Texila International Journal of Academic Research
Special Edition Apr 2022
DOI: 10.21522/TIJAR.2014.SE.22.01.Art006

Knowledge of Community Based Health Insurance among Residence of Katsina State, Nigeria; A Comparative Cross-Sectional Study

Yahaya Shamsuddeen Suleiman[1*], Mustapha Mukhtar[2], Lawal Nasir[3], Runka Jamilu Yahaya[1]
[1]*State Primary HealthCare Agency, Katsina, Nigeria*
[2]*Department of Economics, Bayero University, Kano, Nigeria,*
[3]*State Contributory Health Management Agency, Katsina State, Nigeria*

Abstract

Enrollment into any form of insurance is very low in Katsina State, with the majority of people paying out of pocket for health care. Knowledge of Community Health Insurance (CHI) has been found to influence enrolment into the scheme. To compare differences in Knowledge between community-based health insurance member households and non-member households and to identify factors associated with the knowledge. A comparative cross-sectional descriptive study was conducted among household heads in Katsina State, Nigeria. A sample size of 300 was determined, and respondents were selected using the multistage sampling technique, data was analyzed using SPSS. The mean age of respondents was 46.82±13 and 44±12.5 years for ensured and non-ensured groups, respectively. Heads of the households were predominantly males and currently married, with 97.3% and 93.3% for CBHI members compared to 82.7% and 99.3% in non-member households, respectively. A greater proportion of the sampled households had Quran education only. The majority of respondents in both groups have heard about CHI, and the source of information was from community leaders. There was no statistically significant difference in the level of knowledge of CBHI between insured (56. %7) and uninsured (47.3%) households (t Stat =4.642, p= 0.07). Knowledge of CHI is higher in an insured group than non-insured but there is still a knowledge gap in both groups. To ensure that health care is accessible to all, CHI should be promoted, and more people should be encouraged to join.

Keywords*: Community, Health Insurance, Knowledge.*

Introduction

Universal Healthcare Coverage (UHC) has become elusive in most of developing countries, with the majority of the populace remaining over-reliant on direct out-of-pocket (OOP) expenses that include over-the-counter payments for medicines and fees for consultations and procedures [1]. The World Health Organization (WHO) regards medical fees as a significant barrier to accessing healthcare coverage and utilization and has stated that the only way to reduce reliance on direct payments is for governments to encourage the risk-pooling prepayment approach [1]. In this regard, community-based health insurance (CBHI) has emerged as a substitute to user fees.

CBHI is a form of Micro Health Insurance, which is a predominant term for health insurance targeted at low-income earners. The unique features of CBHIs are the community involvement in taking the lead in its setup and in its management. They are generally designed with the following features: Pooling of health risks and of funds which occurs within a community or a group of people who share common characteristics, such as geographical location or occupation. Membership premiums are most times flat rate and independent of individual health risks. The scheme operates on a nonprofit basis and is often voluntary [2].

Received:05.02.2022 ***Accepted: 13.03.2022*** ***Published on: 13.04.2022***
Corresponding Author: drshamsu01@gmail.com

CBHI reduces out of pocket expenditure and improves cost recovery, and although its effect on the quality of health care and efficiency of health services are unclear, it appears to be the most appropriate insurance model for the informal sector and rural areas where incomes are unstable. Additional benefits of CBHI include- community-based health promotion and disease prevention activities, strengthening of the PHC system, and public-private partnerships in healthcare provision. [2].

Despite the above-mentioned benefits, studies have shown that only a small proportion of the nation's population are aware of CBHI, and the few schemes available are therefore under-utilized as even fewer are willing to pay or contribute to the scheme. [3].

Katsina State, with an estimated total population of over 8 million population growth rate of 3%, has high infant and under-5 mortality rates of 68/1000 and 135/1000 live births, respectively, and has recorded one of the poorest indices for vaccine and immunization coverage over time.[4].

The majority of residents (99.3%) of Katsina residents pay out of pocket for health care, and only about 0.5% have some form of health security (insurance or *retainer ship*) [5].

Information is lacking on the implementation of CBHIS in the State, the reason for the underutilization of the scheme, and whether people have the requisite knowledge. Findings from this study could help address gaps and help fashion out ways to improve uptake of the scheme. This study aims to compare the difference in knowledge of CBHI between Community-Based Health Insurance member households and non-member households. Materials and Methods.

