of State for Health
MCH    - Maternal and Child Health
MWH    - Maternity Waiting Homes
PNC    - Postnatal Care
CWC    - Child Welfare Clinic
ABSTRACT

Background: Even though skilled birth attendance is useful for reducing maternal mortalities and morbidities, utilisation of skilled delivery in Ghana is sub-optimal. The main purpose of this study is to identify the factors that influence the utilisation of skilled delivery in the East Akim District of the Eastern region, Ghana.

Methods: A facility-based cross-sectional study employing quantitative research methods was carried out among 352 postnatal women attending child welfare clinics at the Kibi Government Hospital, New Tafo Government Hospital, Asiakwa Health Centre and Apedwa Health Centre, East Akim District in the Eastern region, Ghana. A consecutive sampling technique was used in selecting eligible participants. Data were collected on socioeconomic and demographic factors, health service factors and relevant reproductive history. The data were cleaned and entered into STATA software (version 15). Chi-square test was performed to test the associations between independent variables (demographic factors, health service factors and relevant reproductive history) and the dependent variable, utilisation of skilled delivery. Simple and multiple binary logistic regressions were carried out to determine the factors that are associated with the utilisation of skilled delivery. Statistical significance was determined at p-value < 0.05.
Results: The results of this study show that the estimated proportion of women who used skilled delivery was 85.2%. The majority (44.3%) of the participants were married and 69.9% had attained primary/JHS/Middle school. More than three-quarters of respondents were employed with 67.6% engaged in artisanal services such as hairdressing, dressmaking, and catering. The majority (92.9%) professed the Christian faith. The results showed that 57.9% of respondents earned an average monthly income below GH₵250.00. History of obstetric complication, availability of equipment with medication for treatment and age of pregnancy at first ANC contact were significantly associated with skilled birth delivery in bivariate regression analysis. After adjusting for socio-economic and demographic factors, women with no history of obstetric complication had lower odds of utilizing skilled delivery (aOR = 0.04, 95%: 0.008 – 0.2, p-value = <0.001). Women who said that the facilities that they attended were equipped or highly equipped had higher odds of utilising skilled birth delivery [(aOR = 14.6, 95%CI: 2.03 – 104.2, p-value =0.008) and (aOR = 41.7, 95% CI: 5.1 – 342, p-value = 0.001) respectively.

Conclusion: This study reports a high utilisation of skilled delivery in the East Akim municipality. After adjusting for marital status, partner educational level, maternal employment, paternal employment, and average monthly income, history of obstetric complication and availability of equipment with medication for the treatment were significantly associated with skilled birth delivery.
CHAPTER ONE

1.1 Introduction

Skilled birth attendance or skilled delivery is professional care and management of normal or uncomplicated pregnancies, childbirth and the immediate postnatal periods, as well as identifying, managing and referring complications in women and infants for emergency obstetric care (WHO, 2015b). The major components of skilled delivery are skilled birth attendants (nurses, midwives, physicians, and obstetricians) and enabling or functional working environments such as drugs, equipment and other medical supplies, which are important for preventing mortalities and morbidities in women and babies (Utz, Siddiqui, Adegoke, & Van Den Broek, 2013). Skilled care refers to the care provided to a woman and her newborn during pregnancy, childbirth and immediately after birth by an accredited and competent health care provider who has at her/his disposal the necessary equipment and the support of a functioning health system, including transport and referral facilities for emergency obstetric care.

One of the world’s public health issues today is maternal deaths, most of which are preventable. According to the WHO, 800 women die every day during pregnancy and childbirth (WHO, 2015b). For instance, in the year 2013, there were 139 million births globally, of which a total of 289,000 maternal mortalities were recorded (Abubakar, Tillmann, & Banerjee, 2015).

A study attributed the cause of the high maternal deaths to pregnancy and childbirth complications such as eclampsia, hemorrhage, sepsis, obstructed labour and complications of unsafe abortion (Adjei, 2015). However, most of these pregnancy and childbirth complications are avoidable when births are assisted by skilled birth attendants such as midwives, nurses, physicians, and obstetricians (Adegoke & Van Den Broek, 2009). Studies in Bangladesh and Sri Lanka showed
that skilled birth attendance and maternal education reduces the rates of maternal deaths and improve maternal health outcomes (Chowdhury at el 2011; Senanayake et al., 2011). Despite the usefulness of skilled delivery, skilled birth attendance in sub-Saharan Africa is low (48%) compared to Europe (99%), America(93%), and Asia(65%) (Hogan et al., 2010).

Utilisation of skilled delivery or birth attendance has been linked to many factors such as place of residence, a distance of health facilities, religion or beliefs, level of education, occupation, parity, the attitude of health care professionals and availability of drugs and equipment. A study in Bangladesh on the utilisation of skilled delivery found the level of education of husbands, wealth, living in rural areas, prolonged birth intervals and mass media exposure as factors that influenced the utilisation of skilled delivery (Kibria et al., 2017). Similarly, a study in Kenya identified the place of delivery, assistance during delivery, age, and educational level, place of residence, marital status, parity and birth intervals as factors that influenced the use of skilled delivery (Okoth, 2014). According to Enchill (2010), the factors that influenced the utilisation of skilled delivery in the Asante Akim North Municipality in the Ashanti Region of Ghana are age, religion, level of education, place of delivery, employment status, place of residence, parity and antenatal care sessions.

In Ghana, despite the relatively good access to health care, especially due to the health insurance policy – a social intervention program that covers medical expenses – maternal deaths are still high, and this is linked to many factors such as women's place of residence, level of education, proximity to health facilities and women's autonomy (Akum, 2013). However, little is known about the factors that influence the utilisation of skilled delivery among women in the East Akim District of Ghana. This study, therefore, aims at identifying the factors that influence the utilisation of skilled delivery in the East Akim District of Ghana.
1.2 Problem Statement

One of the major health disparity indicators, particularly between poor and advanced or rich nations is maternal mortality (Akum, 2013). Complications in pregnancy and childbirth are responsible for about 1,000 maternal deaths every single day in the world, and over 500,000 maternal deaths (as a result of complications in pregnancy and childbirth) occur every year (Bashar, Dahlblom, & Stenlund, 2012). In a lot of developing economies, most deliveries (47%) do not take place in health facilities. Deliveries are usually assisted by relatives or traditional birth attendants (TBAs) (Jallow, 2007).

In Ghana, some women end up delivering on their own (like home delivery) due to inadequate care from health personnel (Gabrysch & Campbell, 2009). Even though skilled birth attendance is useful for reducing maternal mortalities and morbidities, only 45.6%, 49.5%, 52.2% and 91% of mothers utilised skilled delivery in Ghana in 2009, 2010, 2011 and 2014 respectively which means that as a country we still have a lot to do (Gudu & Addo, 2017). Similarly, in the eastern region, the percentage of women whose deliveries were supervised by a skilled provider was 67.2%. Without intensified efforts, the target of attaining zero maternal deaths in the municipality will be under great threat. The municipality recorded skilled delivery coverage of 43.9%, 43.9%, and 42.1% for 2015, 2016 and 2017 respectively. Without intervention, maternal deaths in the region will remain unacceptable. Measures needed to reverse this situation will require evidence on factors that influence the utilisation of skilled delivery. Knowledge of these factors can inform policy and programmatic actions needed to be taken to address the issue of maternal deaths in the municipality.

1.3 Justification of the study
Maternal deaths are a major health problem facing the world. The reports show that about 800 women die every day during pregnancy and childbirth, and the most frustrating part is that these deaths are preventable. This may be attributed to a lot of reasons including the low utilisation of skilled care. Anecdotal observation in Ghana shows that some women end up delivering on their own (like home delivery) due to inadequate care from health personnel. In the eastern region of Ghana, only 67.2% of women have deliveries supervised by a skilled attendant (GHS, 2014). Given this, the study will highlight factors contributing to the utilisation of skilled delivery services to inform policy on the necessary steps to take to improve utilisation. The results of the study will also assist stakeholders in designing specific solutions to the identified factors. Additionally, this study will generate useful information that can inform future studies.

1.4 Research Questions

i. What is the proportion of women who utilised skilled delivery?

ii. What are the different factors associated with access to skilled delivery?

1.5 General Objective

To determine the factors that contribute to the utilisation of skilled delivery in the East Akim Municipal of the Eastern Region

1.6 Specific Objectives

i. To determine the proportion of women who utilised skilled delivery

ii. To identify the factors associated with skilled delivery
1.7 Conceptual Framework

![Conceptual Framework Diagram]

**Figure 1: Conceptual framework indicating factors contributing to the utilisation of skilled delivery service.** Adapted from Enchill (2010).

