

Effect of National Health Insurance Holding on the Choice of Health Facility for Childbirth in Ghana

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Abstract: Maternal and child mortalities are among major health problems facing developing countries such as Ghana. Most of these deaths can be avoided by utilization of maternity health care services. The study examines the effect of health insurance holding and other socioeconomic and demographic factors on the choice of health facility for childbirth in Ghana. The study used data from the 2008 Ghana Demographic and Health survey. Data were analyzed for descriptive statistics as well as a Multinomial Logistic Regression for identification of factors that influence delivery in health facility. The study results have shown that, holding of health insurance and wealth significantly influences expectant mother's decision to use government health facilities for childbirth. Also, the study revealed considerable variations in region and between rural and urban utilization of this services in Ghana. It is recommended that in order to improve the utilization of health facility for childbirth services and hence maternal health care utilization, there is the need to improve public awareness and efforts should also be taking by policy makers to integrate the private sector properly into the National Health Insurance scheme. Policy should also target mothers who have had the experience of child birth on the need to use health care facility services for each pregnancy. The government and other service providers (NGOs, religious institutions and private providers) may endeavor to improve on the distribution of health facilities, human resources, good roads and necessary infrastructure among other things in order to facilitate easy access to health care providers especially for rural dwellers.

Keywords: Maternal Mortality, National Health Insurance, Ghana, Childbirth and Health Facility

1. Background

Pregnancy and childbirth is impossible to be separated from women's lives. While this is ordinarily a period of pride and joy, it is associated with pain, disability and even death for too many women particularly in developing countries. Most of these deaths and disabilities can be prevented through access to and utilization of quality Maternal Healthcare Services (MHCS) as evidenced by many studies (Bhatia, 1993; Babalola and Fatusi, 2009).

The United Nations Millennium Development Goal 5 (MDG 5) seeks to reduce maternal mortality by three-quarters and achieve universal access to reproductive health by 2015 (UN, 2011). Achieving this goal has been very slow in most developing countries and most of these countries are still far from attaining the target.

Maternal mortality claimed the lives of an estimated 122,275 women in sub-Saharan Africa in 2011, representing nearly half (44.7%) of worldwide burden that year (Lozano et al., 2011). Available health statistics from the World Health Organization indicate that the number of childbirth related deaths in Ghana between 2011 and 2012 was 2,700. The Northern Region of Ghana recorded the highest number of maternal mortality-an estimated 250 women died between 2011 and 2012. Given Ghana's current mortality ratio of 350 per 100,000 live births, the Ghana Health Service (GHS) hopes to reduce the maternal death rate to about 150 per 100,000 live births. Excessive bleeding, generalized infections, complications due to hypertension and obstructed labour are classified as the root causes of the maternal mortality in Ghana (GHS, 2012). A large proportion of these deaths could be prevented through timely and appropriate interventions such as antenatal care, delivery and postnatal

care (Nketiah and Sagoe, 2009).

The barrier to the utilization of maternal health services in Ghana is the lack of affordability and accessibility of the health care system as reported by the Initiative for Maternal Mortality Programme Assessment (IMMPACT) in 2005. Another limitation to the utilization of maternal health services is the inadequate number and poor distribution of midwives who provide skilled and supervised deliveries at various health facilities (GHS, 2010).

A number of guidelines, plans and policy documents have been developed to improve maternal health utilization in Ghana. In September 2003, the policy of exempting users from delivery fees was introduced in the four most deprived regions of the country; Central, Upper East, Upper West and the Northern regions and in April 2005, the policy was extended to the remaining six regions of the country. The aim of the policy was to reduce the financial barriers to using maternity services, which includes the choice of place for childbirth. Recently, the Prevention of Mother to Child Transmission (PMTCT) Scale-up Plan for 2011 – 2015 was finalized in collaboration with UNICEF and Ghana Aids Commission (GAC). The National Aids Control Programme (NACP) collaborated with the Reproductive and Child Health (RCH) department to also review policy guidelines on PMTCT in line with the new WHO recommendations (GHS, 2010).

During the 1970s and the early 1980s, persistent budgetary constraints, deteriorating health infrastructure, falling standards of healthcare, coupled with massive emigration of healthcare practitioners, compelled the government to implement a cost recovery regime, or *cash-and carry* system of payment, as part of its IMF- and World Bank-sponsored Structural Adjustment Programs [SAPs] (Mensah, Oppong-Koranteng, and Fremphah-Yeboah, 2006). In 1985, the government revoked the Hospital Fees Regulation, 1963, (LI 1277) and replaced it with the Hospital Fees Regulation, 1985, (LI 1313) which mandated full cost recovery for health service delivery in Ghana (Atim et al, 2001). The concept was to afford an increase in resources to health care facilities which would allow them to expand and upgrade their services. It was also meant to improve access to health care and reduce unnecessary visits by patients who would abuse the system because it was free.

