Original Article

Willingness to Enroll and Pay for Community-Based Health Insurance, Decision Motives, and Associated Factors among Rural Households in Enugu State, Southeast Nigeria

EM Oluedo[1], E Obikeze[1,2], C Nwankwo[1,2], I Okonronkwo[1,3]

[1]Departments of Health Administration and Management, [2]Health Policy Research Group and [3]Nursing, College of Medicine, University of Nigeria, Enugu Campus, Nigeria

Received: 11-Sep-2022;
Revision: 07-Mar-2023;
Accepted: 12-Mar-2023;
Published: 03-Aug-2023

ABSTRACT

Background: Over 70% of Nigeria's population is poor and rural, and most lack financial risk protection against ill health. Community-based health insurance (CBHI) may be an essential intervention strategy for ensuring that quality healthcare reaches the informal and rural populations. **Aim:** This article explores the willingness to enroll (WTE) and willingness to pay (WTP) for CBHI by community members, their decision considerations, and associated factors in Enugu State, Nigeria. **Materials and Methods:** We adopted a cross-sectional survey design with a multi-stage sampling approach. A validated and pre-tested questionnaire was used to elicit information from the respondents. WTE and WTP for CBHI was determined using the bid contingent valuation method. A test of correlation/association (Chi-square and ordinary least square regression) was conducted to ascertain the relationship between WTP for CBHI and other variables at a 95% confidence interval. The socioeconomic status index was generated using principal component analysis. A test of association was conducted between the demographic characteristics and WTE and WTP variables. **Key Findings:** A total of 501 household heads or their representatives were included in the study which yielded a return rate of 98.2%. The finding showed that most (92.4%) of the respondents indicated a WTE in CBHI. 86.6% indicated a willingness to pay cash for CBHI, while 84.4% indicated a willingness to pay other household members for CBHI. There was a significant association between gender, marital status, education, location, and willingness to pay. The study shows that 81.6% of the respondent stated that qualified staff availability motivates their WTE/WTP for CBHI, while 78.1% would be willing to enroll and pay for CBHI if services were provided free, and 324 (74.6%) stated that proximity to a health facility would encourage them to enroll and pay for the CBHI. **Conclusion:** This community demand analysis shows that rural and peri-urban community members are open to using a contributory mechanism for their health care, raising the prospect of establishing CBHI. To achieve universal health coverage, policy measures need to be taken to promote participation, provide financial and non-financial incentives and ensure that the service delivery mechanism is affordable and accessible.

Address for correspondence: Dr. E Obikeze, Department of Health Administration and Management, Faculty of Health Sciences and Technology, College of Medicine, University of Nigeria, Enugu Campus, Nigeria.
E-mail: eric.obikeze@unn.edu.ng

How to cite this article: Oluedo EM, Obikeze E, Nwankwo C, Okonronkwo I. Willingness to enroll and pay for community-based health insurance, decision motives, and associated factors among rural households in Enugu State, Southeast Nigeria. Niger J Clin Pract 2023;26:908-20.

Access this article online

Quick Response Code:

Website: www.njcponline.com

DOI: 10.4103/njcp.njcp_612_22

Further studies are needed to explore ways to encourage participation and enrollment in CBHI and other contributory schemes among under-served populations and improve access to and utilization of healthcare services.

Keywords: *Associated factor, community-based health insurance, decision motives, Southeast Nigeria, willingness to enroll, willingness to pay*

Introduction

The provision of good health is dependent on adequate and sustainable health resources and on the adequate and efficient method(s) of financing, with the institutional delivery structure for health services critical for achieving health for all.[1] However, healthcare costs are rising faster than public revenues.[2,3] Furthermore, it appears that economic constraints are limiting the amount of money required to ensure universal health coverage.[4,5] As early as 2005, World Health Organization member countries embraced the concept of UHC.[6] Nevertheless, only a few low-and-middle-income countries have made positive strides.[7] This shortcoming is due mostly, but in part, to numerous barriers that impede access to necessary health services.[8]

The Nigerian state, a lower-middle-income country, has continued to receive poor health system ratings, particularly in healthcare financing. This assessment is demonstrably substantiated by a high household out-of-pocket expenditure of 76.60% in 2018[9] and an inconsistently shrinking government allocation and expenditure on health.[10] Then again, Nigeria is eager on achieving universal health coverage based on its ambitious national health insurance initiatives and incremental improvements to existing national insurance programs.[11] The National Health Insurance Scheme (NHIS), promulgated by Decree No 35[12] ensures that Nigerians have fair access to healthcare without an excessive financial burden. NHIS launched its programs in 2005.