The above figure indicates the factors contributing to the utilisation of skilled delivery service. The use of skilled delivery service is hinged on several factors such as; the quality of services, geographic factors such as availability and access to health facilities together with the availability of skilled attendants and socio-economic backgrounds of women or mothers. The availability of equipment and logistics encourage staff with the requisite training and skills to work effectively. This tends to improve the quality of services thereby attracting more women to use skilled delivery services. However, the lack of equipment (such as vacuum extractor) and logistics to help with assisted delivery in health facilities has a tendency to frustrate and weaken staff skills and
capabilities. Inadequate knowledge and skills on the use of some equipment (including Sonicade) by some staff might lead to dissatisfaction on the part of some clients, resulting in the low utilisation of skilled delivery (Ian Peate & Hamilton, 2013).

Clients’ socio-economic characteristics could determine the use or non-use of skilled delivery services. Even though a client may desire to use skilled delivery services, low socio-economic status, in terms of income, occupation and education level may impede the utilisation of skilled delivery (Addai, 2000).

In determining the utilisation of skilled delivery services, the presence of health facilities is essential. In terms of time, cost and means, access to health facilities should be such that roads are easily accessible. However, the lack of accessible roads tends to increase time in gaining access to skilled delivery services due to cost and availability of a suitable mode of transportation. This may also contribute to the low utilisation of skilled delivery services (Asundep et al., 2013).
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Background to Skilled Delivery

Maternal mortality is very high with 210 per 100,000 live birth (WHO, 2015b). Neonatal mortality in 2014 was 2,763,000 which meant that there 20 neonates dying out of every 1,000 children (WHO, 2014). However, in the year 2000, there was an acceptance from countries to pursue the eighth goal Millennium Development agenda. The goal five of the Millennium Development goal was to reduce maternal mortality in 2015 by 75% (WHO, 2015a). There were two key strategies in achieving this goal: by training more competent traditional birth attendance (TBAs) and competent health professionals (nurses, midwives, and doctors) to skillfully manage maternal and neonatal health in other to achieve this target (WHO, 2015b). It is estimated that in every four deliveries worldwide one out of the four children delivered is not by skilled labour (WHO & Unicef, 2014). Also, about 40million of these children who did not go through skilled delivery occurred in low and middle-income countries in 2015 alone (Kozuki et al., 2015). And sub-Saharan Africa recorded a higher percentage of these unattended to deliveries by some skilled personnel (M. K. Heloo, 2019). Also, in sub-Saharan Africa antenatal visit is very high but when it is time for them to deliver they deliver at home (WHO, 2015b). Moreover, this is a major factor lowering productivity in sub-Saharan Africa and the world as a whole, with an estimated global loss of productivity of US$15 billion due to maternal and neonatal mortality (WHO, 2015b).
2.2 Skilled delivery in Ghana

Maternal mortality in Ghana still stands at 380 deaths per 100,000 live births which is still high comparing it to the Millennium Development Goal 2015 which had a target of an estimated reduction of maternal death of 185 per 100,000 (Kyei-Nimakoh, Carolan-Olah, & McCann, 2016). In 2011, Ghana's neonatal mortality rate stood at 32 deaths per 1,000 live births (Kyei-Nimakoh et al., 2016). Against this backdrop, several interventions were put in place by government and also with the assistance of non-governmental agencies to help reduce maternal and death of newly borns (Esena & Sappor, 2013). These interventions include: replacing midwives who have gone on retirement with newly trained ones; establishing new allied health schools to train these midwives; upgrade schools that trained health assistants into full midwifery school, introduction of the Community Health Planning and Services (CHPS) programme to help bring health facilities closer to the pregnant women to reduce geographical barriers; free Health Insurance Scheme for pregnant women and the policy of women delivering free in every government facility (Esena & Sappor, 2013). The policy of pregnant women delivering free at the government facilities began in four regions in 2003 and was subsequently rolled-out in 2005 in the entire country (Dzakpasu et al., 2012). Aside safe motherhood initiatives like free delivery, emergency obstetric and neonatal care and high impact rapid delivery have all been implemented (Dzakpasu et al., 2012). Also, delivery in a health facility and skilled delivery has increased from 42% in 1988 to 74% in 2014 (Amoakoh-Coleman et al., 2015).
2.3 The Importance of Skilled Delivery

To reduce the situation of women dying from pregnancy-related death requires critical intervention like skilled delivery (WHO, 2015b). This is because three out four maternal deaths are recorded in the first 24 hours of delivery because of the unforeseen related complication that comes with a woman being in labour and delivering (Khan et al., 2006). Although complications during childbirth are unpredictable in an expectant woman, they can be managed or prevented if there is an effective environment to enable the appropriate treatment to be effected. This is why WHO recommends that all deliveries must be conducted by a skilled birth attendant who attends delivery, labour complication, post-delivery treatment and how to follow the right procedure for referring if needed (Khan et al., 2006).

Skilled delivery is when conditions necessary for a woman to receive adequate care are in place during labour and delivery and post-delivery (Graham, Bell, & Bullough, 2001). This optimal condition includes a conducive environment where there is the necessary equipment, human resources, infrastructure, good communication system and effective referral system (Graham et al., 2001).

Even though this standard has been recommended by WHO, the prevalence of women who are monitored by a skill birth attendant during delivery is about half of the pregnant women (Moyer & Mustafa, 2013). Every delay or not seeking care from a skilled birth attendant in every moment significantly increases the risk of maternal death, stillbirth and neonatal death (Lee et al., 2009). According to Graham et al., (2001) when there is a global achievement of skilled birth attendance for all pregnant women, it has the possibility of reducing maternal death by an estimated 16-33% and neonatal mortality 20-30%.
2.4 The proportion of clients who delivered with a skilled birth attendant

The perception of women about the health service-related factors such as competency of the birth attendant, infrastructure, equipment and cost at the health centres, influences their decision and willingness to access the health facilities for delivery (Feeley & Thomson, 2016). Perception about the health service-related factors often results in low skilled delivery (Sheferaw, Mengesha, & Wase, 2016). Although several interventions have been initiated by the government and their allies to help encourage women in accessing delivery services (Kyei-Nimakoh et al., 2016). A study conducted in Ghana showed that inadequate care from health personnel prevents women from receiving skilled attendants which makes some of the women deliver with untrained attendants in an unhygienic environment (Amoakoh-Coleman et al., 2015). Another factor is that family members advice expectant mothers not to deliver at the health facility because of the fear episiotomy and caesarean section (Bohren et al., 2014). An explorative study conducted in rural Malawi found out that women in rural Malawi were, not visiting the facility during delivery because of the fear of going through an operation (Seljeskog, Sundby, & Chimango, 2006). This is because, any woman who goes through Caesarean sections in Malawi was considered to be an abomination because women were naturally designed to have vaginal delivery (Mengesha, Biks, Ayele, Tessema, & Koye, 2013). Furthermore, it was perceived that women who allow themselves to be operated upon are lazy (Ugwu & de Kok, 2015). It was also noted that even if women go through caesarean section, health professionals are not able to keep the information confidential. Thus, the lack of confidentiality deters women from using health facilities (Moyer & Mustafa, 2013). This has made monitoring the reduction of maternal and neonatal mortality difficult (Say, Souza, & Pattinson, 2009).
Skilled birth attendance is the proportion of women in labour who were attended to by a skilled professional (Cragin, DeMaria, Campero, & Walker, 2007). It also represents the percentage of women who were given optimal care during pregnancy, delivery, postpartum, whether from the health facility or supervised at home (Titaley, Hunter, Dibley, & Heywood, 2010). Nevertheless, the environment where the delivery takes place must be enabling and the skilled attendants must have the requisite knowledge and skills. There should be an action-oriented supportive policy from regulatory institutions, equipment, infrastructure, efficient and effective communication system and protocol for referral (Moyer & Mustafa, 2013). The percentage of women who are attended to by a skilled birth attendant is a key indicator for reducing maternal mortality and morbidity (Adegoke & Van Den Broek, 2009). It is one vital indicator that is being used for measuring progress towards the fifth SDG, improving reproductive health (Reed, Fraser, & Dougill, 2006).

Studies also show that in developing countries in Asia and Africa, 65.4% and 46.5% of pregnant women were attended to by a skilled birth attendant respectively (Borghi at el., 2006; Witter at el., 2009). East Africa recorded 33.7%, followed by West Africa (41.2%) and South-central Asia (46.9%). Polynesia recorded the highest proportion of skilled delivery (99.8%) followed by East Asia (98%) and South America (92.7%) (Culbert, 2015). However, extremely low prevalence was reported for skilled delivery in African countries such as Ethiopia (9.8%), Niger (15.7%), Chad (16.2%), and Burundi (19.1%) (Cotter, Hawken, & Temmerman, 2006). In Ghana, skilled delivery has increased appreciably over the past years, the country leaps from 47% in 1988 to a significant increase of 59% in 2008 and had a quantum leap to 74% in 2014 (Nyarko, 2018).
2.5 Factors Associated with Utilisation of Skilled Birth Assistance

Several factors have been found to influence the choice of skilled delivery. These factors may be categorized into socio-demographic, geographical factors and health system factors. Socio-demographic factors influencing utilisation of skilled delivery services.