Study Area

Katsina state is located between latitude 11.7^0 and 13.32^0 N and between longitude $6.52^0$and 9.02^0 E. The state shares border with Zamfara and Sokoto state in the west, Kano and Jigawa state in the east, Kaduna state in the south and Niger republic in the north. It has an area of 23,938 square kilometres and a projected population of 8,536,138.00 based on the 2006 census, with a projected growth rate of 3.0%per annum.

In Katsina, the health sector is financed through different sources and mechanisms, including but not limited to statutory allocation, tax revenue, out-of-pocket payments (OOPs), donor funding, and health insurance (social and community). The difference in the proportionate contribution from these stated sources determines the extent to which the health sector will go in achieving a successful health care financing system [5]. There are 12 Mutual Health Associations with 41,219 registered financial members as contributors.

Study Design

The study was a cross-sectional comparative study.

Study Population

The study populations were households in Katsina State. This is because CBHI coverage is modelled as the household head's coverage in the country. Household heads will be considered as the study unit.

Inclusion Criteria

The inclusions criteria of the study were households heads that are 18 years old and above, who were engaged in the informal sector for the source of living, enrolled into the CBHIS and benefits for more than one year and were not covered by other insurance schemes for health (i.e., social health insurance and Private Health Insurance).

Exclusion Criteria

The exclusion criteria were household heads that were employed in the formal sector for the source of living (including pension) and/or covered by other insurance schemes.

Sample Size Determination

The sample was estimated using the study

design for comparisons of two groups population proportions formula with the following assumptions: 80% statistical power with a level of significance at 5%, insured to the uninsured ratio of 1:1, and the proportion of health service utilization was 35% for the insured household and 20% for the uninsured household (Mebratie, 2015).

$$n = k\ \frac{[P_1(1-P_1)\ +\ P_2(1-P_2)]}{(\ P_{1\_}-P_2)^2}$$

Where:

n = Minimum sample size per group.

K = Constant, which is a function of α and β.

The level of significance shall be set at 5% (α=0.05).

The power of the study shall be set at 80% (0.8) at α 0.05 and 1-β of 80% K = 7.8.

P_1 = Proportion of health service utilization was 35% for the insured =0.35 (Mebratie, 2015).

P_2 = Proportion for the uninsured household is 20% = 0.2 (Mebratie, 2015).

$1\text{-}P_1\,(q_1)$ = complementary probability of P_1 = 1-0.35 =0.65.

$1\text{-}P_2\,(q_2)$ = complementary probability of P_2 = 1-0.2=0.8.

$$n = \frac{7.8[0.35\ x\ 0.65) + (0.2\ x\ 0.8)]}{(0.35-0.2)^2}$$

$$= \frac{7.8\ X\ 0.2275\ + 0.16)}{0.0225\ 0.225} = \frac{3.0225}{134}$$

Allowing for 90% response rate, the minimum sample size (n_s) is given as: $n_s = n/0.9$= 134/0.9 = 149 ≈ 150per group.

Sampling Technique

The Mutual Health Association constitutes 12 Community (units) with 41,219 registered financial members (Sampling frame).

Stage 1

Selection of one community from each senatorial zone using Simple Random Sampling Technique.

Katsina zone: Dutsinma was selected with 2,995.

Daura zone: Mashi was selected with 3,390.

Funtua zone: Dabai was selected with 5,727.

Therefore**,** the proportionate allocation was used to select the study respondents (sample unit) from the sample frame that is:

$$= \frac{\text{Registered financial members in a community}}{\text{Total registered financial members in all the community}}\ X\ \text{Sample size}$$

Dutsin-ma = 2,995/12,112 × 150 = 37

Mashi = 3,390/12,112 x 150 = 42

Dabai = 5,727/12,112 x 150 = 71

These give the number of study respondents to be interviewed from each community.

Stage 2

Systematic sampling was used to select the study subject, using Dutsin-ma with 2,995 financial members and 37 study respondents as an example.

Sample interval= sample frame / Sample size

2,995/37 = 81.

Using simple random sampling, a number was selected from 1-81 by balloting to be the starting point for selecting the respondents and continue skipping every nth number till the desired number was enrolled.

Study Instrument

The data was collected using a hard copy structured questionnaire and an Open data kit (ODK) pre-loaded on the android phone of the enumerators.

