Community Based Health Insurance Scheme as a driver for Nigeria Health Security: Evidence from Etsako West Local Government Area

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Abstract

The objective of this study is to empirically determine how Community Based Health Insurance Scheme CBHIS impacts on the Nigeria health security. The essence of the study is hinged on the believe that the introduction of CBHIS will drastically increase the health coverage, health outcome and treatment satisfaction of Nigerians, majority of whom reside in the rural communities and semi-urban areas. Primary method of data collection was adopted in the study through the construction and administering of a pre-coded questionnaire. A logistics regression analysis was utilized in analyzing the data collected. It is discovered that CBHIS exerted a significant positive impact on Nigeria health security especially in terms of coverage and satisfaction. It is recommended that the Nigeria health care managers in collaboration with the local health care providers should operate policies such as; rural communities health awareness campaign, cash reimbursement for out-of-pocket expenses etc, that will assist communities in the rural and uncovered sectors to key-into the CBHIS in order to achieve the desired health security.

Keywords: Health coverage, Insurance, Health security, Rural community, and Treatment satisfaction.

INTRODUCTION

The need to design an adequate and affordable healthcare system for every Nigeria have been and it is still a daunting task embarked upon by both government and non governmental agencies at all levels, especially given the fact that majority of Nigerians live in rural communities where adequate health coverage is near impossible. Even where healthcare exist in such rural areas the catastrophic cost still prevent the inhabitants from assessing the health care facilities. According to Gang & Karan (2009) financial constraint still represent the major impediment to adequate access to health care for marginalized sections of most developing countries.

According to Umeh & Feeley (2017), to reduce out-of-pocket payments and improve access to health care services some countries have introduced Community Based Health Insurance Scheme (CBHIS) especially for their rural communities, those in the informal sectors and the poor who mostly reside in the such communities. Xu, et,al (2005) noted that to ensure that healthcare coverage is enhanced, a payment system needs to be put in place where large pool of finance is achieved which will subsequently subsidize the sick and the poor without forcing them into liquidation or catastrophic health spending. As established in the WHO constitution of 1946 "the health of all people is fundamental to the attainment of peace and security and it is dependent upon the fullest cooperation of individuals and States"(WHO, 2002).

Because of the unique feature of CBHIS such as, the voluntary participation of the people, non-profit orientation, community management of the scheme and risk pooling, CBHIS is more suited to insure people living in the rural communities than any alternative arrangements for providing health insurance to them.

Public health security is defined as the activities required in minimizing the danger and impact of acute public health events that endanger the collective health of populations living across geographical regions and international boundaries. (WHO, 2025) From the definition above, one may define health security as, activities supporting epidemic and pandemic preparedness and capabilities at the country and global levels in order to minimize vulnerability to acute public health events that can endanger the health of populations across geographical regions and international boundaries. Equally, a report by the Centre for disease control and prevention

(2014) noted that health security matters because; i) it provides protection from infections disease threats, ii) it is economically smart, and iii) it strengthens public health systems.

However, the Nigeria health care system have witnessed some radical changes over the years in order to ensure that every household have access to health care when they need it at affordable cost.

Problem Statement

Various administrations both at the Federal, State and Local Government Area in Nigeria have adopted different measures in the past to improve on the level of health security in terms of access, coverage as well as, affordability however, such measures has not achieved its desired outcome especially in terms of coverage and affordability, this is because many people in Nigeria still live in the rural communities with very poor reach. Hence, this study presents CBHIS as a bridge to the problem of health security facing Nigeria.

Research question

The research questions that this work bring to bare in the cause of this study are;

- Does CBHIS has a positive impact on Nigeria health security?
- Are people who live in the rural areas satisfied with the health care provided through CBHIS?
- Does CBHIS has a higher coverage than the traditional health care provision?

LITERATURE REVIEW

Conceptual review.

The Nigeria health insurance scheme operational guideline (2002) defined CBHIS as a non-profit health insurances program for a cohesive group of households/ individuals or occupation based group, formed on the bases of the ethics of mutual and collective pooling of health risks in which members take part in the management.