2.6 Socio-Demographic Characteristics

2.6.1 Maternal Age

The age of the woman at the time of labour has been proven as an influencing factor on whether they will deliver at the health facility or home (Reynolds, Wong, & Tucker, 2006). There is evidence in Ghana in relation to maternal age and seeking skilled birth attendance at the health facility. From the 2008 GDHS, 58.9% of pregnant women ranging within the age 20-34 years had higher odds of delivering at the hospital. This was followed by ages between 35-49 years with 53.8%. The least to access a health facility for delivery or delivery with the help of a skilled attendant was age 20 years and below with a percentage of 50.9% (GSS, 2012).

This was not just the case in Ghana, in Nigeria, Chubike & Constance (2013) also concluded that pregnant women below the ages of 20 are less likely to use the health facility for delivery. Nevertheless, findings by Ononokpono & Odimegwu (2014) in a study among women in Nigeria suggests that maternal age was not significantly associated with whether the woman will deliver at home or under supervision.
2.6.2 Parity

Several studies have proven that the parity of the woman is a major factor in influencing where she will deliver (Gabrysch & Campbell, 2009). A study by Stephenson et al., (2006) in Malawi, Ghana, Kenya, and Tanzania identified that women who have delivered so many times are likely not to patronize skilled delivery or delivering at the health facility. In Ghana, women who have less delivery experience are 84% more likely to use the health facility than women who have six or more experiences of delivery (GSS, 2012).

Also, in a cross-sectional study among women in the Busia district in Uganda, it was found that the higher the parity, the lesser the chances of a pregnant woman assessing a skill birth attendant or facility for delivery (Anyait et al., 2012). The low uptake of women with multiple deliveries was attributed to the fact the women had gained confidence in the delivery process and did not fear complications any longer (Tey & Lai, 2013).

In Pakistan, for example, women who are experiencing pregnancy for the first time are those that mostly assess health facility for delivery (Agha & Carton, 2011). Comparatively, 28% of women who had 5 times delivery experience utilised skilled birth attendance as opposed to 50% of women in their first labour.

2.6.3 Maternal Education level

The maternal level of education has been established to have a significant influence on where the woman delivers (Addai, 2000). For example, it was found that 95% of women who had at least a secondary school education deliver with the help of a skilled attendant compared to 52% of those who had no formal education (Macro, 2004).
Also, a cross-sectional study conducted by Esena & Sappor (2013) found the maternal level of education is significantly associated with place of delivery. The study concluded that women who had some form of formal school prefer to deliver at the health facility compared to those without formal education (Esena & Sappor, 2013).

Another study corroborated the earlier assertion that pregnant women who are educated have a higher possibility of delivering at the facility or with a skilled attendant (Solanke & Rahman, 2018). Another study also found a significant association between the educational level of pregnant women and the likelihood of attending the facility for medical care (Babalola & Fatusi, 2009). According to Esena & Sappor (2013), all women who had their education up to the tertiary level will always visit the health facility for maternal care on the least thing that happens to them. This, indirectly suggests that improving the support given to the girl child to equally access education like their male counterparts has the potentials of decreasing the proportion of unskilled delivery in the country since those who opt for unskilled delivery are women with little or no knowledge on maternal and reproductive issues.

In another comparative study in Nigeria among women, it was found that women without formal education were more likely to visit herbalist and Traditional Birth Attendance than women with at least secondary school education (Doctor et al., 2012). In another study in Tanzania the educational level of women emerged as a significant factor in determining the choice of place of delivery (Mrisho et al., 2007). Gabrysch & Campbell (2009) also highlighted that women with a higher level of education are most likely to seek the services of a skilled attendant because they have better knowledge of current health issues and have more resources at their disposal than less educated women. In another study the analysis suggested that maternal education is predisposing factor to place of delivery (Afework et al., 2014).
In another research it was found that the frequency of hospital utilisation increases when pregnant women are educated on reproductive health and the need to visit a health facility.

This brings to light why more women should be exposed to education on reproductive health (Bhatta et al., 2009). Furthermore, another study found out that women with least secondary education or primary education had 2.2 and 1.4 odds of receiving antenatal and skilled attendants than their counterpart without formal education (Karkee, Lee, & Khanal, 2014).

2.6.4 Occupation

The Ghana Demographic and Health Survey revealed that the occupation of a woman or her husband is a significant variable that determines the place of delivery (GDHS, 2014). The occupation, therefore, serves as a proxy for ability to access a service. Hence, if the family has no money, the tendency of seeking help from other places aside the health facility or from a skilled birth attendance is very high (Gabrysch & Campbell, 2009). The report, further showed that professional women have 100% chance of using a health facility compared to non-professionals (GSS & Macro, 2009).

2.6.5 Socio-Economic Status

The socio-economic status of women has been strongly associated with where they seek health care and where they deliver (Adjei, 2015). Generally, the poor health of women is attributed to poverty. Likewise, the socio-economic status of women has been found to play a significant role in determining skilled delivery utilisation (Tey & Lai, 2013). Furthermore, a study to explore the factors hindering the utilisation skilled delivery at health care institutions in the Bawku Municipality of Ghana found that socio-economic status of women as a major factor in facility
delivery (Gudu & Addo, 2015). Most households could not afford skilled delivery because it takes more than half of their annual income (Kerber et al., 2007).

2.6.6 Religion

Religion, custom, tradition has a strong influence on women delivering at home (Bohren et al., 2014). According to Esena & Sappor (2013), religion has no significant association with utilisation of health facilities even though it has a higher tendency of influencing women to deliver at home (Amoakoh-Coleman et al., 2015). In some African tradition, when women deliver at home it is believed that the child has some ancestral protection because of the traditional right performed when the child is born (Onyeneho, Amazigo, Njepuome, Nwaorgu, & Okeibunor, 2016). Contrary evidence is reported in Nigeria that though religion is important it does not affect women in assessing skilled attendance at birth (Antai, 2011).

2.6.7 Antenatal clinic visits

Research has established that pregnant women who do not go for the antenatal clinics have the tendency to not access the health facility for delivery (Vallières et al., 2013). Another study also suggests that it is not all the case that women who visit antenatal will deliver at the health facility (Rai, 2014). This conclusion notwithstanding, evidence suggests that women who visit the antenatal regularly have higher odds of delivering at the health facility than women who do not (Moyer & Mustafa, 2013).
2.6.8 Partner support

Partner support is an important determinant of where a woman delivers. Husbands giving their wives the opportunity to decide on their reproductive health has a significant association with utilisation of health facility (Speizer, Story, & Singh, 2014). Husbands having no formal education and low income have been identified as major factors affecting skilled delivery negatively (Gabrysch & Campbell, 2009).

2.6.9 Women's autonomy

The autonomy of a woman is when the woman decides on her own without having to subject it a man's opinion (Tarekegn, Lieberman, & Giedraitis, 2014). A woman’s autonomy in deciding her position in the household, financial independence and decision-making power has a long way to determine a woman's place of delivery (Baral, Lyons, Skinner, & Van Teijlingen, 2010).

In many countries, especially most developing countries such as Africa, most women do not have the autonomy to decide where they want to access health care. Most women still had to consult their husbands and mothers-in-law as to what should be done and where to go when they are pregnant. Most at times because they cannot oppose their decision the woman kotows to it whether she is comfortable with it or not (Shimazaki, Honda, Dulnuan, Chunanon, & Matsuyama, 2013). Furthermore, because in such communities' women lack access to resources such as agricultural land to farm and generate some income on their own they still depend on the man’s decision as to where they should seek medical attention (Shimazaki et al., 2013).
2.7 Health provider factors influencing utilisation of skilled delivery services

This section presents health provider factors that have been identified to influence the utilisation of skilled delivery services.

2.7.1 Availability of logistics and equipment

Over the years so many interventions have been put in place to support maternal health. However, other factors such as unavailability of logistics and equipment are militating against real improvement which when not tackled optimum health cannot be achieved (Speizer et al., 2014).

For this reason, an environment which is conducive to enable this materialize at every level of the health chain is of great importance. To achieve this optimal maternal and child health there should be infrastructure, well trained skilled attendant, adequate supplies, efficient and effective referral system and also a policy and regulations (Moyer, 2012).

However, developing countries like Africa have not seen much improvement in issues of maternal and child mortality and morbidity indicators because of lack of the requisite logistics and equipment to provide an environment which will enable access to quality obstetric care (Ensor et al., 2013). To help improve this indicator, most developing countries have begun adapting WHO guidelines which look at Pregnancy, Childbirth, Postpartum, and Newborn Care. This enables clinicians to provide optimal care for maternal and child health issues (Nyarko, 2018). Logistics challenges in most developing countries are vehicles to transport patient from the remotest areas to the next hospital (Sakeah et al., 2014). Even in a most developed nation where technology has advanced there are people in other parts of the country still experiencing barriers with logistics and equipment (Penfold, Harrison, Bell, & Fitzmaurice, 2007).
Another challenge is that there are few emergency obstetricians or midwives ready to deal with maternal issues during referral which also contributes to women in labour opting for unskilled attendants (Agaro et al., 2016).