There are indications that the *cash-and-carry* system has undermined access to, and utilization of health services in the country. For instance, research shows that under the system, many low-income households in the country regularly postpone medical treatment, resort to self-treatment, or use traditional medicine provided by unregulated healers, spiritualist and itinerant drug vendors (Oppong, 2001). Atim et al. (2001) described the “cash and carry” as a “stinking and dehumanizing” system because patients who did not have the ability to pay for medical service were turned away from hospital only to die at home.

A Core Welfare Indicator Questionnaire survey conducted by the Ghana Statistical Services (GSS) in 2003 indicated that between 1997 and 2003, the percentage of people stating that they had access to a health facility increased from 37 per

cent to 58 percent. The 2004 Ghana Demographic and Health Survey (GDHS) gave the following health status indicators: infant mortality rate: 68 per 1000 live births; under 5 mortality rate: 112 per 1000 live births; maternal mortality: 540 per 100, 000 live births and life expectancy: 57.2 years. Malaria remains the most frequently reported cause of morbidity and a major cause of childhood mortality. Other frequently reported diseases are diarrhoea, acute respiratory infections, skin diseases, pregnancy related complications, anaemia and malnutrition (GSS, 2005). It is against the background of these problems that in 2003, the Government of Ghana established the National Health Insurance Scheme (NHIS), with the aim of making healthcare readily available and more affordable to Ghanaians. It is envisaged that the NHIS will eventually replace the *cash-and-carry* system throughout the country.

2. Problem Statement

Maternal mortality still remains a major global public health concern. Every day, approximately 1000 women die from preventable causes related to pregnancy and childbirth of which, 99% occur in developing countries and higher in rural areas and among poorer and less educated communities (WHO, 2013).

Despite a significant reduction in the number of maternal deaths – from an estimated 543 000 in 1990 to 287 000 in 2010 globally, the rate of decline is still very slow to achieve the relevant MDG5 target between 1990 and 2015. The global rate of decline is 3.1% per annum, with lower rates recorded in the WHO African Region (WHO, 2013).

To reduce the number of maternal deaths, women need access to good-quality reproductive-health care and effective interventions. In 2008, 63% of women aged 15–49 years who were married or in a consensual union were using some form of contraception, while 11% wanted to stop or postpone childbearing but were not using contraception (World Health Statistics, 2013). The proportion of women receiving antenatal care at least once during pregnancy was about 81% for the period 2005–2011, but for the recommended minimum of four visits or more, the corresponding figure drops to around 55% and the proportion of births attended by skilled personnel in Africa still remains less than 50% (World Health Statistics, 2013).

In Ghana, the choice of place for childbirth normally occurs in two places- home or health care facility/institution. Institutional childbirth is believed to be safer than home delivery as the expectant mother is delivered under the supervision of medical professionals who are capable of handling complications of any kind. Though the proportion of births attended by a skilled health professional and delivered in a health facility was 52.2% in 2011, indicating an improvement from the 45.6% in 2009 and 49.5% in 2010, there have been wide inter-regional variations (GHS, 2011). The proportions of births that occur at home still remain significant and skilled health professionals attend very few births especially in rural settlements of Ghana.

The choice of place for childbirth is being influenced by a number of factors such as socioeconomic factors, demographical factors, geographical factors and perceived quality of health care delivery services. For instance, in some communities, it is regarded a bad omen if a woman is delivered via caesarian section, hence the choice of home delivery.

A number of policies and programmes have been developed to improve maternal health care utilization in Ghana. Examples are the Safe Motherhood Programme which was launched in 1993; the NHIS which was launched in 2003 to abolish the cash-and-carry system and the most recent one being the MDG5 Accelerated Framework (MAF) developed by the MOH to improve the country's maternal health and also assist in attaining the MDG5 target. Despite all these policies to improve institutional childbirth and reduced maternal mortality, much has not been achieved. Institutional deliveries attended to by skilled and trained health workers prevail at 49.5%, although 93.3% of pregnant women attend antenatal care (ANC) at least once. The perceived reasons for the poor utilization of maternity services especially institutional delivery are; inadequate access to maternity services, perceived poor quality of services in health facilities and cultural barriers with a preference to Traditional Birth Attendants (TBAs) and other alternatives in the society (GHS, 2010). The rate of increase in institutional and supervised delivery is still very low, especially in rural Ghana.

The underlying cause of low utilization of health facility based delivery in Ghana needs further investigation in order to be better understood and appropriately addressed by reproductive health programmes. To develop effective strategies for increasing the utilization of healthcare facility delivery in Ghana, it is necessary to understand the factors influencing the choice of place for childbirth. Hence, the objective of this study is to investigate the influence of NHIS holding on the choice of health facility for childbirth in Ghana and also find out if there are other socioeconomic variables that influence the choice of health facility for childbirth. This will help improve maternal health care services utilization, especially institutional delivery in Ghana. It will also help to reduce the maternal mortality rate in the country.