CBHIS vary in design and implementation but they are strictly based on the principles of risk pooling and involve timely payment of the agreed premium aimed at reducing direct payment at the point of service, because at point-of-service may prevent catastrophic spending on health services (Bennett, etal, 2004; Borghi, 2006; and Ensor & Ronoh, 2005). The world health organization (WHO) in 2005 passed a resolution that social health insurance should be supported as one of the strategies used to mobilize more resources for health, for risk pooling, for increase access to healthcare for the poor and for developing and delivering of quality healthcare in all its member states and especially in low-income countries (WHO, 2005). Hsiao & Shaw, (2007), noted that this strategy is also supported by the World Bank.

How Community Based Health Insurance Scheme (CBHIS) work.

Community based health insurance scheme operates as an institutional separation between the purchasers of health care from the providers of healthcare with the beneficiary having to enroll into the insurance funds while the provider can either be a public or private institution (Wagstaff, 2007). They are generally characterized by independent and quasi independent insurance funds, a reliance on mandatory earmarked contributions and a clear link between those contributions and the right to a defined package of health care (Gottret & Schieber, 2006).

Community based health insurance scheme may mandate enrollment for both those in the workplace and those outside the workplace. In some cases the community-based health insurance scheme may be a part of larger scheme designed and operated by non governmental agencies where health care is provided for specific ailment or disease

Advantages of community based health insurance scheme (CBHIS).

According to Abubakar, (2018), community based health insurance scheme has a number of advantages which include;

i. It is one of the significant drivers of improvement in the health care provision by encouraging investment and innovation

ii. It helps to improve the quality and efficiency of public health care system by continually bench-marking it.

iii. It saves members of the host communities from catastrophic health expenses by keeping the transaction cost low

iv. It is sometimes designed to meet the specific health challenges of a community

v. The scheme may sometimes allow free enrollment for the poor who cannot afford any premium.

vi. They add to the productivity of the host community through reduction of manpower due to ill health

vii. It leads to a wider participation and coverage in the healthcare system

viii. A remarkable level of efficiency is achieved in private community based health insurance scheme unlike the public health institution who don't feel the need for competition

Disadvantages of community based health insurance scheme

Community based health insurance schemes are usually associated by the following pitfalls;

i. People who cannot afford the stated premium are mostly left out of the scheme thereby denying health care to them.

ii. If not properly regulated people in the host community may be surcharged in an attempt of profit maximization by the health providers

iii. The idea of community based health insurance scheme may be defeated if some identifiable group is allowed to enroll free because others may assume the status of being poor if they know that they will benefit free of charge. This may result in the non sustainability of the scheme.

iv. In the Nigeria case the insured is expected to pay 10% of the cost of treatment, however in most cases they are not part of the process of determining and arriving at that 10% and they mostly pay an amount higher than 10%.

Theoretical Review

This study is based on expected utility theory that concerns decision-making under uncertainty. According to Manning and Marquis (1996) reported in Hottordze (2008), expected utility theory demands that enrolment in insurance involves choice which is characterized by probability of occurrence or non occurrence of illness despite the premium paid. The theory assumes that people are risk averse and undertake choices between taking a risk that has different implications on their wealth. Therefore, individual households are uncertain whether they will fall ill or not.

The choice of individual households to enroll in community based health insurance scheme in Nigeria is utility expected .In the microeconomics study, utility remains a potent tool for analyzing consumer behaviour as it measures the level of satisfaction individual households derived from the consumption of health. The utilization of utility theory as a framework in this study also stemmed from the fact that health is established in the literature of health economics to be either as investment or consumption goods(Grossman,1972) cited by (Abubakar, 2018) that yield satisfaction to individual households.

Empirical review

Different scholars have proffered empirical finding on the relationship between community based health insurance scheme and health security using different data set as well in different countries Sisira & Samaratunge (2020). For example, in a recent study by Wu & Raghunathan (2019) indicates that individuals with insurance are more likely to seek preventive care, regular check-ups, and early intervention for chronic disease. The study was conducted using data from the USA.

Equally, Asaria, et, al. (2016) found that insured individuals tends to have better health outcomes because they can access services without the prohibitive cost burden. The study noted further that, in countries with universal healthcare system like the UK and Canada, health insurance ensures that healthcare is accessible to all citizens, thereby reducing health disparities across income level.

Similar studies by Martin, D, Miller AP. Quesnel Vallee, A & Caron NR Vissandjee, B Marchildon GP (2018) noted that inn countries with universal healthcare system ensure that healthcare is accessible to all citizens, reducing health disparity across income levels

Nguyen , Rajkotia & Wang (2011) in another study found that in the developing countries like Ghana, the National Health Insurance Scheme has contributed to increased healthcare utilization and better health outcomes especially in rural area.

Finally, Eze & Chukwuma (2024) concluded that while expanding health insurance is essential, it is however no sufficient to generate substantial improvements in health outcomes or meaningful poverty reduction without concurrent investments in healthcare infrastructure and workplace development.

MATERIALS AND METHODS

The materials used and the method of analysis utilized in this study are adequately explained under the following sub-heading

Study design

The study design adopted by the study is the survey method. Under the primary method a pre-coded questionnaire is constructed and administered to both the insurer, the insured and the health care provider.

Study location

Both the insurer and the healthcare providers are located in Etsako West LGA in Edo State. Hence, the study location is Etsako West LGA.

Study duration

The period of ten months from January, 2022 to October 2024

Sample size calculation

The sample size was estimated on the basis of a single proportion design, the targeted population from which we randomly selected our samples is considered to be above two thousand owing to

the nature of the number of communities around Etsako West LGA We assumed a confidence interval of 10% and a confidence level of 95%, the sample size actually obtained for the study is one hundred and twenty insured individuals.

Subjects and selection methods

The study population was drawn from all insured patience who presented themselves for treatment in selected health centre within Etsako West LGA with different ailments under the NHIS handbook and regulations that the doctors have actually examined and treated and prescriptions given to them

Inclusion criteria

i. All insured patients that have visited the clinic

ii. Both male and female

iii. Patients who are 18 years and above

iv. Patients with non-surgical ailments.

v. Patients with non ailments such as HIV, AIDS, tuberculosis and similar disease.

Exclusion criteria

i. Patients with genetic disorders

ii. Patients with history of drug abuse

iii. Patients with life-threatening diseases

Procedure

After a written informed consent was obtained, a well-designed pre-coded questionnaire was used to collect the needed data from the selected patients the questionnaire included both social-demographic, health care outcomes, satisfaction of health care provided, treatments type and cost of treatment, payment methods etc.

Specification of Model and Description of variables

In line with Abubakar (2018), Logistic regression model was adopted in this study which was specified as thus: $\ln\acute{Y} = \beta 0 + \sum\beta 1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e_i$

Where

lnY = Natural log of the probability that measures the outcome of health security in Nigeria resulting from community based health insurance scheme.

X_i = represent the dichotomous explanatory variables such as SWTL(measures respondents' satisfaction with the level of treatment), HCBIHS(measuring the effectiveness of the CBHIS scheme) , WYRCHI (measuring respondents' willingness to recommend the scheme to others) and FTFE(measures the level of free treatment received under the community based health insurance scheme).

β = represents the parameter or co-efficient of the variables estimated

e = the random error term that assumes to have zero meant and constant variance.

A priori, the variables are expected to have positive effect on the dependent variable (DEIHS) which measures the outcome of the health security in Nigeria.

Statistical analysis

Data collected for the study was analyzed using Statistical Package for Social Sciences (SPSS version 22) software. A logistic regression was conducted to determine the impact of the scheme on the insured in terms of increased health care outcome, access to drugs and healthcare satisfaction

RESULTS AND DISCUSSIONS

The study made use of binary logistic regression techniques to estimate the impact of community based health insurance scheme on Nigeria health security. The estimated logistic regression result is presented as follows:

Ln(Y) = 0.405 + 1.393 SWTL – 1.151HCBIHS – 0.049WYRCHI - 1.067FTFE

Se (0.732) (0.659) (1.037) (0.557) (0.913)

Wald Stat. {3.616) (3.052) (0.002) (3.664) (0.19)

Exp(B) OR (4.025) (0.316) (0.952) (2.907) (1.500)

Sig.(P-value) 0.05 0.08 0.96 0.56 0.66

Table 2. Summary Presentation of Logistic Results of the Model

Dependent variable. Health security. (DEIHS)					
	β	SE	Wald	Exp(β) OR	Sig. (P-value)
Constant	.405	0.732	3.616	4.025	0.057
SWTL	1.393	0.659	3.052	0.316	0.081
HCBIHS	-1.151	1.037	0.002	0.952	0.962
WYRCHI	-.049	0.557	3.664	2.907	0.056
FTFE	1.067	0.913	0.197	1.500	0.657
Summary Stat. (X^2)= 8.16,df=4, p<0.1 Nagelkerke R^2=0.94(9.4%) Classification accuracy 75%					

*$P < .05$. **$P < .01$

Note: all values are rounded up to 2 decimal places.

The estimated logistic of the impact of community based health insurance scheme on Nigeria health security revealed that respondents' satisfaction with the level of treatment (SWTL) with (β = 1.393, Wald Stat.=3.616, p< 0.1) indicated that a unit change in the respondents' satisfaction with the level of treatment(leads to a corresponding increase in the improvement of health security in Nigeria(DEIHS). The positive relationship is statistically significant at 10% level therefore, providing adequate information to reject the null hypothesis and accepting the alternative hypothesis one of the study. This implies that respondents' enrolment in the Community Health Based Insurance Scheme contributes positively to the improvement of health security in Nigeria. The calculated Odds Ratio as the Exp (B) indicated that respondents who are

treated under the enrollment in the Community Based Health Insurance Scheme (CBHIS) scheme are 0.316 or 68.4% more likely to have improved health security than the one who do not enroll in the scheme.

The variable that captured respondents' response on the effectiveness of the CBHIS scheme represented as HCBIHS with $\beta = -1.151$, Wald Stat.= 0.002, $p > 0.1$) indicates a negative relationship which implies that a unit change in respondents enrolment in the scheme leads to 1.151 decrease in the respondents health security. Though, this variable not only behaves contrary to our a priori expectation but also non significant at 10%. However, the negative relationship revealed by this variable is a strong indication of the respondents' dis-utility derived in the service of the scheme that demands further investigation. However, calculated Odds Ratio (OR) of 0.952 indicates the probability of the enrolled individuals to have their health safety decline by 4.8% more than those who do not enroll in the scheme.

The estimated variable representing the response of the respondent on the willingness to recommend the scheme to others which is captured as (WYRCHI) $\beta = -.049$, Wald Stat.= 3.664, $p > .05$) implies a negative relationship between health security and willingness to recommend the scheme to other potential enrollee. This indicates that a unit change in the willingness of the respondents to recommend the scheme to others leads to decrease in the health security and statistically significant at 5% level.

The estimated Odds Ratio (OR) of 2.907 showed that the willingness of the enrollee to recommend the scheme to other potential enrollee as means of actualizing health security declines by 190.7% more than those who do not enroll in the scheme.

To measure the category of the enrollee who receive free treatment under the community based health insurance scheme to improve the health security in Nigeria, the estimated variable (FTFE) $\beta = 1.067$, Wald Stat.= 0.197, $p > 0.657$) shows that there is positive relationship between the two variables, this implies that a unit change in the level of treatment received by respondents leads to a corresponding increase in the level of health security in Nigeria. The Odds Ratio (1.50) calculated indicates the probability that free treatment received by enrollee

is 50% likely to increase the health security of the individual households more than the non enrollee.

CONCLUSION

The findings revealed that Community Based Health Insurance Scheme (CBHIS) has contributed to health security in Nigeria as gathered from the level of satisfaction patients derived from the scheme. This also motivated the increases in the willingness of the respondents (patients) to recommend the scheme to other potential enrollee to enhance their health security. Although, it was discovered that the level of effectiveness of the scheme is still very poor as it has not positively impacted on the overall health security in Nigeria. The effectiveness of the coverage was also portrayed by the inadequate free health treatment a group of enrollees received from the scheme.

The study, therefore, suggests for policy implications that, effort should be geared towards making provision of free healthcare inclusive, that is, accessible to every member of the rural communities irrespective of the contributions made by the enrollee. This is to be done by government instituting policy of health intervention that is pro-poor with effectiveness as its watchword.

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