Most of the developing countries have difficulties in their referring systems (Kim, Babcock, Barreix, & Bills, 2013). Meanwhile, most studies have concluded that for an improvement in maternal health and access to skilled attendant, there should be adequate staff, improving the referral system, educating expectant mothers of the importance of delivering at the health facility, providing in-service training to the staffs on new guideline to treating complications and referrals to help improve the utilisation of skilled attendant (Mesbah et al., 2013; Jaime-Pérez et al, 2015).

### 2.7.2 Cost of services

The cost of accessing health service has been viewed as one of the factors hindering most women from utilising skilled attendance. This includes transportation costs, the cost of the medications and cost of traveling and waiting for long hours to access service. Looking at these challenges or the cost burden involved in these, families with little income will find it difficult accessing the facility for delivery (Gabrysch & Campbell, 2009). This cost barrier could even force a family without the financial strength to self-medicate, posing a threat to the mother and the child's life. This can push most of these women who cannot afford to resort to Traditional Birth Attendants which is considered inexpensive (Nyarko, 2018). However, to promote maternal and child health and access to skilled delivery the government of Ghana implemented a policy of free delivery and free National Health Insurance to support pregnant women, but further research into the effectiveness of the initiative suggests that it has not removed the financial barriers that expectant women go through (Dalinjong, Wang, & Homer, 2018). The decision of women to deliver at home
is because they assume that it is comfortable calling the Traditional Birth Attendant to your home and also there will be no transportation cost and any delivery charges (Bazzano et al. 2008).

2.7.3 Availability of staff

The accessibility to skilled attendance also means that there should the availability of those that provide the services, they should not only be available but knowledgeable, efficient and effective in the service they deliver (Galal & Al-Gamal, 2014). There should be the availability of trained midwives and peripheral bodies resourced to provide optimal care to mothers (Mpembeni et al., 2007).

2.7.4 Staff attitude

The low patronage of skilled delivery can partly be attributed to the bad attitude of health providers discharging the services (Kabali, Gourbin, & De Brouwere, 2011). Additionally, it has been established that poor staff attitude is a major challenge to the realization of facility delivery (Esena & Sappor, 2013). This bad health provider attitude is predominantly in rural areas where there is only one Health Centre (Sakeah et al., 2014). It has been proven that women who receive a positive attitude from health providers during delivery have the potential of using and inviting others to use the health facility (Speizer et al., 2014).
2.7.5 Competency of staff

According to Bhutta et al., (2009) women always access or repeat care if they realize that the health provider is competent to take care of them. For example, in Malawi, the facility delivery improved tremendously because of attitudinal change of the health providers (Thorsen, Sundby, & Meguid, 2014). Evidence shows that in-service training and re-training of health providers to improve their competencies is the best intervention in maximizing facility delivery (Deller et al., 2015).

2.8 Geographic factors influencing utilisation of skilled delivery services

2.8.1 Location of facility

Access to skilled delivery can be hindered by the location of the health facility or skilled birth attendant (Gabrysch, Cousens, Cox, & Campbell, 2011). Numerous mothers in labour are still left without consideration because of physical and geographical accessibility (Esena & Sappor, 2013). Accordingly, numerous deliveries happen at home because of some elements associated with the community the facility is located (Dhakal, Van Teijlingen, Raja, & Dhakal, 2011). The reasons are numerous and understanding these variables is essential to ascertaining gaps that exist in research to enhance improvement in future (Moyer, 2012).

2.8.2 Transport system and Road network

A good road network is a significant element in the health service delivery system (Arthur, 2012). Improvement in transportation and roads can firmly impact maternal health results (Graham et al.,
2008), particularly in rural health deliveries (Kyei-Nimakoh et al., 2016). In rural areas, an absence of accessible roads to the next referral point is a major challenge and a contributing factor to women delivering at home (Ganyaglo & Hill, 2012). Therefore, developing a more reliable road network will protect women's health better than the existing one (Asweto, 2014). Rural roads are flooded when it is rains and difficult for a vehicle to use it even if a transportation system is available (Le et al., 2018).

In giving maternal health services, transportation and road infrastructure is key to helping in the utilisation of skilled delivery (Phiri et al., 2014). Distance to health services in many low-income countries can be a significant obstacle (Pell et al., 2013), especially in rural regions, and road are seldom accessible (Gabrysch et al., 2011). The choice to seek qualified skilled attendants is determined primarily by distance (Wilunda et al., 2015). Although low-usage factors differ, one of the main factors is that females who are farther away from health facilities have the likelihood of not using the health facility (Mwaliko et al., 2014). Access to a health facility can be a major determinant of using the health facility for care and bad road can hinder women from accessing health care (Segbedzi, 2017). Most women have to walk to the nearby health facility or had to be carried on a motorbike or in a tricycle. All these inconveniences prevent most women from delivering at the health facility (Gething et al., 2012). Evidence shows that majority (90%) of women in Ghana who have access to health facilities had to go through challenging situations to get to the facilities which sometimes prevent some of them from accessing it (Kumbani, Bjune, Chirwa, & Odland, 2013). However, those in rural communities are most affected since rural communities have unmotorable roads coupled with bad network communication and referral system (Gething et al., 2012). Bad road network and distance to the health facility is one of the factors identified in the 2014 Ghana Demographic Health Seavey as hindering the use of the
facility. The same report estimated that pregnant women travel 3-5 km to get to the nearest health facility (GDHS, 2014).

According to a study in Kenya, the nearest health facility is about 2km from the patients' home which makes accessing health care challenging (Feikin et al., 2009). In Tanzania, only 20% of those who live within the reach of 2km from the health facility access health care, 80% who like 2km away are not able to access health facility (Mpembeni et al., 2007). In a similar study conducted in Ghana, 45% of women who did not go through skilled delivery cited transportation challenges (Esena & Sappor, 2013). A study in Zambia also mentioned challenges such as high cost of transport, lack of vehicle and poor road network (Lerberg, Sundby, Jammeh, & Fretheim, 2014). In Nepal and Tanzania, about 25% of complications are attributed to the transportation challenge (Borghi et al., 2006). This same situation resulted in a policy where pregnant women in Nepal had their insurance policy covering their transportation to the facility (Borghi et al., 2006).

2.8.3 Cultural beliefs

Some socio-cultural beliefs ruin women's capacity to access maternal health services. For example, certain societies or cultures see pregnancy and delivery as a test for hardness and strength, which the woman needs to endure and this may deter her from delivering at a health facility (Henry et al., 2017). Different reasons exist that impact a woman's inclination for alternative care or home birth includes the utilisation of herbal medicines believed to speed up the delivery process and the flexibility to use the different delivery positions of choice (Munguambe et al., 2016). Cultural beliefs and practices impact a woman's capacity to pursue maternal health service particularly for women with first pregnancies (Yanagisawa, Oum, & Wakai, 2006).
2.8.4 Chapter Summary

The recent (2014) estimate for skilled birth attendance in Ghana (73%) is low compared to the WHO’s target of 90 percent by 2015. Literature has identified socio-demographic factors such as maternal age and education, parity, religious, occupation, socio-economic status, partner support, antenatal visit and woman’s autonomy as factors influencing utilisation of skilled delivery services. In addition, health services-related factors such as availability of logistics and equipment, cost of service, availability of staff, staff attitude and competency of staff were also identified. Moreover, geographical factors such as location of facility, transport system and road network and cultural beliefs. However, no published literature has been found on the subject pertaining to the East Akim Municipality. That was why this study sought to determine the factors that contribute to the utilisation of skilled delivery in the East Akim Municipality of the Eastern Region.
CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

The cross-sectional study design was employed in studying the factors influencing the utilisation of skilled delivery in the East Akim Municipal of the Eastern Region. This involves the use of the quantitative method of gathering data.

3.2 Study Area

East Akim Municipal is one of the twenty-six administrative districts in the Eastern region of Ghana. It covers a land area of 950 square kilometres. It is bordered to the North by Atiwa and Fanteakwa Districts, to the East by New Juabeng metropolis and Yilo Krobo District to the South by the Suhum Municipality and Ayensuano District, to the West by Denkyembour District and West Akim Municipality with 237 communities with Kibi as its administrative capital. It is about 56 kilometres from Koforidua the regional capital. It has a population of two hundred and three thousand four hundred and three (203,403) for 2018 (GSS, 2012).