3. Policy Framework and Implementation of Ghana's Health Insurance Policy

Ghana took the decision to access the Highly Indebted Poor Country (HIPC) initiative in March, 2001 and reached decision and completion points in February, 2002 and July 2004 respectively. Areas of expenditure under HIPC included funding of projects for poverty reduction and economic growth. In February 2003, the budgetary allocation for the Ministry of Health under the HIPC funding was used to support the creation of government sponsored mutual health

insurance schemes in all districts where they did not already exist (Agyepong and Adjei, 2008). In July, 2003 the final draft of the National Health Insurance Bill was laid before Parliament. Organized labour comprising the Civil Servants Association, the Ghana National Association of Teachers, the Ghana Registered Nurses Association, the Judicial Services Workers Union, and the Trades Union Congress all submitted comments and formal resolutions to parliament and protested about some aspects of the bill. The bill required both the formal and the informal sectors to enroll in government-sponsored mutual health insurance schemes. The private mutual health insurance schemes, though recognized as non-profit solidarity organizations, were legally entitled to operate, but would not receive any financial support from the national health insurance fund or any of the subsidies to cover groups exempted from premium payments such as the elderly and the poor (Agyepong *et al.*, 2006).

After the passage of National Health Insurance Act, (Act 650) in 2003, the Ministry of Health organized series of stakeholder meetings and set up task forces, with membership from both technical and political actors to provide recommendations and implementation guidelines for the policy. The basic aim of the policy was to move away from the user fees towards a pre-payment financing mechanism and it was designed to incorporate those in the formal and informal employment sectors in a single insurance system. The government was committed to a universal coverage under the national health insurance, but recognized that coverage would have to be gradually extended to achieve enrolment levels of about sixty per cent (60%) of residents in Ghana within ten (10) years of implementation (NHI Act, 650).

The basic blocks of the national health insurance policy were district-wide Mutual Health Insurance Schemes (MHIS) in each district and the Act requires every Ghanaian citizen to join and belong to a district MHIS or a private mutual or commercial insurance scheme. However, government subsidies were to be provided for those belonging to the district MHIS thus creating an incentive for more people to join (Ministry of Health, 2004). Financing of the NHIS was to be by individual premium payments and a 2.5 percent National Health Insurance Levy to be collected using the same mechanisms as the already existing 12.5 percent Value Added Tax (VAT). A National Health Insurance Fund (NHIF) was created by the Act and is mainly funded by the NHI levy of 2.5 percent sales tax on almost all goods and services. Two and a half percent (2.5%) of formal sector worker contributions to the Social Security and National Insurance Trust (SSNIT) towards retirement benefits were to be automatically transferred to the national health insurance fund on a monthly basis. Each adult in a household is expected to become a MHIS member in their own right and pay the necessary contribution, which covers themselves and dependent children under the age of 18.

A National Health Insurance Council was established to govern the operations of the NHIS. The basic objective of the Council was to secure the implementation of a national

health insurance policy that ensures access to basic health care services to all residents in Ghana. Its responsibilities included registration, licensing, regulation and supervision of the operations of all types of health insurance schemes. It was also responsible for granting accreditation to health care providers, monitoring their performance, and ensuring that health care services rendered to beneficiaries were of good quality. A chief executive officer was appointed and supporting secretariat was set up to support the National Health Insurance Council in the execution of its functions (Agyepong and Adjei, 2008). The scheme covers a minimum benefit package for almost all out - patient care, diagnosis, drugs, dental, optical and maternity services as well as most in - patient care services. Services excluded include appliances and prostheses, cosmetic surgery, anti-retroviral treatment, fertility treatment, dialysis for chronic renal failure, organ transplants, and medicines which are not included on the essential drug list prepared by the National Health Insurance Council.

4. Health Insurance Holding and Choice of Health Facility for Childbirth

Maternal health utilization is strongly influenced by health insurance holding by mothers especially in government health facilities. Nketiah and Sagoe (2009) found a positive relationship between health insurance holding and institutional delivery. Also in a similar study by Arthur (2012) and Owoo and Lambon-Quayefio (2013) both found that health insurance was a significant predictor of the demand for maternal health care utilization including institutional and supervised delivery. Health insurance holding is expected to reduce the expenditure associated with maternal health care services utilization.

Other socioeconomic variables that do influence the choice of health facility for childbirth are age, level of education, birth order, residence (rural/urban), geographical location (region of residence), wealth and accessibility to health facilities. These are other potential variables that are likely to aid the expectant mother in making choice regarding the health facility for childbirth. Age has been shown to be one of the important determinants for choice of place for childbirth by expectant mothers. It is believed that women's current age is an important determinant of the utilization of medical services (Elo, 1992; Fosu, 1994). According to Abor and Abekah-Nkrumah (2011), mother's age indicates women's accumulation of knowledge in health care services utilization and has a positive influence on the use of health services. On the other hand, younger women are rather likely to utilize modern health care facilities than older women, as they are likely to have greater exposure and knowledge to modern health care, also more access to education.