NHIS programs distributed among three groups, the formal sector, informal sector, and vulnerable groups, have yet to cover up to 5% of Nigerians to date,[13] with most of these enrollees registered under the Formal Sector Social Health Insurance Program.[14] The Community-Based Social Health Insurance Program is also one of the NHIS's schemes for the informal sector. However, it has achieved minimal coverage. Consequently, the decentralization efforts of the NHIS have yielded to sub-national devolution of health insurance to Nigeria's 36 states. Each of these states will henceforth take the lead in promoting and enrolling populations within their territories. The significance of this drive is to improve enrollment and health insurance coverage. Each state is at liberty to roll out programs that will capture most populations, including CBHI.

So far, CBHI has had generally disappointing results in Nigeria and other sub-Saharan African countries.[15,16] Beyond poor communication and education[17] reports poorly targeted financial assistance to be at the bedrock of challenges. Nevertheless, "beneficiaries" lack of involvement in scheme design and management poses significant issues to properly utilizing CBHI.[18] Babatunde *et al*.[19] posited that a lack of community demand analysis to determine their willingness to enroll (WTE) and willingness to pay (WTP) and the maximum amount households are willing to pay could be significant barriers to CBHI under-utilization. According to the WHO Report (2000), community-based health insurance (CBHI) is a transitional mechanism to achieve UHC in low-income countries, particularly for rural residents who are unable to access quality healthcare services provided by their respective governments.

CBHI encompasses a wide range of packages that share at least three characteristics: not-for-profit healthcare prepayment plans, community control, and voluntary membership.[20] All these favor rural communities' informal and low-income outlook and could positively ameliorate financial shock due to accessing healthcare for such community members.[21] Rural communities in Nigeria have a more significant percentage of low-income and informal households than urban areas.

In Enugu State, Nigeria, health policy documents like the Enugu State Strategic Health Plan 2010–2015 and the Enugu State Health Financing Policy articulated CBHI as an essential intervention strategy to ensure that quality health care provision reaches the state's informal sector and rural populations.[22] With the NHIS decentralization policy to sub-national agencies in the 36 states of the federation, Enugu State since 2018 established a health insurance agency named Enugu State Universal Health Coverage Agency (ENSUHCA). This agency has yet to improve awareness and uptake of CBHI, which remains low.[23]

Policies provide critical opportunities to promote health equity and can vary significantly in establishing priorities across geographic areas. However, the policy context (i.e. political, and socioeconomic drivers) shapes the levers that communities must utilize to address change.[24] This article, therefore, highlights this policy action gap and adds to the growing literature on this topic. Our study explores the willingness to enroll and

pay for CBHI by community members, their decision considerations, and associated factors in Enugu State, Southeast Nigeria.

Materials and Methods

A cross-sectional community-based study was conducted among households in the Oji-River Local Government Area (LGA) of Enugu State, Nigeria. Data were collected in December 2017 and lasted for approximately two weeks. Oji-River is located on the Southeastern Savannah belt plains at 6′16″ north and 7′ 16″ east. According to 2006 National Census projections,[25] Oji-River LGA has 179,074 people (85,849 males and 93,225 females) and a land area of 403 km^2 (156 miles^2). Of the 29 autonomous communities that make up the LGA, two are urban, while the rest are rural. The LGA has 40 health facilities which include health centers, health posts, and a general hospital. Household heads or their representatives from all 29 autonomous communities were the study population.

The study used Fisher's formula to calculate the sample size.

$$n = \frac{Z^2 P\ (1-P)}{d^2}$$

Where:

n = Minimum sample size,

Z = Appropriate value for the standard normal deviate set at 95% confidence level (1.96),

P = Population proportion (prevalence)

d = Desired absolute precision (confident interval) or margin of error at ± 5% (0.05).