There are eight (8) sub municipals in the East Akim municipal. All the 8 sub municipals have health facilities that provide antenatal and postnatal services. The municipality has four (4) public hospitals, four health centres, two clinics, two maternity homes and twenty-one functioning CHPS compounds. The hospitals include 2 public facilities, a Christian Health Association of Ghana (CHAG) facility (Hawa Saviour Memorial Hospital) and a private facility (Community Hospital - Kukurantumi). The two clinics, on the other hand, are SOS Children’s village clinic at Asiakwa and Cocoa Research Institute of Ghana clinic.
For this study, four health facilities with the largest number of postnatal and child welfare clinics attendances were selected. This included Kibi Government Hospital, New Tafo Government Hospital, Asiakwa Health Centre and Apedwa Health Centre (MOFA, 2010).

Figure 3.1: Geographical map of East Akim municipal showing the sub municipals

3.2.1 Kibi Government Hospital

Kibi Government hospital is the municipal hospital located in the Kibi sub municipal with a population of 32,998, Women in Fertile Age of 7920, and 1,320 for expected pregnancy (GSS, 2012). The hospital provides basic emergency obstetric care which includes ANC, delivery, postnatal care, and family planning.
3.2.2 New Tafo Government Hospital

New Tafo Government hospital serves a total population of 41,149, WIFA - 9,876, Expected pregnancy of 1,646 (GSS, 2012). The hospital provides basic emergency obstetric care which includes ANC, delivery, postnatal care, and family planning.

3.2.3 Asiakwa Health Centre

Asiakwa has a total population of 18,505. WIFA, 4,441 and expected pregnancy 740 (GSS, 2012). Services such as general medical and basic surgical care, ANC, postnatal and family planning are provided here. The facility is headed by a physician assistant, and 2 midwives at the maternity unit who provide ANC, postnatal and family planning services.

3.2.4 Apedwa Health Centre

Apedwa health centre is located in the Apedwa sub municipal of the East Akim municipal. It has a total population of 24,480, WIFA – 5,875 and an expected delivery of 979 as a target for the year 2018 (GSS, 2012). The facility is headed by a physician assistant and 2 midwives at the maternity unit. Services such as ANC, postnatal, and family planning are provided at the facility.

3.3 Study Population

The study population are post-natal mothers 18 years and above who gave consent to be part of the study.

3.4 Sampling

The study was carried out among post-natal women attending postnatal and/or child welfare clinics in two purposively selected Government hospitals and two health centers in the East Akim Municipal of the Eastern Region. The study took place between July 2018. The participants who met inclusion criteria and consent to be part of the study were selected using consecutive sampling
technique. In this sampling technique, any individual who met the inclusion criteria was interviewed at the various health facilities until the required sample size of the study was achieved.

3.5 Sample Size Determination

The sample was estimated by using the Cochran (1977) formula: 

\[ n = \frac{Z^2pq}{d^2} \]

Where \( n \) = the desired sample size

\( z = 95\% \) confidence interval (standard value 1.96)

\( p = \) the proportion of post-natal mothers who use skilled delivery

\( q = 1-p \)

\( d = \) degree of accuracy desired at 0.05

The proportion of skilled delivery in the Eastern Region according to the 2014 DHS report was 67.2\%. Therefore substituting, the sample size was computed as follows:

\[ n = \frac{(1.96)^2 \times (0.672) \times (0.328)}{(0.05)^2} \]

\[ n = 338.7 \]

A non-respondent rate of 4\% was factored in to give the required sample size of approximately 352.

3.6 Data Collection Tools and Techniques

Data were collected by administering structured questionnaires. The questionnaire comprised sections on socio-demographics and economics, the use of antenatal services and health service factors and reproductive history.
3.6.1 Socio-demographics and economic characteristics

This included maternal age (in completed years), marital status, highest maternal education level completed, religion, maternal occupation, maternal monthly income, highest paternal education level completed, and maternal occupation.

3.6.2 Antenatal services utilisation

This section included questions on ANC visit for last pregnancy, gestational age at first ANC contact, frequency of ANC contact and likelihood to deliver in a health facility with the next pregnancy.

3.6.3 Health service factors and reproductive history

This section included questions on history of obstetric complication, history of delivery complication, cost of delivery medication charges, cost of non-medical charges, perception of affordability of non-medical delivery related cost, distance to nearest health facility, means of transportation, availability of equipment with medication for treatment, confidence in a facility to deliver emergency services and attitude of health workers.

3.7 Informed consent

Reasons for conducting the study was explained to all respondents and informed consent obtained with the women signing or thumb printing a form. Respondents were told that they have the right not to participate in the study or opt-out during the study and their decision will be respected. Participants indicated their willingness to partake in the study by signing and thumb printing the form.
3.8 Data Processing and Analysis Plan

The data gathered was entered and cleaned with Stata version 15. Continuous variables were presented in means and standard deviation while categorical variables were in frequencies and percentages. Factors associated with skilled delivery were tested with a multivariate logistic regression test. Before the regression analysis was done, independent variables to be included in the subsequent regression analysis were selected using chi-square test. The level of significance was determined at p-value < 0.05. The significant variables were entered into the logistic regression. Two models were used. In the first model, only antenatal services utilisation and health service factors and reproductive history were entered as independent variables with skilled delivery as the dependent variable. In the second model, the significant factors from the first model were adjusted with significant sociodemographic and economic factors from the chi-square test. With logistic regression, assumptions including multicollinearity and tolerance between independent variables were tested. Multicollinearity was tested with the variance inflation factor (VIF). Independent variables with a VIF value of 10 were replaced with the other. Independent variables with tolerance of 0.2 were replaced with the other. The level of significance of the regression analysis was held at p-value < 0.05.

3.9 Study Variables

The variables of the study have been grouped into the dependent variable and independent variables.

3.9.1 Dependent variable

The dependent variable was the utilisation of skilled delivery services. The women who responded that they delivered at home, with a traditional birth attendant or a spiritual leader were categorised as having unskilled delivery. The women who delivered in a health facility including hospitals and health centres were categorised as skilled delivery.
### 3.3.2 Independent variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurement/categories</th>
<th>Variable type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socioeconomic and demographic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal age (in completed years)</td>
<td>18 – 29, 30 – 43</td>
<td>Norminal variable</td>
</tr>
<tr>
<td>Maternal educational level completed</td>
<td>No Formal education, Primary/JHS/Middle, SHS/SSS/Tec/Voc</td>
<td>Norminal variable</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Single, Married, Divorced, Co-habiting</td>
<td>Norminal variable</td>
</tr>
<tr>
<td>The educational level of partner completed</td>
<td>No formal education, Primary/JHS/Middle, SHS/SSS/Tec/Voc</td>
<td>Norminal variable</td>
</tr>
<tr>
<td>Maternal/ paternal employment status</td>
<td>Artisanal, Secretarial, Unemployed, Farming</td>
<td>Norminal variable</td>
</tr>
<tr>
<td>Religion</td>
<td>Islam, Traditional</td>
<td>Norminal variable</td>
</tr>
<tr>
<td>Maternal average monthly income</td>
<td>GH¢ &lt;250, GH¢250-500, GH¢501-760, GH¢761-1100, GH¢ &gt;1,100</td>
<td>Norminal variable</td>
</tr>
<tr>
<td>Utilisation of Antenatal Care during pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever attended ANC for last pregnancy</td>
<td>Yes, No</td>
<td>The nominal variable in the chi-square test</td>
</tr>
<tr>
<td>Age of pregnancy at first ANC visit</td>
<td>First trimester, Second trimester, Third trimester</td>
<td>The ordinal variable in the regression models</td>
</tr>
<tr>
<td></td>
<td>Reasons for attending ANC, For healthy baby, For healthy mother, For safe delivery, To avoid pregnancy complications</td>
<td></td>
</tr>
</tbody>
</table>
To avoid pregnancy and delivery complications
Was feeling sick at the time

Number ANC visits
At least 8 ANC visits were categorised as ‘Recommended’. Visits less than 8 were categorized as ‘Not recommended’ (WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience: Summary Highlights and Key Messages from the World Health Organization’s 2016 Global Recommendations for Routine Antenatal Care, 2018).

Health service factors and relevant reproductive history

<table>
<thead>
<tr>
<th>Factor</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of obstetric complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of delivery complications</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cost of delivery medication charges
Affordable
Moderate
Expensive

Affordability of non-medical delivery related cost
Affordable
Moderate
Expensive

Distance to the nearest health facility
< 1 km
1 – 2 km
3 - 4 km
≥ 5 km

Means of transport
On foot
Public transport (trotro)
Public transport (Taxi)

Availability of equipment with medication for the treatment
Highly equipped
Equipped
Inadequately/ Somewhat equipped

Confident in a health facility to deliver emergency services
Very confident
Confident
Somewhat confident

The attitude of health workers
Excellent attitude
Good attitude
Somewhat good attitude

The nominal variable in the chi-square test
The ordinal variable in the regression models
Nominal variable
3.10 Quality Control

To ensure quality, before data collection, three research assistants with a minimum qualification of West African Secondary School Certificate (WASSCE), were engaged to assist with questionnaire administration. They were trained in a two-day workshop on how to address issues during data collection. They were also trained on procedures required for efficient data collection, the techniques of questionnaire administration and ethical guidelines. The researcher monitored and supervised data collection to ensure research procedures were being adhered to by the research team. Each research assistant was assigned to one facility. Furthermore, all completed questionnaires from the field were reviewed daily for completeness.