Empirical studies have shown different findings on the influence of age on health services utilization. Kistiana (2009) found that, women's age was positively related with the utilization of place of delivery in Indonesia. Owoo and

Lambon-Quayefio (2013) explore the importance of social influence and the availability of health insurance on maternal care utilization in Ghana and found that women's age and their intensity of antenatal care use were positively related. The explanation proposed is that older women may be more aware and needful of the benefits of antenatal care and are therefore more likely to use these services more intensively. Lwelamira and Safari, (2012) found a positive effect of age on place of delivery among very young and older women in Central Tanzania in their studies on health facility delivery among women. A number of other studies in Ghana and Southern Indian support the finding that older women are more interested in seeking and utilizing maternal health care services than younger women (Addai, 2000; Navaneetham and Dharmalingam, 2002).

Alongside the mothers age is the birth order. Birth order is another factor that affects the utilization of maternal health services. The expectant mothers' use of health services may be influenced by her previous experience with delivery. Onah et al. (2006) found a significant association between choice of institutional or non-institutional deliveries among pregnant women and birth order in southeastern Nigeria. Another study by Wong et al. (1987) in urban areas of Philippines found that the probability of choosing either public or private modern care instead of traditional care decreases as the number of children aged zero to six years old increases. Overbosch et al. (2004) found that "pregnancy is a natural process and women with some experience might consider antenatal care less necessary".

Ekele and Tunau (2007) also argued that women of high parity in Sokoto, Nigeria, were more likely to decide to prefer home delivery with unskilled attendant. Also in a similar study by Arthur (2012) ANC utilization falls with an increasing number of living children. Several other studies have concluded that, birth order may influence health seeking behaviours for maternity health care services among women (Van Eijk et al., 2006; Danforth et al., 2009; Mpembeni et al., 2007; Mrisho et al., 2007; Fotso et al., 2009). The reasons for this trend could be that women with first child pregnancy are more cautious about their pregnancies and therefore sought out trained professional. Also, as the number of children borne increases, women may tend to believe that modern health care is not as necessary and tend to rely more on her past experiences and knowledge from the accumulated previous and finally, higher birth order suggests a greater family size and hence lower resources (both time and money) available to seek formal healthcare.

The level of education of the mother has also been shown to be one of the most important determinants of maternal health services use. According to Grossman (1972), education makes a person efficient in the use of health services and may enable the individual to choose a more health conscious behavior to improve health. For instance, Arthur (2012) and Owoo and Lambon-Quayefio (2013) both found a positive relationship between education and antenatal use in Ghana. Lwelamira and Safari (2012) found that women with at least secondary education were two times

more likely to deliver in a health facility compared to those with primary or no formal education in Central Tanzania.

Also in a similar study by Abor *et al.* (2011) in their study on the socioeconomic determinants of maternal health care utilization in Ghana, the authors found that women with at least primary education were more likely to utilize maternal health services compared to those without education. Several empirical studies have found a positive relationship between the education of mothers and the utilization of maternal health care services (Addai, 2000; Chakraborty *et al.*, 2003; Mekonnen and Mekonnen, 2003; Gage, 2007).

A study by Gage (2007) in Mali has shown that the odds of utilizing prenatal care increases with the level of education, Mekonnen and Mekonnen (2003) also concluded that highly educated mothers were more likely to use maternal health service than less educated ones in Ethiopia. Babalola and Fatusi (2009) revealed that women with higher education are more likely to use antenatal service and rely on medical personnel for delivery in Nigeria. The above argument supports the fact that better educated women are more aware of health problems, know more about the availability of health care services, and use this information more effectively to maintain or achieve good health status. Alongside expectants mother's level of education is husband's level of education. Husband's education is another key factor that has been found to influence the utilization of health care services.

Kistiana (2009) found that women who have more educated husbands were more likely to use health facilities for delivery as compared to the women whose husbands were not educated or with only primary education. Caldwell (1990) also found that men with higher educational attainment played a more important role in child-care decisions than men with less schooling. The reason for this could be that more educated husband's may be aware of the benefits associated with the use of these services and hence can influence their wife's decision to seek modern health-care services especially during delivery.

Place of residence has been found to be one of the important factors that influence maternal health care utilization. The argument is that most urban residents may be relatively closer to health care facilities than their rural counterparts. Stock (1983) showed that physical proximity of health care services, especially in developing country context, plays an important role in utilization of these services. Overbosch *et al.* (2004) revealed that "currently, more than a third of the rural women have to travel more than 5km to the modern provider of ANC" in Ghana. Thus accessibility to health care services may be much easier for the urban residents than those in the rural areas.