Collection Technique

The data was collected from the selected CBHI member and non-member households using pre-tested interviewer-administered structured questionnaires adopted from the Katsina State Contributory Healthcare Management Agency Household Baseline Survey for implementation of the scheme in the State. Then the survey questionnaires were developed to elucidate information on the basic

demographic and socio-economic characteristics of the households, knowledge of CBHIS and healthcare utilization. The survey questionnaire was translated into Hausa, the State language in which most of the study area residents adequately listen and speak, and then back-translated into English to validate its consistency. Interviews were conducted in a location at the respondent's home where he/she felt comfortable. The survey time was estimated after piloting the survey tools. And was done using both the hard copy and ODK install application in the android phone.

Pre-Testing of Instrument

The survey instrument was pre-tested in Batagarawa LGA (which is not one of the wards selected for the study) by the supervisors and the field enumerators, whereby 10% of the total sample size of households were enrolled into the pilot study. The pretest provided a means to review the validity, reliability, appropriateness, sufficiency, and relevance of the questions. The pretest also helped in validating the questions within the sections to have a logical flow and correct some skip instructions in the ODK.

Data Management and Analysis

Study Variables

The dependent variable of the study was knowledge of CBHIS.

Independent variables were CBHI scheme membership status of the households; demographic and socioeconomic characteristics of the individual head and the household (such as age, sex, marital status, education and occupation of the household head and monthly income and size of the household).

Measurement of variables

For the assessment of the knowledge of respondents, each correct response was given a score of 1 and a wrong answer zero, and these were summed up to give a total score for each respondent. A score of 50% and above will be regarded as adequate knowledge, while a total score of less than 50% is regarded as inadequate knowledge. To ensure quality of household survey data, training was conducted for data collectors and field supervisors on the data collection tools, sampling of the study subjects, ethical issues, and data collection procedures.

Data Analysis

The data were entered and analyzed using Statistical Package for the Social Sciences (SPSS) version 25 software. Data were cleaned by running frequency before analysis and re-coded when necessary. Descriptive statistics were computed using cross tab, percentage and mean. Chi-square tests were used to identify the various variables mentioned as the outcome measures, T-tests for comparing means of the quantitative variable which could be determinants for membership of the CBHI scheme and all relationships were evaluated at a 0.05 level of significance.

Ethical Considerations

Ethical approval was sought and obtained from the Ethical and Scientific Committee of the Katsina state ministry of health Ethics and Research Committee (MOH/ADM/1152/1/491). Informed written consent from the participants was obtained before participating in the study. Permission was obtained from PHC departments as well as District Heads of the respective LGAs.

Results

The study included a sample of 150 CBHI members and 150 non-member households, yielding a 100% response rate (Table 1). The mean age of respondents was 46.82 ±13 and 44 ± 12.5years for ensured and non-ensured groups, respectively. Heads of the sample households were predominantly males and currently married, with 97.3% and 93.3% for CBHI members compared to 82.7% and 99.3% in non-member households, respectively. The greater proportion of the sampled households had Qur'an education, of which 31.3% of the CBHI members and 24% of the non-member households had completed primary level

education.

Almost all respondents from the member group (95.3%) and 99.3% from the non-member group were Hausa by the tribe. With Estimated monthly income for the study, households ranged between 900 (Naira) and 300,000.00 (Naira). The mean monthly income was 21,751 (Naira) for CBHI members compared to 19,186 (Naira) for non-member households. Almost half of the member group (44.7%) had a Family size of 5-10, while over half (52%) of non-member group had a family size of 5-10. Almost all (99.3%) of the member group and the majority (76.6%) of the non-member group are aware of CBHI. The predominant source of information is through the community leaders, followed by friends/colleagues, then Health workers, while the Mass media was the least source of information (Table 3).

More than half 56.7% of the member group have adequate knowledge while 43.3% of the non-member group have adequate knowledge, although the difference is not statistically significant (p= 0.07) (Table 4).

Age and number of children in the household were found to be associated with Knowledge of CBHI. (Table 5).