3.11 Ethical consideration

Approval was sought from the Ethical Review Committee of Ghana Health Service (GHS-ERC083/12/17). Also, permission was sought from the Municipal Chief Executive (MCE), the MDHS of East Akim health directorate, all facility heads and maternity in-charges of all the facilities selected for the study. The reasons for conducting the study were clearly explained to all respondents and consent obtained. Respondents were told that they have the right not to participate in the study or opt-out during the study and their decision will be respected. Privacy and confidentiality were ensured by not asking sensitive questions that will inflict any emotional injury on respondents. Respondents were assured of anonymity. To ensure this, identification codes were used to disguise a respondent's original identity. Data was secured with a password on a computer. Completed questionnaires will be burnt after being kept under lock and key for five years.
CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic characteristics of respondents

This chapter presents the findings of the study. This comprises socio-demographic characteristics of respondents, the proportion of postnatal women involved in skilled delivery and factors that influence the utilisation of skilled delivery.

A total of 372 respondents were recruited into the study and 352 of them responded to the questionnaire administered, giving a response rate of 94.6%. Therefore, the analysis is based on a sample size of 352. The mean age of respondents was 27.7±0.4 years with a majority of them (51.8%) between 18 -29 years old. The majority (44.3%) of the women were married. With regard to educational background, 69.9 % had attained primary/JHS/Middle school. More than three-quarters of respondents were employed with 67.6% engaged in artisanal services such as hairdressing, dressmaking, and catering. The majority (92.9 %) professed the Christian faith. The results showed that 57.9 % of respondents earned an average monthly income below GH¢250.00 (Table 4.1).
### Table 4.1 Socio-demographic characteristics of respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency (N=352)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong>&lt;sup&gt;a&lt;/sup&gt; (Mean ± SD Years)</td>
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</tr>
<tr>
<td>18 – 29</td>
<td>174</td>
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<td>30 – 43</td>
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<td><strong>Maternal educational level completed</strong></td>
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<td><strong>Maternal employment status</strong></td>
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<td>Farming</td>
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<td>GH¢501-760</td>
<td>20</td>
<td>5.7</td>
</tr>
<tr>
<td>GH¢761-1100</td>
<td>25</td>
<td>7.1</td>
</tr>
<tr>
<td>GH¢ &gt;1,100</td>
<td>20</td>
<td>5.7</td>
</tr>
</tbody>
</table>
4.2 Utilisation of delivery services

4.2.1 Skilled delivery

The results of this study revealed that 85.2% of respondents had skilled delivery (delivered at a health facility).

![Utilisation of skilled delivery](image)

**Figure : 3 Utilisation of skilled delivery**

4.2.2 Utilisation of Antenatal Care during pregnancy

More than half of respondents (57.6%) accessed ANC services at a health facility. The majority of respondents (58.6%) attended ANC during their first trimester. With respect to the number of times respondents had attended ANC before delivery, most (51.2%) achieved the recommended ≥ 8 visits during pregnancy. Most respondents cited the want of a healthy baby (46.6%) and healthy mother (22.9%) as major reasons for attending ANC. When respondents were asked of the likelihood that they would deliver at a health facility during a subsequent pregnancy, 88.1% cited
that they were likely and the majority of the participants (61.1%) reported a history of pregnancy including pre-eclampsia, antepartum haemorrhage and maternal anaemia.

About a third of respondents reported delivery complications; which were mainly retained placenta (17.3%) and obstructed labour (10.2%) (Table 4.4).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency (N = 326)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever attended ANC for last pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>328</td>
<td>93.2</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>6.8</td>
</tr>
<tr>
<td>If yes where did you attend ANC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>134</td>
<td>40.9</td>
</tr>
<tr>
<td>Health center</td>
<td>189</td>
<td>57.6</td>
</tr>
<tr>
<td>CHPS compound</td>
<td>5</td>
<td>1.5</td>
</tr>
<tr>
<td>Age of pregnancy at first ANC visit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First trimester</td>
<td>192</td>
<td>58.5</td>
</tr>
<tr>
<td>Second trimester</td>
<td>123</td>
<td>37.5</td>
</tr>
<tr>
<td>Third trimester</td>
<td>13</td>
<td>4.0</td>
</tr>
<tr>
<td>Reasons for attending ANC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For healthy baby</td>
<td>153</td>
<td>46.6</td>
</tr>
<tr>
<td>For healthy mother</td>
<td>75</td>
<td>22.9</td>
</tr>
<tr>
<td>For safe delivery</td>
<td>33</td>
<td>10.1</td>
</tr>
<tr>
<td>To avoid pregnancy complications</td>
<td>49</td>
<td>14.9</td>
</tr>
<tr>
<td>To avoid pregnancy and delivery complications</td>
<td>15</td>
<td>4.6</td>
</tr>
<tr>
<td>Was feeling sick at the time</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Number ANC visits (n=328)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended</td>
<td>232</td>
<td>70.7</td>
</tr>
<tr>
<td>Not recommended</td>
<td>96</td>
<td>29.3</td>
</tr>
<tr>
<td>Likelihood to deliver at the health facility during a subsequent pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>305</td>
<td>88.2</td>
</tr>
<tr>
<td>Not sure</td>
<td>28</td>
<td>8.1</td>
</tr>
<tr>
<td>Not likely</td>
<td>18</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Table 4.4: Health service factors and relevant reproductive history
<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency (N=352)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History of obstetric complications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes&lt;sup&gt;a&lt;/sup&gt;</td>
<td>215</td>
<td>61.1</td>
</tr>
<tr>
<td>No</td>
<td>137</td>
<td>38.9</td>
</tr>
<tr>
<td><strong>History of delivery complications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes&lt;sup&gt;b&lt;/sup&gt;</td>
<td>103</td>
<td>29.3</td>
</tr>
<tr>
<td>No</td>
<td>249</td>
<td>70.7</td>
</tr>
<tr>
<td><strong>Cost of delivery medication charges</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affordable</td>
<td>285</td>
<td>80.9</td>
</tr>
<tr>
<td>Moderate</td>
<td>37</td>
<td>10.5</td>
</tr>
<tr>
<td>Expensive</td>
<td>30</td>
<td>8.6</td>
</tr>
<tr>
<td><strong>Affordability of non-medical delivery related cost</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affordable</td>
<td>227</td>
<td>64.5</td>
</tr>
<tr>
<td>Moderate</td>
<td>86</td>
<td>24.4</td>
</tr>
<tr>
<td>Expensive</td>
<td>39</td>
<td>11.1</td>
</tr>
<tr>
<td><strong>Distance to the nearest health facility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1km</td>
<td>57</td>
<td>16.2</td>
</tr>
<tr>
<td>1-2km</td>
<td>84</td>
<td>23.9</td>
</tr>
<tr>
<td>3-4km</td>
<td>153</td>
<td>43.5</td>
</tr>
<tr>
<td>≥5km</td>
<td>58</td>
<td>16.4</td>
</tr>
<tr>
<td><strong>Means of transport</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On foot</td>
<td>156</td>
<td>44.3</td>
</tr>
<tr>
<td>Public transport (trotro)</td>
<td>102</td>
<td>29.0</td>
</tr>
<tr>
<td>Public transport (Taxi)</td>
<td>94</td>
<td>26.7</td>
</tr>
</tbody>
</table>

Table 4.4 cont’d: Health service factors and relevant reproductive history
<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Availability of equipment and medication for the treatment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highly equipped</td>
<td>196</td>
<td>55.7</td>
</tr>
<tr>
<td>Equipped</td>
<td>127</td>
<td>36.1</td>
</tr>
<tr>
<td>Inadequately/ Somewhat equipped</td>
<td>29</td>
<td>8.2</td>
</tr>
<tr>
<td><strong>Confident in a health facility to deliver emergency services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very confident</td>
<td>187</td>
<td>53.1</td>
</tr>
<tr>
<td>Confident</td>
<td>146</td>
<td>41.5</td>
</tr>
<tr>
<td>Somewhat confident</td>
<td>19</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>The attitude of health workers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent attitude</td>
<td>165</td>
<td>46.9</td>
</tr>
<tr>
<td>Good attitude</td>
<td>170</td>
<td>48.3</td>
</tr>
<tr>
<td>Somewhat good attitude</td>
<td>17</td>
<td>4.8</td>
</tr>
</tbody>
</table>

*Includes pre-eclampsia, antepartum haemorrhage, and maternal anaemia

*b Includes retained placenta and obstructed labour

### 4.3 Variable selection for follow-up analysis

Gestational age at first ANC contact, history of pregnancy complications, distance to the nearest health facility, means of transportation, availability of equipment with medication for the treatment and confident in a health facility to deliver emergency services were found to be significant in the bivariate analysis. Marital status, the educational level of partner/spouse, maternal employment status, employment status of partner/spouse and average monthly income were also significant.