The minimum sample size calculated was 384, adjusted by 10% for non-response which gave 423 for adequate community representation, for attrition rate/non-responses then increasing for adequate community representation. Among the inclusion criteria are household heads or representatives (over the age of 18), where the household head is not available but must be residents of the communities and are willing to participate. Exclusion criteria included non-residents whether they were indigenes of the community or not.

The sampling technique used was multi-stage. In the first stage, we made a list of the villages within each autonomous community; three villages from each of the 29 autonomous communities were selected by simple random sampling using a balloting technique, bringing to a total of 87 villages from the LGA, which became our primary sampling units. In the second stage, we used a convenience sampling technique to arrive at sample size allocation for each village by dividing the total sample size (423) by the number of our primary sampling units (87), which gave approximately five households (423/87 ≈ 5). These five households selected were based on a systematic sampling approach whereby as we enter each village, we visit the third building from the first count which became the starting point, and thereafter, every 10th building on the stretch within kindreds (3, 13, 23, 33, 43). If there was no household head or a representative present in the selected building, the next line is chosen while we continued with the next 10th building.

An interviewer-administered questionnaire was the tool for data collection. Fifteen persons with a minimum Ordinary National Diploma were trained by the researchers to aid the data collection. The three-day training was conducted for the research in the purpose of the study and how to select households and fill out the questionnaire. The interview was conducted in English for those who can read and write. Others were conducted in the local dialect (Ibo), and immediately transcribed to fill out the questionnaire.

The questionnaire contained structured questions adapted from the study variables and similar studies like Enemuwe's.[20] It consisted of five sections—Section A: elicited information on the demographic characteristics of the respondents; section B: awareness of CBHIS; section C: willingness to enroll for CBHIS; section D: willingness to pay for CBHIS; section E: factors influencing willingness to enroll and pay [Appendix A]. Experts in health economics assessed the questionnaire for face and content validity concerning the study's objectives. Inputs made were used to modify the instrument before administration. We employed the Cronbach's Alpha test (test-retest) method to obtain the reliability of the measuring instrument and determine the instrument's internal consistency. Copies of the questionnaire were distributed to 30 household heads (15 each for rural and urban) that were not part of the study population. After two weeks, the same instrument was administered to ascertain the extent of a correlation between the two sets of scores obtained. The computed correlation was 0.98%, which indicated that the result was reliable [Appendix B].

The collected data were cleaned, coded, and entered using Statistical Package for Social Sciences (SPSS) version 21 software (IBM Corp.; Armonk, NY, USA and STATA, version 16) for the required analyses. Descriptive statistical methods like simple percentages, frequencies, means, and standard deviation were used for data summaries. Data were presented in tables.

WTE and WTP for CBHI were determined using the bid contingent valuation method.[26] A test of correlation/association (Chi-square and ordinary least square regression) were conducted to ascertain the relationship between WTP for CBHI and the independent variables at a 95% confidence interval. We used principal component analysis (PCA) in the Stata software package to create a continuous socioeconomic status (SES) index using information from the households' asset holdings together with the weekly cost of food.[27] The principal component of the PCA was used to derive weights for the SES index.[28,29] The assets were ownership of motorcars, motorcycles, radios, electric irons, fans, refrigerators, television sets, bicycles, and electric generators.[29] The SES index was divided into SES quartiles. We did not use income because information on income especially for those in the informal sector is reliable. A test of association was conducted between the demographic characteristics and WTE and WTP variables. A hypothetical expectation was generated to determine actual factors that influence WTE and WTP.

Results

Table 1 is the socioeconomic and demographic characteristics of respondents. The study successfully enrolled 501 households, yielding a return rate of 98.2%. The mean age of respondents was 43.8 (14.47%). Males (51%) are slightly more in number compared to females (49%). Most respondents (94%) attended school, were married (73%), employed (67.9%), and were Christians (98%).

Table 2 is a sociodemographic characteristic and awareness of CBHI and awareness of any other health insurance by respondents. It shows that 22 (50%) of those who were aware of CBHI were females, while 138 (46%) of those who were aware of any other health insurance were also females. Most of the respondents (79%) who said that they were aware of CBHI were married while 73% of those who said they were aware of any other health insurance were also married. The table also shows that about half (52%) of those that were aware of CBHI were household heads while less than half (44%) of those who were aware of other health insurance were household heads. Nearly half (43%) of those that were aware of CBHI had a university degree. The result showed that the level of education, employment status, and occupation of respondents were statistically significant at P value <0.01 for those that were aware of CBHI and for those who were aware of any other health insurance.

Table 3 is sociodemographic characteristics and WTE themselves and WTE other household members in CBHI by the respondents. The table shows that most of those who were willing to enroll for

Table 1: Socioeconomic and demographic characteristics of respondents

Characteristics	*N* (%)
Age	
Mean (SD)	43.88 (14.48)
20–29	5.33 (2.69)
39–39	34.29 (3.01)
40–49	43.98 (2.95)
50–59	53.96 (2.99)
60–69	64.02 (2.62)
70+	76.37 (6.34)
Sex	
Male	255 (51)
Female	246 (49)
Marital Status	
Married	369 (73.7)
Single	71 (14.2)
Widowed	47 (9.4)
Separated	13 (2.6)
Widowed	1 (0.2)
Location	
Rural	285 (56.9)
Urban	216 (43.1)
Highest level of education	
Secondary	196 (39.0)
Primary	146 (29.1)
Degree	55 (11.0)
No formal education	35 (7.0)
NCE	30 (6.0)
HND	23 (4.6)
Any other	16 (3.2)
Occupation	
Trading	210 (41.9)
Farming	105 (21.0)
Civil/public service	101 (20.2)
Others	44 (8.8)
Unemployed	37 (7.4)
Housewife	4 (0.8)
Number in household	
Mean (SD)	
1–3	2.33 (0.70)
4–6	5.02 (0.81)
7–9	7.55 (0.76)
10 and above	10.17 (0.39)
Mean (SD)	5.08 (2.16)
Years spent schooling	
Mean (SD)	10.15 (4.62)
SES	
Poorest (Q1)	111 (22.2)
Very poor (Q2)	106 (21.1)
Poorer (Q3)	84 (16.8)
Poor (Q4)	128 (25.5)
Least poor/rich (Q5)	72 (14.4)

Table 2: Sociodemographic characteristics and awareness of community-based health insurance (CBHI) and any other health insurance by respondents

Variable	Awareness of CBHI (score)			Awareness of any HIS (score)		
	Yes (%)	No (%)	Chi² (*P*)	Yes (%)	No (%)	Chi² (*P*)
Gender						
Female	22 (50)	233 (50)	0.02 (0.09)	155 (54)	91 (37)	4.08 (0.04)
Male	22 (50)	224 (50)		138 (46)	117 (63)	
Marital status						
Married	35 (79)	334 (73)	1.56 (0.86)	151 (73)	218 (74)	13.19 (0.04)
Single	6 (14)	12 (3)		39 (19)	32 (11)	
Widowed	2 (5)	1 (0)		11 (5)	36 (12)	
Separated	1 (2)	65 (14)		7 (3)	6 (2)	
Divorced	0 (0)	45 (10)		0 (0)	1 (0)	
Position in household						
Household head	23 (52)	222 (49)	0.22 (0.64)	108 (44)	100 (39)	1.30 (0.25)
Representative	21 (48)	235 (51)		137 (56)	156 (61)	
Highest education level						
No formal education	1 (2)	34 (7)	63.74 (<0.01)	1 (0)	37 (19)	127.64 (<0.01)
Primary	6 (14)	140 (31)		32 (16)	109 (57)	
Secondary	8 (18)	188 (41)		68 (33)	24 (12)	
NCE	6 (14)	24 (5)		24 (12)	6 (3)	
HND	1 (2)	22 (5)		19 (9)	4 (2)	
Degree	19 (43)	36 (8)		48 (24)	7 (4)	
Others	3 (7)	13 (3)		11 (5)	5 (3)	
Employment status						
Government employed	14 (32)	50 (30)	64.87 (<0.01)	56 (27)	8 (3)	119.83 (<0.01)
Private employed	1 (2)	14 (8)		10 (5)	5 (2)	
Self-employed/artisan	15 (34)	321 (70)		90 (43)	246 (84)	
Retired	10 (23)	10 (2)		17 (8)	3 (1)	
Student	2 (4)	33 (7)		25 (12)	10 (3)	
Unemployed	2 (4)	25 (5)		8 (4)	19 (6)	
Other	0 (0)	4 (1)		2 (1)	2 (1)	
Occupation						
Farming	6 (14)	99 (22)	33.06 (<0.01)	25 (12)	80 (27)	87.66 (<0.01)
Civil/public service	21 (48)	80 (18)		74 (36)	27 (9)	
Trading	12 (27)	198 (43)		57 (27)	153 (52)	
Housewife	2 (5)	2 (0)		3 (1)	1 (0)	
Unemployed	1 (2)	36 (8)		21 (10)	16 (6)	
Others	2 (4)	42 (9)		28 (14)	16 (6)	

themselves (77%) and also willing to enroll for other household members (78%) were married. The table also shows that 39% of those who were willing to enroll themselves and 39% of those who were willing to enroll other household members had secondary education. Self-employed/artisans indicated their willingness to pay for themselves and other household members at 69% and 70% respectively. The Table shows that marital status, employment status, and occupation were statistically significant at *P* value <0.05 for both those who were willing to enroll themselves and those willing to enroll other household members.

Table 4 shows that most of the respondents (81.6%) stated that the availability of qualified staff is the motivation for their WTE/WTP for CBHI, while 781% would be willing to enroll and pay for CBHI if services were provided free. Most of the respondents (74.6%) also stated that the proximity of a health facility would encourage them to enroll and pay for the CBHI. Respondents who chose not to enroll in CBHI did so because they believed they could not afford the payment (7.6%) or lacked confidence and trust in community fund management (0.3%)

Table 5 shows the respondents' awareness of willingness to enroll for themselves and other members of the household. Nearly one-third (31%) of those that were aware of health insurance, were found among the poorer quintile, while 20% were found among the least poor/rich. The concentration index (0.14) shows that the rich were more aware of health insurance than the poor.

Table 3: Sociodemographic characteristics and willingness to enroll self and willingness to enroll other household members in community-based health insurance (CBHI) by respondents

Variable	Willingness to enroll for CBHI (score)			Willingness to enroll for others (score)		
	Yes (%)	No (%)	Chi² (*P*)	Yes (%)	No (%)	Chi² (*P*)
Gender						
Female	223 (51)	23 (34)	6.75 (0.01)	220 (52)	26 (33)	9.19 (<0.01)
Male	211 (49)	44 (66)		203 (48)	52 (67)	
Marital status						
Married	333 (77)	36 (54)	19.81 (<0.01)	328 (78)	41 (53)	24.60 (<0.01)
Single	54 (12)	17 (25)		48 (11)	23 (29)	
Widowed	34 (8)	13 (19)		35 (8)	12 (15)	
Separated	12 (3)	1 (1)		11 (3)	2 (3)	
Divorced	1 (0)	0 (0)		1 (0)	0 (0)	
Highest education level						
No formal education	30 (7)	5 (8)	7.63 (0.27)	30 (7)	5 (6)	7.73 (0.26)
Primary	121 (28)	25 (37)		119 (28)	27 (35)	
Secondary	170 (39)	26 (39)		163 (39)	33 (42)	
NCE	30 (7)	0 (0)		30 (7)	0 (0)	
HND	21 (5)	2 (3)		21 (5)	2 (3)	
Degree	47 (11)	8 (12)		46 (11)	9 (12)	
Others	15 (3)	1 (1)		14 (3)	2 (3)	
Employment status						
Government employed	58 (13)	6 (9)	14.08 (0.03)	57 (13)	7 (9)	22.43 (<0.01)
Private employed	11 (3)	4 (6)		11 (3)	4 (5)	
Self-employed/artisan	298 (69)	38 (57)		295 (70)	41 (52)	
Retired	17 (4)	3 (5)		16 (4)	4 (5)	
Student	28 (6)	7 (10)		24 (6)	11 (14)	
Unemployed	20 (5)	7 (10)		18 (4)	9 (12)	
Others	2 (0)	2 (3)		2 (0)	2 (3)	
Occupation						
Farming	78 (18)	27 (40)	25.52 (<0.01)	78 (18)	27 (35)	33.24 (<0.01)
Civil/public service	90 (21)	11 (16)		87 (21)	14 (18)	
Trading	196 (45)	14 (21)		194 (46)	16 (21)	
Housewife	4 (1)	0 (0)		4 (1)	0 (0)	
Unemployed	29 (7)	8 (12)		23 (5)	14 (18)	
Others	37 (9)	7 (10)		37 (9)	7 (9)	

Table 4: Factors influencing willingness to enroll/pay for community-based health insurance (CBHI): *n*=434

Reasons for being willing to enroll/pay for CBHIS	*n* (%)
Nearness of facility	324 (74.6)
Free service is provided	339 (78.1)
Friendly providers	287 (66.1)
Availability of qualified staff	409 (94.2)
Less waiting time	282 (65.0)
Staff treat patients with respect	336 (77.4)
Reason for not being willing to enroll/pay for CBHIS	***n* (%)**
Cannot afford payment both in cash and in-kind	38 (56.7)
Lack of confidence in village/community trust fund	15 (22.3)
Waiting for the government	11 (16.4)
Do not know/not sure	3 (4.5)

Nearly one-third (32%) in the fifth quintile said they were aware of CBHI, while 9% in quintile 2 said they were aware of CBHI. A concentration index of 0.18 indicates that the rich were more aware of CBHI than the poor. The rich were also more willing to enroll themselves into CBHI and more willing to enroll others at a concentration index of 0.04 and 0.05 respectively.

Starting with a monthly premium payment of N500, respondents (35.9%) in Table 6 indicated a willingness to pay, while 64.1% indicated they were unwilling to pay. When the willingness to pay bar was raised to N600, most of the respondents (81.7%) were not willing to pay. The maximum amount the respondents were willing to pay not minding the market value was N394.1. A little more than half (52.8%) of respondents said they cannot afford payment both in cash and in kind.

Table 7 is a linear regression analysis with the willingness to pay as the dependent variable. Overall statistics show that WTP is statistically significant. The study also shows a positive correlation between

Table 5: Quintile analysis of willingness to enroll for self and other members of household by SES

Variable	Score		Chi² (*P*)
Quintile	Yes (%)	No (%)	
Awareness of health insurance scheme			
Poorest (Q1)	32 (15)	79 (27)	21.62 (<0.01)
Very poor (Q2)	37 (18)	69 (24)	
Poor (Q3)	33 (16)	51 (17)	
Poorer (Q4)	64 (31)	64 (22)	
Least poor/rich (Q5)	42 (20)	30 (10)	
Total	208 (100)	293 (100)	
Concentration index	0.14		
Awareness of CBHI			
Poorest (Q1)	9 (20)	102 (22)	14.15 (0.01)
Very poor (Q2)	4 (9)	102 (22)	
Poor (Q3)	8 (18)	76 (27)	
Poorer (Q4)	9 (20)	119 (26)	
Least poor/rich (Q5)	14 (32)	58 (13)	
Total	44 (100)	457 (100)	
Concentration index	0.18		
Willingness to enroll in CBHI			
Poorest (Q1)	85 (20)	26 (39)	27.32 (<0.01)
Very poor (Q2)	91 (21)	15 (22)	
Poor (Q3)	67 (15)	17 (25)	
Poorer (Q4)	124 (29)	4 (6)	
Least poor/rich (Q5)	67 (15)	5 (7)	
Total	434 (100)	67 (100)	
Concentration index	0.04		
Willingness to enroll other members of household			
Poorest (Q1)	81 (19)	30 (38)	27.06 (<0.01)
Very poor (Q2)	90 (21)	16 (21)	
Poor (Q3)	66 (16)	18 (23)	
Poorer (Q4)	123 (29)	5 (6)	
Least poor/rich (Q5)	63 (15)	9 (12)	
Total	423 (100)	78 (100)	
Concentration index	0.05		

the variables with R-squared at 0.45. The relationship is statistically significant for levels of education, occupation, and source of information at *P* values, 0.05, 0.02, and 0.01 respectively.

Discussion

This study revealed that community awareness of CBHI is relatively low. Although our findings are like those of Babatunde *et al*.,[30] many of our study's respondents expressed interest in registering for CBHI for various reasons. Those with formal means of income such as government employees are few in number with self-employed/artisans topping the least. The implication is that because self-employed/artisans are subsistence with little or no taxable income, they may not be able to make financial commitments to health insurance as indicated by Cashin and Dossou.[31] This is further supported by De Allegri *et al.*,[32] who showed that inadequate income, high overhead costs, and weak managerial capacity especially in low and middle-income countries slow down mutual health insurance uptake.

The study identified the key reasons that make respondents willing to enroll. They include nearness to health facilities, availability of qualified staff, and short waiting time. These have been identified as important determinants of the level of health-seeking behavior among those in the low- and middle-income countries.[33] It is however important to note that respondents identified a lack of confidence in village/community trust fund as a factor that could affect willingness to enroll and pay for CBHI. This is in line with Obikeze *et al.*,[34] who indicated trust as a major issue in establishing mutual health associations in southeast Nigeria. The mean willingness to enroll through contingent valuation was low at N394.1 per annum, which is equivalent to $1.01 at the prevailing exchange rate of N390.00 per $1.00. This further explains how low earnings could affect the much people would be able to part with to ensure financial risk protection against ill health. The lower the premium payable for CBHI, the higher the number of households that demand it. This is critical in promoting participation within the established mean value of societal willingness to pay. Much as these are valid economic arguments, there is a limit to which low premiums could ensure sustainability unless the government can augment them.[16]

Many of the respondents were only willing to enroll if CBHI is free, which was an unexpected finding, given that community members currently pay for health care out of pocket. Health care is a public good that the government provides without profit to all members of society. However, a health insurance system that is not supported beyond a certain threshold may not be sustainable in the long-term,[35] support this in their work on the basis for effective CBHI schemes.

In another case, the government or any other well-intentioned organization would also be mobilized to make contributions. Such schemes will require a large pool of premiums to attain the main objective of financial risk protection. Thus, the NHIS and ENSUHCA should establish a pool of funds to be used as a resource for subsidizing or exempting the poorest and other disadvantaged individuals from paying in CBHI. Other methods of increasing premiums to cover the anticipated costs of selected benefit packages, such as government support through taxes and donor financing, should be pursued to guarantee the financial viability of CBHI while ensuring that the most critical services are included in the CBHI packages.

Table 6: Willingness to pay for community-based health insurance (CBHI) in monetary terms

Variable	*n* (%)
Willingness to pay N500 monthly	
Yes	180 (35.9)
No	321 (64.1)
Willingness to pay N600 monthly	
Yes	38 (18.3)
No	170 (81.7)
Willingness to pay N400 monthly	
Yes	71 (24.1)
No	223 (75.9)
Maximum amount willing to pay (not minding the market value)	
Mean (SD)	394.1 (237.7)
Reason for not willing to contribute to CBHI	
a) Cannot afford payment both in cash and in-kind	38 (52.8)
b) Lack of confidence in village/ community trust fund	15 (20.8)
c) Wait for the government	11 (15.3)
d) Do not know/not sure	8 (11.1)

Table 7: Linear regression analysis of maximum WTP by varying factors

Prob. > f=0.003

R-squared=0.45

Adj. R-square=0.34

Maximum WTP	Coefficient	Std. error	*t*	*P>t*
Constant	784.5	190.5	4.1	0
Sex	−88	187.2	−0.5	0.641
Marital status	−45	35.5	−1.3	0.21
Position in household	186.5	192.7	1	0.34
Level of education	−51.8	25.5	−2	0.05
Employment	−21.3	33.8	−0.6	0.53
Occupation	−92.6	38.2	−2.4	0.02
Source of information	110.9	42.9	2.6	0.01

Our findings regarding sociodemographic variables and willingness to enroll/pay for CBHI demonstrate the strength of the relationship between the maximum amount respondents are willing to pay and the independent variables. The effects of awareness, gender, marital status, educational background, and location were investigated. The availability of qualified staff, the provision of free health services, the proximity of a health facility, the friendliness of health providers, and the reduction in waiting time contributed to respondents enrolling and paying for the CBHI. On the other hand, respondents could not enroll in and pay for the CBHI due to financial constraints and a lack of confidence and trust in community fund management.