Table 1. Socio-demographic Characteristics of the Respondents

Variables	CBHIS Membership		Total Sample N = 300
	Member (%)	Non-Member (%)	
Age in Years			
20-40	53(35.3)	79(52.7)	132(44)
41-60	77(51.3)	61(40.7)	138(46)
>60	20(13.3)	10(6.7)	30(10)
Gender			
Male	146(97.3)	124(82.7)	270(90)
Female	4(2.7)	26(17.3)	30(10)
Marital Status			
Single	8(5.3)	1(0.7)	9(3)
Married	127(84.7)	149(99.3)	276(92)
Separeted	15(10)	0(0)	15(5)
Ethnicity			
Hausa	143(95.3)	138(92)	281(93.7)
Fulani	7(4.7)	12(8)	19(6.3)
Level of Education			
primary	47(31.3)	36(24)	83(27.7)
secondary	17(11.3)	16(10.7)	33(11)
Tertiary	12(8)	19(12.7)	31(10.3)
Quran only	73(48.7)	79(52.7)	152(50.7)
Others	1(0.7)	0(0)	1(0.3)
Occupation			
Farmer	59(39.3)	63(42)	122(40.7)
Civil Servant	1(0.7)	0(0)	1(0.3)
Business	71(47.3)	70(46.7)	141(47)
Unemployed	10(6.7)	6(4)	16(5.3)
Retired	4(2.7)	3(2)	7(2.3)
Others	5(3.3)	8(5.3)	13(4.3)

Number of Children in the Household			
<5	44(29.3)	32(21.3)	76(25.3)
5-10	67(44.7)	78(52)	145(48.3)
>10	39(26)	40(26.7)	79(26.3)

Table 2. Indices of Assessment of Knowledge of CBHIS

Variable	Insured n (%) n = 150	Uninsured n (%) n = 150	Difference
Health Contributions helps reduce out of pocket spending on healthcare			
Correct response	138(92)	106(70.7)	32(21.3)
Incorrect response	12(8)	44(29.)	
There must be minimum of 1000 financial members in Mutual Health Association			
Correct response	50(33.3)	8(5.3)	42(28)
Incorrect response	100(66.7)	142(94.7)	
There must be bye laws for Mutual Health Association			
Correct response	58(38.7)	71(47.3)	-13(8.7)
Incorrect response	92(61.3)	79(52.7)	
Health contributions help in achieving universal health coverage			
Correct response	127(84.7)	83(55.3)	44(29.3)
Incorrect response	23(15.3)	67(44.7)	
Health Contributions is only for the rich and public/civil servant workers			
Correct response	122(81.3)	144(96)	-22(14.7)
Incorrect response	28(81.3)	6(4)	
People in the informal and private sector cannot be covered by health contributions			
Correct response	112(74.7)	137(91.3)	-25(16.7)
Incorrect response	38(25.3)	13(8.7)	
Health contributions covers all health problems			
Correct response	43(28.7)	73(48.7)	-30(20)
Incorrect response	107(71.3)	77(51.3)	
Health contributions is a business for community leaders			
Correct response	132(88)	146(97.3)	-14(9.3)
Incorrect response	18(12)	4(2.7)	
CBHIS chooses a hospital for you to access care			
Correct response	72(48)	113(75.3)	-113(27.3)
Incorrect response	78(52)	37(24.7)	
CBHIS services increase waiting time for patient consultation			
Correct response	109(72.7)	133(88.7)	-24(16)
Incorrect response	41(27.3)	17(11.3)	

Table 3. Awareness and source of information about CBHIS

Variable	Insurance status of households	
	Insured n (%)	Uninsured n (%)
Heard Information on CBHIS		
Yes	149(99.3)	115(76.7)
No	1(0.7)	35(23.3)

Source of Information on CBHIS	n = 149	n = 115
Community leaders	73(48.9)	43(37.4)
Friends/colleagues	34(22.8)	35(30.4)
Radio/ Television	1(0.7)	8(7)
Doctors/Healthcare worker	41(27.5)	29(25.2)

Table 4. Overall, Knowledge score of Respondents

Variables	Adequate Knowledge >50% score		Inadequate Knowledge <50% score	
	Frequency	Percent	Frequency	Percent
CBHIS Members	85	56.7	65	43.3
CBHIS Non-Members	71	47.3	79	52.7
N= 150; t Stat = 4.642; P-value = 0.07				

Table 5. Association between Socio demographic characteristics of respondents and level of knowledge of CBHI