These factors were selected.
<table>
<thead>
<tr>
<th>Variable</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.561</td>
</tr>
<tr>
<td>The educational level of respondents</td>
<td>0.073</td>
</tr>
<tr>
<td>Marital status</td>
<td>0.003*</td>
</tr>
<tr>
<td>The educational level of partner/spouse</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>Maternal employment status</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>Employment status of partner/spouse</td>
<td>0.015*</td>
</tr>
<tr>
<td>Religion</td>
<td>0.070</td>
</tr>
<tr>
<td>Average monthly income</td>
<td>0.001*</td>
</tr>
<tr>
<td>ANC attendance</td>
<td>0.001*</td>
</tr>
<tr>
<td>Gestational age at first ANC contact</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>History of pregnancy complications</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>History of delivery complications</td>
<td>0.056</td>
</tr>
<tr>
<td>Distance to the nearest health facility</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>Affordability of delivery medication charges</td>
<td>0.06</td>
</tr>
<tr>
<td>Affordability of non-medical delivery-related costs</td>
<td>0.07</td>
</tr>
<tr>
<td>Means of transportation</td>
<td>0.003*</td>
</tr>
<tr>
<td>Availability of equipment and medication for the treatment</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>Confident in a health facility to deliver emergency services</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>Likelihood to deliver at the health facility during a subsequent pregnancy</td>
<td>0.165</td>
</tr>
</tbody>
</table>

*a Dependent variable is a skilled delivery  
*b Significance is held at p < 0.05
4.4 Logistic regression analysis of factors associated with skilled delivery

In the simple binary logistic regression, a history of obstetric complications, availability of equipment with medication for treatment, and age of pregnancy at first ANC visit were the variables that were significant. Women with no history of obstetric complications had lower odds (OR= 0.20, 95%CI: 0.09 – 5.91, p-value = 0.002) of having skilled delivery as compared to those who had history of obstetric complications. The women who first attended antenatal clinic in the first trimester also had lower odds of having skilled delivery as compared to those who first attended in the third trimester (OR= 0.18, 95% CI: 0.06 -0.56, p-value = 0.003). On the other hand, the women who responded that the health facility that they attended were highly equipped (OR= 10.9, 95%CI: 2.37 -50.29, p-value = 0.002) and equipped (OR = 42.3%, 95%CI: 8.4 -222.8, p-value < 0.001) in terms of availability of equipment with medication for treatment of emergency conditions had higher odds of having skilled delivery as compared to those who said their facilities were inadequately/somewhat equipped.
Table 4.6: Simple binary logistic regression factors associated with utilisation of skilled delivery

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR (95% CI)</th>
<th>p-value&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever attended ANC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.4 (0.90 – 1.60)</td>
<td>0.19</td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>History of obstetric complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.2 (0.09 – 5.91)</td>
<td>0.002*</td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Distance to the nearest health facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1 km</td>
<td>0.7 (0.14 – 3.37)</td>
<td>0.63</td>
</tr>
<tr>
<td>1 – 2 km</td>
<td>0.8 (0.18 – 3.67)</td>
<td>0.78</td>
</tr>
<tr>
<td>3 – 4 km</td>
<td>4.5 (0.8 – 24.0)</td>
<td>0.79</td>
</tr>
<tr>
<td>≥ 5 km</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Means of transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On foot</td>
<td>3.8 (0.76 – 19.4)</td>
<td>0.1</td>
</tr>
<tr>
<td>Public transport (trotro)</td>
<td>0.03 (0.17 – 2.29)</td>
<td>0.5</td>
</tr>
<tr>
<td>Public transport (taxi)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Confident in a health facility to deliver emergency services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very confident</td>
<td>5.03 (0.77 – 32.8)</td>
<td>0.091</td>
</tr>
<tr>
<td>Confident</td>
<td>0.695 (0.13 – 3.72)</td>
<td>0.67</td>
</tr>
<tr>
<td>Inadequate / Somewhat confident</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Availability of equipment and medication for the treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highly equipped</td>
<td>10.9 (2.37 -50.29)</td>
<td>0.002*</td>
</tr>
<tr>
<td>Equipped</td>
<td>42.3 (8.4 – 222.8)</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>Inadequately/somewhat equipped</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Age of pregnancy at first ANC visit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First trimester</td>
<td>018 (0.06 – 0.56)</td>
<td>0.003*</td>
</tr>
<tr>
<td>Second trimester</td>
<td>0.08 (0.01 – 21.7)</td>
<td>0.99</td>
</tr>
<tr>
<td>Third trimester</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> Dependent variable is skilled delivery
<sup>2</sup> p-value associated with crude logistic regression
* Significance is at p < 0.05
After adjusting for socioeconomic and demographic factors including marital status, partner educational level, maternal employment, paternal employment, and average monthly income, history of obstetric history and availability of equipment with medication for the treatment of emergency conditions were found to be significant. Women with no history of obstetric complications had lower odd (OR= 0.04, 95%CI: 0.008 – 0.2, p < 0.001) of utilising skilled delivery as compared to those who had a history of obstetric complications. On the contrary, women who reported that the health facility that they attended were highly equipped (OR= 14.6, 95%CI (2.03 -104.2, p-value = 0.008) and equipped (OR = 41.7, 95%CI: 5.1 -342, p-value= 0.001) had a high odds of having skilled delivery as compared to those who reported inadequately/somewhat equipped.
<table>
<thead>
<tr>
<th>Variable</th>
<th>aOR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History of obstetric complication</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0.04 (0.008 – 0.2)</td>
<td>&lt; 0.001*</td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Availability of equipment and medication for the treatment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highly equipped</td>
<td>14.6 (2.03 – 104.2)</td>
<td>0.008*</td>
</tr>
<tr>
<td>Equipped</td>
<td>41.7 (5.1 – 342)</td>
<td>0.001*</td>
</tr>
<tr>
<td>Inadequately/somewhat equipped</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Age of pregnancy at first ANC visit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First trimester</td>
<td>2.8 (0.56 – 14.2)</td>
<td>0.21</td>
</tr>
<tr>
<td>Second trimester</td>
<td>0.26 (0.08 – 0.05)</td>
<td>0.99</td>
</tr>
<tr>
<td>Third trimester</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

*Significant is at p < 0.05

1 The dependent variable is skilled delivery
2 p-value associated with adjusted logistic regression. The multivariate logistic regression model was adjusted with marital status, partner educational level, maternal employment, paternal employment, and average monthly income
CHAPTER FIVE

5.0 DISCUSSION

This study sought to determine the factors that contribute to the utilisation of skilled delivery in the East Akim Municipal of the Eastern Region.

5.1 Prevalence of skilled delivery utilisation

In this study, the estimated proportion of women who utilised skilled delivery in the East Akim Municipality is 85.2%. The prevalence in the current study is higher than those of the Eastern region and national proportions of 69.1% and 74% respectively (GDHS, 2014). The prevalence in this study was higher than the national prevalence of 79% and 77.4% reported in the Eastern Region in the 2017 Ghana Maternal Health Survey (Ghana Maternal Health Survey 2017 Key Indicators, 2018). This might be because the current study involved a relatively small number of participants. Also, the study was conducted at four health facilities. The result might be different if the study were conducted in a community which might comprise both institution and non-institution attending mothers.

The prevalence in this study was higher than 79.6% that was reported in Akatsi South District of the Volta region (Heloo, 2018). This might reflect a wider regional inequality. In the Volta Region, the prevalence of skilled delivery was 66.3% whereas the Eastern region was 69.1% (GDHS, 2014).
5.2 Factors influencing the utilisation of skilled delivery

In this study, the history of obstetric complications, availability of equipment with medication for emergency treatment and the time of first ANC contact were significantly associated with skilled birth delivery.

This study’s finding of an association between history of obstetric complications and utilisation of skilled delivery confirms earlier findings from Ghana and elsewhere. For instance, an analysis based on the 2008 DHS reported that the women with a history of obstetric complication had a higher odds of utilising skilled birth delivery as compared to those who did not (Amoakoh-Coleman et al., 2015). Furthermore, evidence from Ethiopia found that the women who had a history of obstetric complications had a higher odd of utilising skilled birth delivery (Belda & Gebremariam, 2016). Similar results were reported among women in Ethiopia (Kahsay, Hiluf, Shamie, Tadesse, & Bazzano, 2019), and Shanghai, China (Changning District Center Hospital and Punan Hospital) (Zhao et al., 2012). All these studies are in agreement with the current study. This might be because of the fear that previous obstetric complications have the tendency to reoccur. Prior obstetric conditions that were mentioned in this study included preeclampsia, maternal anaemia, and antepartum haemorrhage. Women with prior preeclampsia have been reported to be at a higher risk for new-onset of pre-eclampsia (English, Kenny, & Mccarthy, 2015). Prior antepartum haemorrhage has been shown to be a predictor of adverse pregnancy and birth outcomes including preeclampsia, stillbirth and low birth weight (Walfish, Neuman, & Wlody, 2009). Choosing skilled birth delivery might help women to avoid complications that might arise in the current pregnancy.
Women’s perception of availability of equipment with medication for emergency treatment might give women the confidence to deliver in the facility. Among mothers in northern Nigeria, it was reported that availability of equipment was significantly associated with skilled birth delivery (Adewemimo, Msuya, Olaniyan, & Adegoke, 2014). Similar results were also reported among 1,796 mothers randomly selected from 27 rural communities in the Tigray region, Ethiopia (Fisscha, Berhane, Worku, & Terefe, 2017). These studies agree with the current study.