Lwelamira and Safari (2012) concluded that the chance of delivery in health facilities decreased with increasing distance to the nearest health facility. Therefore women located more than 10 km from the nearest health facility were less likely to deliver in health facility as compared to those living within 5 km from nearest health facility. Kistiana (2009) found that the most important variable influencing maternal health in care utilisation especially using a health

facility as the place of delivery was the place of residence of the expectant mother. Arthur (2010) also found that women in urban areas were more likely to use health services (ANC) as compared to rural dwellers using the ordered logistic regression model in his analysis of the determinants of ANC use in Ghana. Mensaklo (2010) found that a mother lives in an urban area has a smaller chance of losing her infant relative to a woman who lives in a rural area. Nketiah-Amposah and Sagoe-Moses (2009) indicated that distance to the nearest health facility is significant and negatively related to maternal health services utilization in Ghana.

Mekonnen and Mekonnen (2002) concluded that rural women are less likely to use maternal health services. However, Abor and Abekah-Nkrumah (2011) found a significant inverse relationship between place of residence and the use of maternal health services. Compared to those residing in rural areas, urban women were less likely to utilize maternal health services especially place of delivery and postnatal services. This however contradicts what other researchers have found empirically. Other empirical studies have found health services utilization to be positively affected by wealth, since it shows the economic status of the individual/family. Owoo and Lambon-Quayefio (2013) found that women belonging to the 'richer' and 'richest' wealth categories appear to utilize maternal care services more frequently than women in the 'poorest' category, controlling for possession of health insurance. This may be explained by the presence of other additional cost associated with maternal health care which the existing health insurance scheme may not adequately cater for (Arthur, 2012).

Abor and Abekah-Nkrumah (2011) concluded that compared to those in the poorest household, those in the poorer household are more likely to deliver in a health facility, with those being in the middle wealth quintile being more likely to use antenatal services and deliver at a health facility. Lwelamira and Safari (2012) also found that women from poor families may fail to use health facilities for delivery due to lack of money for transport when the facility is located at a distant place and lack of money to pay for delivery kit as well as food while at health facility in Central Tanzania. A study by Gage (2007) revealed that household poverty and personal problems were inversely related to the use of maternal health care. Mensaklo (2010) found that controlling for geographic, demographic and healthcare variables, wealthy households are less likely to have their babies die before the age of one showing that wealth facilitates access to quality health services.

Accessibility of health services has been found to influence the use of maternal health services. The spatial distribution of health care institutions in Ghana is a major problem as majority of Ghana's population live in rural areas where poor road networks make health care accessibility a major challenge and where also the private providers of health care rarely provide health services. The poor geography of such places makes it difficult for government health services to be easily reachable. The distance from health facilities increases the cost of access to professional

care; in that the time spent reaching the nearest facility may represent a significant negative opportunity cost. Mpembeni et al. (2007) found that the proportion of women with skilled attendants at delivery decrease with increasing distance to the health facility in Southern Tanzania.

5. Methodology

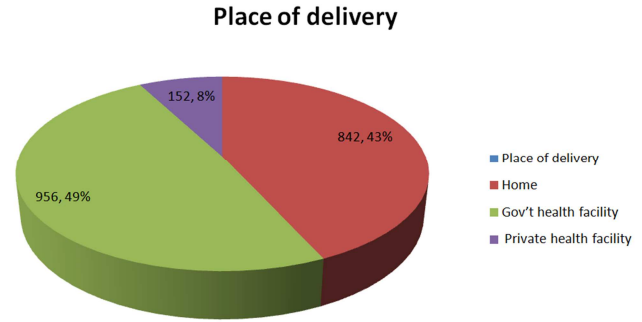
The study employs both descriptive and multinomial analysis to examine the effect of national health insurance holding and other socioeconomic variables on the choice of health facility for childbirth in Ghana. The descriptive analysis involves the use of tables and pie chart. The multinomial model is specified as:

$$P_{r(i)} = \frac{\exp(V_i)}{\sum_{j=HO,GOV,PR} \exp(V_j)} \quad (1)$$

Where $P_{r(i)}$ refers to the probability of individual decision-maker choosing alternative i , V_j is the systematic component of the utility of alternative j (where HO is home, GOV is government facility and PR is private health facility). This formulation implies that the probability of choosing an alternative increases monotonically with an increase in the systematic utility of that alternative and decreases with increases in the systematic utility of the each of the other alternatives. The model above is estimated using the multinomial logistic regression model. It is estimated using maximum likelihood estimation technique. The multinomial logistic regression model is used in this study because the dependent variable place of delivery has been categorized into three choices (thus, home, government/public and private health facility). This is to help find out the influence of NHIS holding and other socioeconomic variables on the choice of health facility for childbirth. The control variables are age of the mother, education, birth order, wealth, accessibility, residence and regional dummies.

6. Data

The study uses data from the 2008 Ghana Demographic and Health Survey (GDHS). The survey is carried out every five years (In Ghana, it was carried out in 1988, 1993, 1998, 2003, 2008). The survey collects data on fertility, family planning, maternal and child health. A special survey on maternal health was carried out in 2007. The sample consists of women within the ages of 15–49 with a live birth in the five years preceding the survey. This is a representative sample containing 11,888 women. This study analyzes response from 1,950 women aged 15–49, who have at least one child under age five at the time of the survey. The questionnaire consists of questions on demographic indicators, health status, illness and visits to a doctor, health behavior such as questions on smoking, drinking alcohol, physical activity, and eating habits. To measure the choice of health facility for childbirth government/public and private health facilities has been used and home delivery is considered to be the based outcome.



Source: Constructed by author from the 2008 GDHS dataset.

Figure 1. Pie chart of Place of Delivery.

Figure 1 shows that, 43percent of total deliveries occurred at home, with the remaining 57 percent of the mothers delivered at various health facilities. Government health facilities recorded the highest institutional delivery with 956 births representing 49 percent of the total deliveries and private facilities accounted for the rest 152 births representing 8 percent of the total deliveries.

Table 1. Proportions of Place of Delivery and Health Insurance Coverage.

Place of delivery	Covered by NHIS		Total
	No	Yes	
Home	612	230	842
Gov health facilities	426	530	956
Private health facilities	85	67	152
Total	1,123	827	1,950

Source: Constructed by author from the 2008 GDHS dataset.

Figures on Table 1 show that out of a total of 1,950 births government health facilities accounted for 956. In all, 426 (44.56%) were not covered by the national health insurance scheme and it also represents 37.68% of the 1,123 women who were not covered under the national health insurance scheme. The remaining 530 (55.44%) were covered by the scheme representing 64.09% of the 827 women who were covered. Finally, it is also observed that most of the private facility births were not covered by the scheme, suggesting that the private health facilities are not properly integrated into the scheme. 85(55.92%) out of the 152 private health facility births involved women who were not covered representing 7.57% of the people not under the scheme. The rest 67(44.09%) who were covered by the policy shows 8.10% of the respondents under the scheme.

The results in table 2 show that, out of the total 842 births that occurred at home, 433 respondents representing about 51% fall within the poorest wealth quintile whilst about 25% and 14% falls within the poorer and the middle wealth quintiles respectively. Also, about 8% and 2% of them fall within the richer and the richest wealth quintiles respectively. With regards to births occurring at government health facilities, about 15% and 20% of them fall within the poorest and the poorer wealth quintiles respectively, with the remaining 20%, 26% and 19% being found in the middle, richer and the richest wealth categories respectively. Finally, out of the total births that occurred at private health facilities,

about 5% and 18% of them fall within the poorest and the poorer wealth categories respectively. About 15% and 28% are also found within the middle and the richer wealth quintiles respectively, with about 36% of the expectant mothers being within the richest wealth quintile. This means that expectant mothers with higher wealth quintiles are more

likely to use institutional delivery services. The explanation is that expectant mothers within the poorest wealth category may not be able to afford the services of the health facilities and since those within the middle to the richest wealth categories can afford this, they tend to utilize the health facilities more.

Table 2. Proportions of Place of Delivery and Wealth Quintiles.

Place of delivery	Wealth quintiles					Total
	Poorest	Poorer	Middle	Richer	Richest	
Home	433	212	117	63	17	842
Gov health facilities	139	194	192	247	185	956
Private health facilities	7	27	22	43	54	152
Total	579	432	331	353	256	1,950

Source: Constructed by author from the 2008 GDHS dataset.

7. Empirical Results

Table 3. Multinomial Logistic Estimates of Institutional Delivery Care Services Utilization in Ghana.

Variables	Government health facilities		Private health facilities	
	Marginal effect	P value	Marginal effect	P value
Age	0.0075**	0.014	-0.00001	0.976
NHIS	0.1557***	0.000	-0.0008	0.857
Wealth Quintiles(poorest as base)				
Poorer	0.1422***	0.000	0.0225	0.156
Middle	0.1755***	0.000	0.0157	0.314
Richer	0.2498***	0.000	0.0279	0.148
richest	0.2874***	0.000	0.0556*	0.078
Birthorder	-0.0277***	0.008	-0.0008	0.610
Education				
Primary	0.0419	0.264	0.0050	0.503
Secondary	0.1149***	0.005	-0.0006	0.933
tertiary	0.1845	0.187	0.0038	0.812
Husband's educ				
Primary	0.1181**	0.014	0.0137	0.366
Secondary	0.0855**	0.031	0.0002	0.982
Tertiary	0.2349***	0.000	0.0033	0.767
Region				
Western	0.1068	0.105	-0.0145***	0.005
Central	0.1026	0.147	0.0002	0.983
Greater Accra	0.1834***	0.001	-0.0146***	0.007
Volta	0.1336**	0.031	-0.0187***	0.000
Eastern	0.1586***	0.004	-0.0001	0.984
Ashanti	0.1926***	0.001	-0.0118**	0.030
BrongAhafo	0.0689	0.302	-0.0175***	0.005
Upper East	0.2527***	0.000	-0.0630***	0.000
Upper West	0.2184***	0.000	-0.0236***	0.000
Accessibility	0.0954***	0.002	0.0004	0.942
Rural resident	-0.1803***	0.000	-0.0133*	0.051
No. of obs = 1,950	Wald chi2(52) = 10492.01		Prob> chi2 = 0.0000	
Pseudo R2 = 0.2471	Log pseudo likelihood = -1337.4885			

Note: significant levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ and home delivery care services is the base outcome.

The paper sought to examine the influence of NHIS holding and other socioeconomic variables on the choice of health facility for childbirth in Ghana. The variable health insurance is found to be one of the significant factors that determine a woman's delivery at government health facility. It is significant at 1% and has a positive relationship with the utilization of government health facilities. The results indicate that, expectant mothers with health insurance tend to use government health facilities more than home delivery

services relative to their counterparts who are not covered by the scheme. The cost element that may come with the use of the service is curtailed since women with the health insurance are usually provided with the necessary drugs prescribed for them according to the insurance policy. However, those without this policy may have to buy drugs prescribed for them. The result of this study is consistent with that of Nketiah and Sagoe (2009), Arthur (2012), and Owoo and Lambon-Quayefio (2013) which found that health

insurance was a significant predictor of the demand for maternal health care utilization, including institutional and supervised delivery. Particularly, Owoo and Lambon-Quayefio (2013) indicated that health insurance was expected to mitigate out-of-pocket expenses related to maternal health care utilization, which will encourage more women to utilize these services more readily. As expected, health insurance holding is not significant in explaining the utilization of private health facilities in times of child birth. This indicates that the private sector is not integrated into the National Health Insurance Scheme.

The age and birth order of the expectant mother are other factors that also influence the decision of the expectant mother to choose a particular health facility for childbirth in Ghana. Age is found to be positively related to- and a significant determinant of demand for institutional delivery care services from the government health facilities. The marginal effect is positive and significant at one (5) percent. Thus, the study suggests that as a woman ages, all other things being equal, she would prefer her delivery at government hospitals to that at home. The marginal effect of 0.0075 indicates that when a woman attains one additional year, the probability of her giving birth at government health facilities increases by 0.75 percent. It may also be explained that, older women may have accumulated knowledge of health care services, which may positively influence their use of maternal health services. Birth order, on the other hand, has a negative sign for both government and private health facilities implying that an increase in the birth order of the mother tends to decrease the probability of demanding such services relative to home delivery services. It is significant at 1% for government facility. The negative relationship may be due to the fact that, once a woman has gone through the experience of child birth, she may be reluctant to undertake many institutional delivery care services for other pregnancies, this may be due to experience with the service or the fact that she begins to think that she probably has an idea of what is required of her during her pregnancy and child birth.

Education, residence, wealth and access to a health facility have been found to also influence the expectant mother's decision in choosing a particular health facility for childbirth in Ghana. The findings revealed that, education of the expectant mother is positively related to institutional childbirth in both the government and the private health facilities. Again, the acquisition (by a woman) of secondary education is found to be significant at 1% in influencing the choice of government health facilities over a home facility for childbirth. Thus an increase in the level of education will increase childbirth services utilization from the government facility by the increase in the size of the coefficient from those with primary to those with tertiary levels of education. It's being argued that women education enhances their independence, confidence and capacity building, which are important for decisions regarding their health. This suggests that, improving the education of the mother in Ghana, will contribute greatly to the use of maternal healthcare services

including institutional delivery. Hence the promotion of females' education up to at least the secondary school level is seen as the most effective measure in improving maternal and child health services in Ghana. With regards to husband's education, the findings indicate a positive relationship between husband's education and institutional childbirth from the government health facilities. Husbands with primary and secondary education are found to be significant at 5% and 1% for husbands with tertiary education. This means that husbands with at least primary education tend to influence the decision of the expectant mother regarding the use of health facilities for childbirth services. Thus an increase in the level of education of the husband will increase the expectant mother's utilization of government health facility for childbirth. One possible explanation for this result is that husbands can influence the wife's decision to seek modern health care services.

The residence of the expectant mother being rural is found to be negatively related to the use of institutional delivery care services for childbirth in both government and private health facilities as compared to those in the reference group (urban). Place of residence is significant at 1% and 5% for both government and private health facilities respectively. This implies that rural women are more likely to deliver at home compared to their urban counterparts. The negative effect might indicate that the distribution of health facilities between urban and rural are in favor of the urban dwellers, putting the rural dwellers at a disadvantage in terms of availability, accessibility and quality of service provided. Also, transportation to the facility may also serve as a constraint to the use of the service since it is known that, the road network is mostly poor in the rural areas compared to the urban areas.

In addition to place of residence (rural/urban), is the geographical location (region) of the expectant mother. The results of the study show a positive relationship between each of the regions of the expectant mothers and the utilization of government health facility for childbirth, compared to those in the reference category (expectant mothers in the Northern Region). From the results, except for Central, Western and Brong-Ahafo Regions, the rest of the Regions are significant at 1%, and 5% for Volta region. However, the results also indicate that, except for the Central Region, the rest of the Regions show a negative relationship with the utilization of private health facility for delivery. Also from the results, except for Central and Eastern Regions, the coefficients for the rest of the Regions are significant at 1% and 5% for Ashanti Region. This however, implies that expectant mothers in the regions prefer home delivery to delivering their babies at private health facilities. The possible reason could be that using the private health facilities for such a service may not be accessible and even if accessible may be very expensive.

The variable wealth, as expected, has a positive relationship with institutional delivery care services utilization. The marginal effects of the wealth quintiles poorer, middle, richer and the richest are all positive and

significant at 1% for government health facilities and only significant at 10% for the richest quintile in the private health facilities. The sizes of the coefficients also increase with the wealth quintiles (0.142, 0.176, 0.249 and 0.287). The results suggest that, expectant mothers in the poorer, middle, richer and the richest quintiles are more likely to utilize health facilities for delivery services especially government health facilities over those in the reference group (expectant mothers in the poorest quintiles). This signifies that wealth is an important variable in the utilization of maternal health services, especially childbirth and thus policy should focus on providing some means of support to expectant mothers, especially those in the lowest wealth brackets, to help in their use of maternal healthcare services alongside the free maternal health policies. The results suggest that, accessibility of health facilities to a woman is positively related to the use of health facilities for childbirth in the government health facility. It is significant at 1% in the utilization of government health facility for child delivery and not significant in the private health facility for childbirth. Accessibility being positive and significant at 1% in government facility means that, the more accessible a government health facility is to an expectant mother, the higher the demand for its services in times of childbirth relative to home services.

8. Conclusions and Policy Recommendations

The study examined the influence of NHIS holding on the choice of health facility for childbirth in Ghana using data from the 2008 Ghana Demographic and Health Survey (GDHS, 2008). The study specifically seeks to find out whether the holding of NHIS has an effect on the choice of a particular health facility for childbirth in Ghana. The Governments of Ghana have made efforts to improve maternal health care by making maternal health care more accessible and also improving service quality. Underutilizing maternal health care services, particularly the low patronage of delivery care services by women is perhaps related not only to accessibility but also acceptability and affordability since these are related to their attitudes, social influence and their self-efficacy towards maternal health care usage. Since NHIS holding have been found to significantly influence the choice of health facilities for childbirth in Ghana, especially in the government health facilities, there is the need to improve public awareness especially women on the health-related benefits of professional assisted deliveries and also educate them on the importance of registering for, and using, the health insurance services. In addition to the above, wealth has also been found to be a significant socioeconomic determinant of institutional childbirth (i. e. both government and private health facilities).

To increase the utilization of health facilities for childbirth service, efforts should be made by policy makers to integrate the private sector properly into the National Health Insurance

Scheme since the study revealed that health insurance holding is an effective tool for removing the barriers of access to the government health facilities in times of childbirth. There is the need for government to also create and sustain an enabling environment for the public and private sectors for job creation to improve the income status of individuals and households, especially women, in the economy. This is to help ensure that the other costs (e. g. transportation to the facility) associated with the utilization of institutional childbirth can be handled. Since the results also revealed that women with at least secondary education are more likely to utilize this service from the government health facilities while husbands with at least primary education influence their wives' decision to use government health facilities for childbirth. Thus, an increase in the education of males may increase access to a wide range of relevant information which would contribute to better understanding on the importance of using health care facilities for childbirth. A husband's education may influence his attitudes towards modern health service, which in turn could influence the wife's decision to seek formal health care. Thus, females and males should be encouraged to pursue education to at least the primary school level. Also, much attention should be given to females to attain up to at least the secondary school level unlike in the case of the males since the results show that women with at least secondary education are more likely to use health care facilities for childbirth services especially in the government facilities. Hence governments should implement the Free Senior High School Education Policy since this in a way reduces the cost of attaining secondary education. There is also the need to educate women who have given birth before on the importance of delivering their babies in health institutions for each pregnancy in order to ensure their safety and that of their babies, since the results show that institutional delivery falls with the number of living children as a result of having experience with childbirth.

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