Variables	CBHIS Members		CBHIS Non-Members		
	% Adequate Knowledge (>50% score)	% Inadequate Knowledge (<50% score)	Adequate Knowledge (>50% score)	Inadequate Knowledge (<50% score)	P-value
Age					
20-40	69.8	30.2	34.2	65.8	
41-60	54.5	45.5	59.0	41.0	0.02*
>60	30.0	70.0	80.0	20.0	
Gender					
Male	58.2	41.8	57.5	42.5	0.15
Female	0.0	100.0	6.7	93.3	
Marital Status					
Single	50.0	50.0	11.1	88.9	
Married	60.6	39.4	55.6	44.4	0.14
Separeted	26.7	73.3	0.0	100.0	
Etnicity					
Hausa	58.0	42.0	49.6	50.4	0.06
Fulani	28.6	71.4	31.6	68.4	
Level of Education					
primary	66.0	34.0	34.1	65.9	
secondary	58.8	41.2	43.8	56.3	0.14
Tertiary	75.0	25.0	37.5	62.5	
Quran only	46.6	53.4	55.3	44.7	
Others	100.0	0.0	0.0	0.0	
Occupation					
Farmer	76.3	23.7	67.2	32.8	
Civil Servant	100.0	0.0	100.0	0.0	
Business	45.1	54.9	41.4	58.6	0.09
Unemployed	20.0	80.0	0.0	100.0	
Retired	75.0	25.0	0.0	100.0	

Others	40.0	60.0	16.7	83.3	
Number of Children in the Hosehold					
<5	47.7	52.3	28.9	71.1	
5-10	58.2	41.8	49.3	50.7	0.02*
>10	64.1	35.9	61.5	38.5	

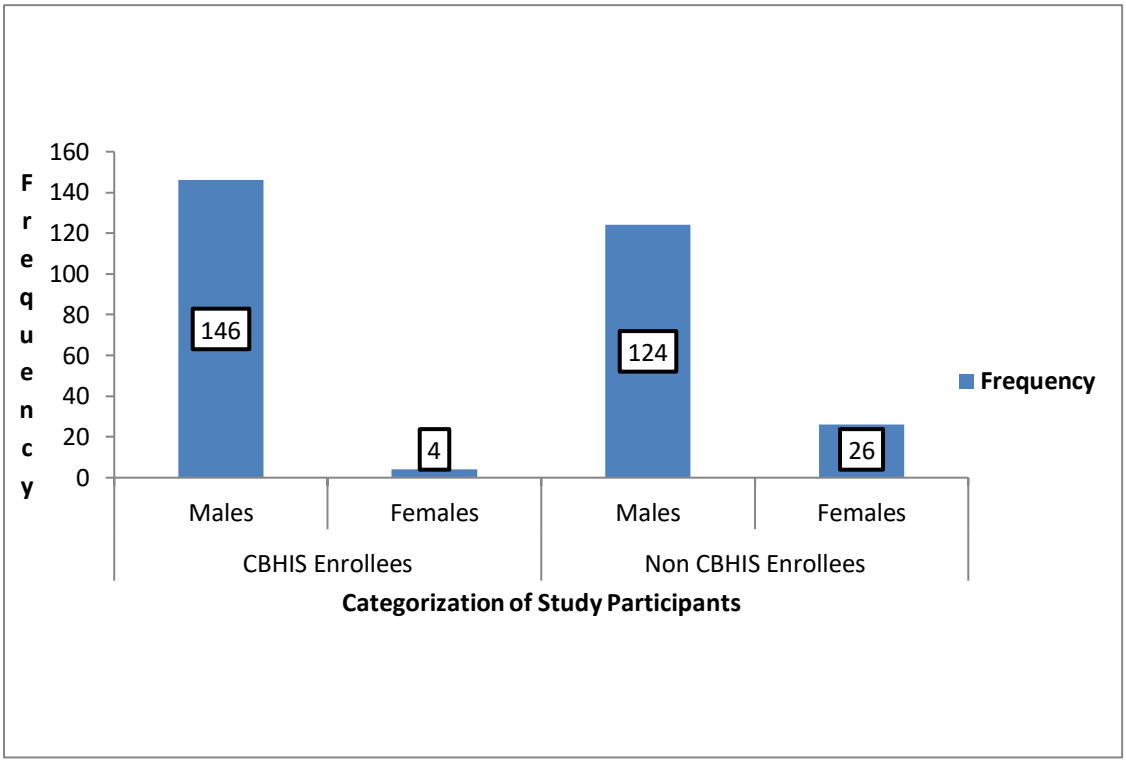

Figure 1. Sex Distribution of Respondents

Discussion

Knowledge of Community Health Insurance (CHI) has been found to influence enrolment into the scheme. A study conducted in Nigerian Capital City realized that only 13% have a good understanding of the concept of the scheme [6].

This is in contrast to this study, whereby both member and non-member groups had a good awareness of the scheme (99.3% & 76.7%), respectively. This could be attributed to the close bonding among the communities and the fact the scheme has been long-standing, and a lot of sensitizations have taken place.

Another reason why awareness was high was that health workers usually inform non-member households about the scheme anytime they seek for medical consultations. Another study among the residence of a suburb in Lagos found that only 9% had good knowledge with significant association between knowledge and up-take (7). This contrast with our study which both CBHIS members and Non-Member group had relatively good knowledge.

The difference could be due to the fact that differences in Socio-demography characteristics. Lagos is mainly cosmopolitan city with diverse people while our study was carried out in predominantly rural communities with strong community ties and kinship. The study also establish relationship between knowledge and uptake of the scheme which our study also established.

A study in a rural community in North central Nigeria revealed that 71% of the respondents have good knowledge, 91% not members of any scheme, and 93.6% willing to pay. [8] This is

like our study. However, the study participants were mainly students from a tertiary institution, so their level of education could contribute to their high knowledge of CHI. For our study, it is mainly in rural communities with a higher proportion of participants having only Quranic education, but because of high community involvement during the planning and implementation, the knowledge of the scheme was high.

The predominant source of information about the scheme is from Community leaders. This has led to more awareness about the scheme in both groups. This finding is like in the suburb of Lagos [7] even though the level of awareness is more in our study mainly due to the establishment of the scheme for a long time.

The Member groups have a higher level of knowledge compared to the non-member group, although the difference is not statistically significant. This is not unexpected because the people who are not enrolled interact with the enrolled group. Being a rural area, information sharing is easy and close and personal interaction is common. Age and number of people in a household are found to be significantly associated with knowledge of CBHI. This is in tandem with a study that suggested that enrolments in CBHI were positively associated with household income, age of the household head and household size, among other factors [9].

Conclusion

Knowledge of CHI is higher in an insured group than non-insured but there is still a knowledge gap in both groups. To ensure that health care is accessible to all, CHI should be promoted, and more people should be encouraged to join.

Acknowledgement

We gratefully acknowledge the support of the Katsina State Ministry of Health, the National Health Insurance Scheme, data collectors and study participants. Our special appreciation to the District Heads of Mashi, Dutsinma and Danja.

Conflict of Interest

The authors wish to declare unequivocally that there is no conflict of interest in conducting and presenting this paper.

References

[1] The World Health Report: Health System Financing: The Path to Universal Coverage, 2010, http://www.who.int/whr/2010/whr10_en.pdf. Accessed 2nd August 2020.

[2] WHO 2020. Community-Based Health insurance Scheme. https://www.who.int/news-room/fact-sheets/detail/community-based-health-insurance-2020.

[3] Onwujekwe.O, Valenyi. E. Feasibility of voluntary health insurance in Nigeria. 2006. The World Bank.

[4] National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF). 2017 Multiple Indicator Cluster Survey 2016-17, Survey Findings Report. Abuja, Nigeria: National Bureau of Statistics and United Nations Children's Fund.

[5] Nasiru, L., Mohammed, T.S., Hassan, A., Shamsuddeen, Y (2021). Health Care Access and Utilization among Households in Katsina State Northwestern, Nigeria. *International Journal of Tourism and Hotel Management*: 2641-6948.

[6] The World Health Report 2000: Health Systems: Improving Performance, 2000 http://www.who.int/whr/2000/en/whr00_en.pdf. Accessed 2nd August 2020.

[7] Yusuf HO, Kanma-Okafor OJ, Ladi-Akinyemi TW, Eze UT, Egwuonwu CC, Osibogun AO. Health Insurance Knowledge, Attitude and the Uptake of Community Based Health Insurance Scheme Among Residents of a Suburb in Lagos, Nigeria. *The West African Journal of Medicine*. 2019; 36(2):103-111.

[8] Carrin G, Waelkens MP, Criel B: Community-based health insurance in developing countries: a study of its contribution to the performance of health

financing systems. Trop Med Int Health, 2005, 10 (8): 799-811.

[9] Dror DM, Hossain SA, Majumdar A, Pérez Koehlmoos TL, John D, Panda PK. What Factors Affect Voluntary Uptake of Community-Based Health Insurance Schemes in Low- and Middle-Income Countries? A Systematic Review and Meta-Analysis. *Plos One*. 2016 Aug 31;11(8): e0160479. doi: 10.1371/journal.pone.0160479. PMID: 27579731; PMCID: PMC5006971.