5.1 Strengths and Limitations

5.1.1 Strengths

The study has generated knowledge on the factors contributing to the utilisation of skilled delivery in the East Akim Municipality of the Eastern region of Ghana which could inform policy at various levels.

5.1.2 Limitations

The study involves a small number of participants and might be not representative of the municipality. The study took place in a health facility. This may have led to selection bias and the result may be different from potential results from a community-based survey. The study is a cross sectional one and causation cannot be assumed. There might be residual confounders even after statistical adjustment.
CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The study found the prevalence utilisation of skilled delivery in the East Akim Municipality to be high (85.2%). After adjusting for marital status, partner educational level, maternal employment, paternal employment, and average monthly income, history of obstetric complication and availability of equipment with medication for the treatment were significantly associated with skilled birth delivery.

6.2 Recommendation

Based on the findings of the study, the following recommendations were made

1. The Ghana Health Service should ensure the availability of equipment for health facilities as this might influence the maternal perception of utilisation of skilled delivery.

2. Efforts to ensure that every pregnant woman in the Akim Municipality possesses a valid NHIS card will further increase skilled delivery rate.

3. A wider study on male involvement in institutional delivery uptake should be conducted to understand other factors that are not addressed in this study.
REFERENCES


Fisseha, G., Berhane, Y., Worku, A., & Terefe, W. (2017). Distance from health facility and


GDHS. (2014). *key indicators. Ghana Demographic Health Survey.*


Kumbani, L., Bjune, G., Chirwa, E., & Odland, J. Ø. (2013). Why some women fail to give birth


APPENDICES

APPENDIX I

QUESTIONNAIRE

Section A: Demographic data of respondents

1. How old are you on your last birthday? ................................ years

2. What is your marital status?
   1. Single [ ]
   2. Married [ ]
   3. Divorced [ ]
   4. Separated [ ]
   5. Widowed [ ]
   6. Cohabitation [ ]

3. What is your level of education?
   1. None [ ]
   2. J.H.S/Middle [ ]
   3. S.H.S/ SSS/Tech/Voc [ ]
   4. Tertiary [ ]

4. What is your Religious Affiliation?
   1. Christian [ ]
   2. Islam [ ]
   3. Traditional [ ]
   4. Other (Please specify) ……………………………………………………………

5. What is your occupation?
1. Formal [ ]
2. Informal [ ]

6. What is your average monthly income?
   1. Below GH₵ 250 [ ]
   2. GH₵ 250 – GH₵ 500 [ ]
   3. GH₵ 510 – GH₵ 760 [ ]
   4. GH₵ 770 – GH₵ 1,100 [ ]
   5. Above GH₵ 1,100 [ ]

7 i. How many children do you have?
   1. None [ ]
   2. 1 – 2 [ ]
   3. 3 – 4 [ ]
   4. 5 and above. [ ]

7 ii. How many of your children were delivered at the hospital/Health center/CPHS Compound
   1. None [ ]
   2. 1 – 2 [ ]
   3. 3 – 4 [ ]
   4. 5 and above. [ ]

Section B: Knowledge of Skilled delivery

8 i. Have you heard about skilled delivery? Yes [ ] No [ ]

8 ii. If yes, where did you first hear of skilled delivery?

(You can tick as many as apply to you)

1. Media [ ]
2. Spouse [ ]
3. Relatives [ ]
4. Friends [ ]
5. Health provider [ ]
6. Others, Please (specify) .................................................................

Section C: The factors that influence the use of antenatal care services.

11. Where did you attend antenatal care?
   1. Hospital [ ]
   2. Health centre [ ]
   3. CHPS Compound [ ]
   4. TBA/Spiritual leader/Home [ ]

12. Why did you attend ANC? (You can tick as many as apply to you)
   1. For healthy baby [ ]
   2. For healthy mother [ ]
   3. For safe delivery [ ]

13. Where did you deliver your last child?
   1. Hospital [ ]
   2. Health centre [ ]
   3. CHPS Compound [ ]
   4. TBA/Spiritual leader/Home [ ]

Section D: To determine the barriers to the utilization of skilled delivery.

14. Are there barriers to the utilization of skilled delivery? Yes [ ] No [ ]
15. a. If yes which of the following serves as a barrier to the utilization of skilled delivery at a health facility?
   1. Affordability [ ]
   2. Cheap [ ]
   3. Moderate [ ]
   4. Expensive [ ]

15 b. Knowledge of the importance of delivering at health facility. High [ ] Low [ ]

15 c. Distance to Antenatal Care Center (ANC). Close [ ] Far [ ]

15 d. Information heard through the media Yes [ ] No [ ]

15 e. History of obstetric complications
   1. Eclampsia [ ]
   2. Anti-partum Hemorrhage [ ]
   3. Pregnancy induced Hypertension [ ]

15 f. Availability of logistics Available [ ] unavailable [ ]

15 g. Attitude of health workers Good [ ] Bad [ ]

16. How much do you spend on transportation to acquire services of skilled delivery?
   1. Below GH¢ 20 [ ]
   2. GH¢ 20 – GH¢ 40 [ ]
   3. GH¢ 50 – GH¢ 70 [ ]
   4. GH¢ 80 – GH¢ 100 [ ]
   5. Above GH¢ 100 [ ]

17. Do health workers attend to you immediately? Yes [ ] No [ ]

18. Can number of deliveries a mother had in a lifetime influence the choice of delivery practice? Yes [ ] b. No [ ]
19. Can misconceptions about ANC services lead to low utilization of skilled delivery?

Yes [ ]   No [ ]

Thank you.
APPENDIX 2: CONSENT FORM

**Title of research:** Factors influencing utilization of skilled delivery in the East Akim Municipal of the Eastern Region

**Department:** Population, Family, and Reproductive Health (PFRH)

**Email:** bbeccabantey@gmail.com

**Introduction:**

My name is Rebecca Bantey and I am a graduate student of the School of Public Health, University of Ghana, Legon, Accra. This questionnaire is for a survey to acquire data for my MPH research on the topic: “Factors Influencing Utilization of Skilled Delivery in the East Akim Municipal of the Eastern Region”. The study has been approved by the Ethical Review Committee of Ghana Health Service.

**Purpose of the study**

The study aims at finding out the factors influencing utilization of skilled delivery in the East Akim Municipality, Eastern Region.

**Privacy/ Confidentiality**

To hide your identity and prevent anyone from knowing what you said, your name will not be written on the questionnaire and your name will not appear in any report. Also, information obtained would be used purely for academic purposes and treated with absolute confidentiality. Please tick as appropriate. Thank you for your time.
Voluntary Withdrawal

Participation in this study is strictly voluntary. Thus, you are at liberty to withdraw from the study at any time. However, your answers are greatly needed to help this research meet its objectives.

There will be no pressure on individuals to participate as respondents.

Compensation

No incentives will be provided to you for participating in this study.

Statement of consent

I ………………………………………………………………, declare that the purpose, procedures to be followed, risks and benefits of the study have been read or explained to me and every question(s) have been answered to my satisfaction. I hereby give my consent to participate in this study.

Signature/Thumbprint of participant…………………………….. Date……………………………..

Statement by the Researcher

I, the undersigned, have explained this consent form to the subject in the language she understands, information regarding this study. I agree to answer any future questions concerning the study and also adhere to the approved protocol.

Signature……………………………………………..Date……………………………..
The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

<table>
<thead>
<tr>
<th>GHS-ERC Number</th>
<th>GHS-ERC083/12/17</th>
</tr>
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<tbody>
<tr>
<td>Project Title</td>
<td>Factors Influencing Utilization of Skilled Delivery in the East Akim Municipal of the Eastern Region</td>
</tr>
<tr>
<td>Approval Date</td>
<td>30th July, 2018</td>
</tr>
<tr>
<td>Expiry Date</td>
<td>29th July, 2019</td>
</tr>
<tr>
<td>GHS-ERC Decision</td>
<td>Approved</td>
</tr>
</tbody>
</table>

This approval requires the following from the Principal Investigator:

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED

DR. CYNTHIA BANNERMAN
(GHS-ERC CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra