HEALTH INSURANCE AND MATERNAL HEALTH SERVICE UTILISATION AMONG WOMEN OF REPRODUCTIVE AGE

Miracle Ayomikun Adesina1, Toluwase Ayobola Ayorinde1, Ruth Oladele1, Isaac Olufadewa1, Elizabeth Oyewole1, and Olajumoke Ogundele1

1Slum and Rural Health Initiative

October 27, 2022

Abstract

Background: Access to consistent health insurance is a commendable landmark in healthcare service as it reduces maternal mortality. In Nigeria, pregnancy-related complications result in 40,000 maternal deaths annually. Socio-demographic factors of women predict access to health insurance and utilisation of maternal health services. This study aimed to investigate the association between health insurance coverage and utilisation of maternal health services among women of reproductive age.

Methodology: Data for this study was extracted from NDHS 2018 population-based study. Statistical significance was set at p<0.005. Descriptive statistics was used to analyze socio-demographic characteristics while inferential statistics of binary logistic regression investigated the strength of association between independent and dependent variables.

Result: The mean age of women in this study were 29.8±7.0. Majority of respondents (97.2%) were not covered by health insurance which predicts poor maternal healthcare as the majority (98.1%) did not attend the above four ANC visits. Binary logistic regression analysis revealed that women covered by health insurance were 3.8 times more likely to be attended to by a skilled birth attendant at time of delivery than those without health insurance (OR=3.755; CI=2.901-4.860). Findings revealed that women covered by health insurance were 1.5 times more likely to assess ANC compared to those who are not (OR=1.494, C.I=1.224-1.823)

Conclusion: Health insurance coverage is associated with better utilisation of maternal healthcare services. Therefore, instituting sustainable strategies to ensure a holistic health insurance coverage that cuts across socio-economic strata will improve decision-making and enhance health-seeking practices among women of reproductive age.

INTRODUCTION

Universal Health Coverage Monitoring Report in 2017 revealed that at least half of the world’s population still lacks access to essential health services due to financial constraints.1 Out of the countries with the world’s highest rates of maternal deaths; over half are from Sub-Saharan Africa. 2 In 2015, Sub-Saharan Africa had the highest rate, with 546 maternal deaths per 100,000 live births. In Nigeria, 40,000 women die each year from pregnancy-related complications, and around 300,000 women worldwide die from preventable causes connected to childbirth, pregnancy, or postnatal complications.3 Given the impending deadlines for lowering maternal and child mortality under Agenda 2030, the international health community is urging low- and middle-income nations to recommit to improving maternal and child mortality. For successful sustainability, improvements in reproductive health, particularly maternal health, require a competent, functional financial structure. Maternal health and outcomes are one of the many areas where progress has been made, with maternal mortality and morbidity dropping by 38% globally between 2000 and 2017.1

According to a report by WHO and World Bank,1 800 million people spend more than 10% of their household budget on health and 100 million people are pushed to extreme poverty annually due to out-of-pocket health expenses. The ability of people to obtain and utilise all essential medical treatments at a high standard without suffering exorbitant financial charges is known as Universal Health Coverage (UHC).4 Universal health coverage is available for infectious diseases such as tuberculosis treatment and HIV antiretroviral
treatment cervical; non-communicable diseases such as cancer screening, prevention and treatment of raised blood pressure; and service capacity; and access like: basic hospital access, access to essential medicines; besides reproductive, maternal, new-borns and child health coverage. In Low- and middle-income (LMIC) nations around the world have employed either social or national health insurance and/or community-based health insurance (CBHI). In Nigeria; the health insurance providers include the National Health Insurance Scheme (NHIS), and Community-Based Health Insurance (CBHI). CBHIs typically concentrate on assisting those who are not covered by other programs, by using social institutions like families, neighbourhood organisations, or religious organisations as resource pools. In spite of the sensitization on CBHIs as reported in Ogben and Ilesanmi study; Africa enrolment for the scheme has remained low (22-24%), CBHIS has thus failed to reach satisfactory levels of participation amongst targeted population. Similarly, a few percentage of Nigerians enrolled for the NHIS scheme; as approximately 3% of Nigerians are on the scheme.

According to the findings of a West African study by Dadjo et al, out of 79,794 women aged 15 to 49 years, roughly 86.73% of women with health insurance had multiple required minimum antenatal care visits, compared to 55.15 percent of women without insurance. Overall, 56.91 percent of the women in the study went to at least four prenatal appointments. Ghana had the highest prevalence of four or more prenatal care visits (87.7%), while Nigeria had the lowest incidence (32.93%). Noticeable disparities owing to the gender of the household head, with 65.82 percent of women visiting antenatal care facilities in homes where women were the head, compared to 55.82 percent in households where men were the head. Non-past complications and negative provider attitude were reasons mothers gave for non-utilization of maternal health services in Northwestern Nigeria. A study conducted in Tanzania by Kibusi et al. reported that of 4513 women, only 281 (6.2%) had health insurance. A higher proportion of the women with health insurance had a proper timing of 1st ANC attendance (27.0%) and had skilled birth attendance (77.6%); compared to women without insurance (16.0% and 55.1% respectively). Hence, health insurance was associated with proper timing of 1st ANC attendance and skilled birth attendance.

The uptake of antenatal care is associated with maternal education, level of media exposure, residential area, wealth status, place of delivery, marital status, age at first marriage, knowledge of antenatal care attendance, level of partner’s education, and birth order, according to evidence from Ghana, and Kenya. A large body of evidence demonstrates that health insurance status is strongly connected to prenatal care attendance among pregnant women. Hence health insurance is an alternative approach to health financing, which possibly enables the removal of user fees at the point of care. There is dearth of studies in Nigeria that has explored the effect of health insurance on maternal health services utilization. This study thus aimed to investigate the prevalence of health insurance ownership among Nigerian women from various socioeconomic backgrounds, as well as the association between health insurance coverage and utilisation of maternal health services among women of reproductive age, and to also know the factors that influence the utilisation of maternal and health insurance services of women of reproductive age. Findings from this study would highlight the urgent need for policymakers and government to implement universal health coverage as a means to address financial inequality in accessing maternal health care services.

**METHODOLOGY**

**Data source**

This study is a cross-sectional analysis of the population-based NDHS research from the 2018 (National Demographic and Health Survey) study is a nationally representative survey that collects sociodemographic and other health-related information, such as maternity health service utilisation and insurance coverage. The survey used a two-stage sampling technique in which samples were picked at random from clusters or enumeration zones to collect data from the six geographical regions (EAs). The poll drew a total of 41,821 women aged 15 to 49 years, but only 16,427 women filled out information on health insurance status, which was the study’s most critical variable. The dataset is accessible for download via https://dhsprogram.com/data/available-datasets.cfm.

**Independent variable**
The independent variable used for this study was health insurance coverage and this was derived from the question: Are you covered by health insurance? The responses were either ‘Yes’ or ‘No’, for analysis, and the response was coded as 0=No and 1=Yes. Health insurance coverage as the key independent variable was based on its association with maternal health care services utilisation in previous studies. The covariates in this study include individual and community-level factors. Individual-level factors included age (<20, 21–29, 30–39, 40–49), educational level (no education, primary, secondary, higher religion (Christianity, Islam, traditionalist, other), occupation (sales, agriculture, services, professional/technical/managerial, skilled manual, clerical, other, unskilled), region (Northcentral, Northeast, Northwest, Southeast, South-south, Southwest), parity, index (poorest, poorer, middle, richer, richest). All of these variables were chosen because of their theoretical and practical relevance to health insurance coverage, as well as their inclusion in the 2018 NDHS dataset.

**Dependent variable**

The dependent variable was recommended timing of the first ANC visit. Maternal health service utilisation was defined as the timing of antenatal care visits within the first trimester. The other variables were the completed recommended number of ANC visits. The World Health Organization recommends eight ANC visits or completing at least four or more ANC visits. Lastly, skilled birth attendance involved having the expectant mother’s delivery attended by a qualified health worker at a health facility.

**Data analysis**

Descriptive statistics such as frequency and percentage were employed to describe the research participants’ backgrounds. A Chi-square test was performed to assess the relationship between each of the women’s sociodemographic variables, covered by health insurance, and maternal health service utilisation. To investigate the association between individual characteristics and insurance coverage, chi-square, and binary logistic regression analysis were used. All statistical tests were run using the Statistical Package for Social Science (IBM SPSS) version 25 at a 5% level of significance.

**RESULTS**

**Sociodemographic characteristics**

Almost half of the respondents (48.6%) were between 25-34 years, the majority (89.9%) of the respondents were married, a few (10.8%) had a high level of education, and many (58.0%) of the respondents resided in rural places. Some of the respondents (22.9%) were middle-income earners, and most (72.1%) of them were currently working, and a few (4.9%) of the respondent/partner alone decided on how to spend respondent earnings. Almost half of the respondents (49.7%) husband/partner alone decided on the respondent’s healthcare and slightly above half (53.4%) of the respondents had one birth in the last five years (Table 1).

**Antenatal visits and Insurance coverage**

Few (3.8%) of the respondents were pregnant for 1-3 month, most (75.6%) did not go for antenatal care during the first three month while many (60.7%) claimed to have been attended to by a skilled birth attendant. However, almost all (98.1%) did not attain the required number of visits (above 4) and few (2.8%) had health insurance coverage (Table 2).

**Association between health insurance coverage and maternal health service utilisation among women of reproductive age**

Chi-square analysis revealed a significant relationship between insurance coverage and the timing of the first ANC visit ($X^2=0.956; p<0.001$), as well as current marital status ($X^2= 17.525; P= 0.004$), and education level ($X^2= 385.026; p <0.001$). There was a significant association between type of place of residence and timing of first ANC visit ($X^2=16.756; p <0.001$), this was also noted for region ($X^2=1367.357; p <0.001$), wealth index also showed a significant association ($X^2= 253.804; p<0.001$) and respondents current working status influenced their first ANC visit ($X^2= 53.554; p-value<0.001$). There was a significant relationship between insurance and birth attended by a skilled worker ($X^2= 115.847; p<0.001$), as well as age ($X^2= 102.721; p<0.001$).
p<.001), a link was also noted between education. There was a significant association between type of place of residence and birth attended by skilled birth attendance (X²=1367.357; p<0.001), this was also noted for region (X²=78.150; p<0.001), and a significant association was noted for wealth index (X²=3473.244; p<0.001). A significant relationship was found between age and number of recommended visits, X²=4010.118; p<0.001) and birth attended by the skilled workers (X²=163.739; p-value<0.001). There was also a significant association between region (X²=4148.309; p<0.001). Fisher’s exact test revealed a relationship between current marital status and recommended number of visits (F=0.591; p-value<0.001). (Table 3).

**Adjusted Odds Ratios (AOR) for the association between health insurance coverage and maternal health service utilisation among women of reproductive age**

Binary logistic regression analysis was used to determine the association between health insurance coverage and MHC services utilisation. It revealed that women who were covered by health insurance were 1.5 times more likely to visit ANC within the first trimester than those not covered by health insurance (OR=1.494; CI=1.224-1.823), and those with higher education were 2.9 times more likely to have an ANC visit within the first 3 months of pregnancy than those with no education (OR=2.856; CI=2.530-3.224). However, respondents from the rural areas were 13.9% less likely to visit an ANC within the first 3 months than those in urban regions (OR=0.861; CI=0.801-0.925). Those from North West were 69.0% less likely to visit an ANC compared to those in the North Central region (OR=0.310; CI=0.274-0.350), and those in the richest wealth index are 2.5 times more likely to visit an ANC within the first trimester than those in the poorest wealth index (OR=2.506; CI=2.211-2.840). Respondents who are currently working are 1.4 times more likely to visit an ANC within the first trimester than those who are not working (OR=1.360; CI=1.252-1.477). Women who had two or more births in the last five years were 24.8% less likely to visit an ANC compared to those with only one birth (OR=0.752; CI=0.700-0.808).

Binary logistic regression analysis revealed that women aged 25 to 34 years were 1.7 times more likely to complete the recommended number of ANC visits compared to women aged 15 to 24 years (OR=1.732; CI=1.222-2.455) and those from the North West region were 45.1% less likely to complete the recommended number of ANC visits when compared with respondents from North Central (OR=0.549; CI=0.361-0.835). Binary logistic regression analysis revealed that women covered by health insurance were 3.8 times more likely to be attended to by a skilled birth attendant at time of delivery than those without health insurance (OR=3.755; CI=2.901-4.860). Respondents aged 25 to 34 are 1.4 times more likely to be attended to by a skilled birth attendant as compared with those aged 15 to 24 (OR=1.420; CI=1.314-1.525). Married women were 50.4% less likely to be attended to by a skilled birth attendant than those that are single (OR=1.033; CI=1.033-1.514) and those with higher education were 38.3 times more likely to be attended to by a skilled birth attendant than those with no education (OR=38.266; CI=31.177-46.966). However, respondents from the rural were 72.1% less likely to be attended to by a skilled birth attendant than those in urban regions (OR=0.279; CI=0.261-0.299), while those from North West were 84.0% less likely to be attended to by a skilled birth attendant compared to those in the North Central region (OR=0.310; CI=0.144-0.178) those in the richest wealth index are 28.5 times more likely to be attended to by a skilled birth attendant during ANC than those in the poorest wealth index (OR=28.542; CI=24.601-33.115). Respondents who were currently working were 1.8 times more likely to be attended to by a skilled birth attendant than those who are not working (OR=1.779; CI=1.661-1.906). Women who had two or more birth in the last five years were 36.9% less likely to be attended to by skilled birth attendants compared with those with only one birth (OR=0.631; CI=0.593-0.673).

(Table 4).

**DISCUSSIONS**

This study examined the prevalence of health insurance ownership among Nigerian women from various socioeconomic backgrounds, as well as the relationship between health insurance coverage and three key maternal health services: timing of first ANC visit, meeting the recommended four ANC visits, and having a skilled birth attendant. In this study, nearly all (97.2%) of study participants reported having no health
insurance coverage. Unlike the study conducted in East Africa where 7.56% of the women had health insurance coverage and in Jordan where 50.4% of the women had health insurance coverage. The high percentage of women not covered with health insurance in this study is unsurprising as approximately 3% of Nigerians are on the NHIS scheme.

More than half (58.8%) of the respondents live in rural areas, and these rural settlements were less likely to go for ANC visits within the first 3 months. This could be a result of poor uptake of healthcare insurance among the rural dwellers because the enrolled population in the NHIS scheme is largely made up of federal government employees and their dependents, and most rural dwellers are often not civil servants and hence may not have access to the health care insurance. However, under the NHIS, Community-Based Health Insurance (CBHI); an informal sector health insurance program was established to cater for people in the rural and informal parts of the country. Notably, the CBHIS schemes according to a few studies are implemented in some regions in Nigeria such as North-central; where many enrolled for the scheme as result of their level of awareness about the scheme. Also, many who utilised the scheme according to the study of Ogben and Ilesanmi perceived it as a cheap way to access healthcare. However, due to changes in government, as well as a lack of interest, support, and belief on the part of the beneficiaries, the majority of the schemes have been inactive. Another plausible explanation for the poor uptake of healthcare insurance among rural dwellers could be the less information access, and less awareness about health insurance. Our study showed that health insurance coverage was a significant factor influencing the timing of the first ANC visit among women as individuals who were covered by health insurance were more likely to have their first ANC visit within the first trimester than those who were not.

With Maternal Health Care (MHC) service utilisation, 75.6%, 98.1%, and 39.3% failed to make an early first antenatal care visit, complete the recommended number of antenatal care visits, and have their delivery attended by a skilled worker respectively. Findings on the prevalence of MHC service utilisation differ from previous studies which could be due to differences in study location, and participant knowledge of the importance of these services. In this study, there was a significant association between the age and the recommended number of visits, in contrast to the findings of Fernandes et al which stated that age does not influence the recommended number of visits. Moreover, both studies stated that women’s marital status affected completing the recommended number of visits, as married women reported higher ANC visits than their single counterparts. This may be due to the emotional and financial support married women receive from their partners to participate in maternal services.

Furthermore, this study revealed that as women’s educational levels rise, so does their likelihood of completing four or more ANC visits which are similar to a study by Oladokun et al. In line with other studies, this finding could be explained by the fact that education is a predictor of a variety of other factors associated with health-seeking behaviour. It is reasonable to conclude that educated women, as opposed to uneducated women, have better access to information, a level of health literacy that allows them to exercise their choice, and the ability to overcome cultural barriers to ANC service utilisation. Also, being employed was a significant indication for women attending recommended ANC visits because having a job provides economic security, allowing women who are pregnant to afford maternal services. The odds of skilled birth attendance was higher among women who had tertiary education, similar to a study conducted by Belayneh et al. This could be explained by the fact that women with higher education were more likely to be employed and have more income than their counterparts. Hence, being employed and married provides greater financial security, which encourages the use of maternal services. The women in rural areas reported lower rates of skilled birth attendance than women in urban areas; this can be attributed to urban areas having a higher prevalence of maternal facilities due to urbanisation.

The strength of this study is that it used nationally representative data from the six geopolitical zones in Nigeria.

CONCLUSION

The result shows that a significant number of participants were not covered by health insurance. This implies
a poor rate of maternal healthcare, especially as most did not attend the four required antenatal visits. The result revealed that pregnant women who were covered by health insurance are 1.5 times more likely to visit Antenatal care within the first three months than those not covered by any health insurance. Also, being employed is essential for women attending recommended ANC visits because it enables them to afford maternal services. To increase maternal health utilisation, government and policymakers should implement the available comprehensive health care coverage to treat the issue of financial constraints in accessing maternal healthcare services, especially among the rural dwellers. Also, there is a need for sensitization to be organised in the rural communities about CBHIS, to foster the level of awareness of the health insurance scheme.

Ethics statement: This research was based on the data obtained in the public domain. The permission to use data from the DHS program was obtained. Informed consent was acquired from all the respondents, their participation was voluntary and their identities were not revealed to sustain and achieve anonymity.

REFERENCES


Hosted file