There was no significant relationship between respondents' educational background and awareness of CBHI and WTE for CBHI. Sarwar and Qureshi's[36] findings on "Awareness and willingness to purchase private health insurance and a look at its future prospects in Pakistan" corroborate this. This demonstrated citizens' readiness to demand high-quality, affordable health care with financial protection. Marital status, gender, and location were all associated with WTE for CBHI. More married individuals are more likely to participate in and pay for CBHI, which correlates with Onwujekwe's finding that more married individuals are more willing to pay. This could be due to the added stress of pregnancy and childhood illnesses. The study also discovered a positive relationship between location and the willingness to participate in CBHI. Respondents living in rural areas were more willing to do so than those living in urban areas, owing to a higher disease burden and high mortality and morbidity rates in rural areas. Females indicated WTP at a higher rate than males. This could be a population effect, as females outnumbered males in Oji River LGA. Females also require more health care than males due to pregnancy and childcare.[37]

The study's findings indicate that a sizable proportion of households in the study area were willing to participate in a CBHI scheme. However, their willingness to pay is insufficient to cover the cost of comprehensive health care for themselves and their families. It was discovered that respondents' demographic characteristics such as gender and location had a significant impact on their decision to participate in the scheme. The availability of qualified staff, the provision of free health services, proximity to a health facility, friendly health providers, and shorter waiting times were some of the reasons respondents indicated they were willing to enroll and pay for CBHI. For equity in health services, these concerns by respondents need to be given adequate attention by the government, propelled by the altruism of good-spirited community members.

Conclusion

Rural poor in developing countries have a hard time getting good health care because they cannot afford it. This is a major cause of healthcare inequity. This community demand analysis shows that rural and peri-urban community members who may have no other way to pay for health care other than out of pocket at the point of access are open to using a contributory mechanism for their health care. This open-mindedness raises the prospect of a policy option to establish CBHI, among other contributory programs, in a decentralized state health insurance scheme like the Enugu State Universal Health Coverage Agency

to cater to distinct informal groups in urban and peri-urban communities.

Contributory programs like CBHI can make it easier for people in rural areas to get health care and make it more affordable. This will help reach the goal of UHC. However, to achieve this objective, policy measures must be implemented to promote participation, provide financial and non-financial incentives to enroll in a CBHI scheme, and ensure that the service delivery mechanism is affordable and accessible. Thus, further studies are needed to examine these issues and explore ways to encourage participation and enrollment in CBHI and other contributory schemes among under-served populations and improve access to and utilization of health care services in rural and peri-urban communities in Enugu State, and other states in Nigeria. It is also critical to investigate why some people pay for their health care out of pocket rather than enroll in a CBHI scheme, and how targeted interventions can change this behavior.

Authors' Contributions

EMO conceived the original idea, designed the study, and prepared the study proposal, and CN drafted the manuscript. EO was responsible for data collection, analysis, and interpretation of data.IO supervised the research process, and contributed to study design. All authors were involved in critically revising the manuscript for important intellectual content. All authors read and approved the final manuscript.

Ethical Issues

Ethical clearance was obtained from the Ethics Committee of the Enugu State Ministry of Health.

Financial Support and Sponsorship

Nil.

Conflicts of Interest

There are no conflicts of interest.

References

1. Watkins DA, Jamison DT, Mills T, Atun T, Danforth K. Universal health coverage and essential packages of care. In: Disease Control Priorities: Improving Health and Reducing Poverty. 3rd ed. Washington DC: International Bank for Reconstruction and Development/The World Bank; 2018.
2. Adua E, Frimpong K, Li X, Wang W. Emerging issues in public health: A perspective on Ghana's healthcare expenditure, policies and outcomes. EPMA 2017;8:197-206.
3. Reich M, Harris J, Ikegami N, Maeda A, Cashin C. Araujo E, *et al*. Moving towards Universal Health Coverage: Lessons from 11 country studies. Lancet 2015;387:811-6.
4. McIntyre D, Meheus F, Rottingen J-A. What level of domestic government health expenditure should we aspire to for universal health coverage? Health Econ Policy Law 2017;12:125-37.
5. World Health Organization. Aligning Public Financial Management and Health Financing: Sustaining Progress towards Universal Health Coverage. Geneva: World Health Organization; 2017.
6. World Health Organization. Sustainable Health Financing, Universal Coverage and Social Health Insurance. Geneva: World Health Organization; 2005.
7. World Health Organization. Tracking Universal Health Coverage: First Global Monitoring Report. Geneva: World Health Organization; 2015.
8. Jacobs B, Ir P, Bigdeli M, Annear PL, Damme WV. Addressing access barriers to health services: An analytical framework for selecting appropriate interventions in low-income Asian countries. Health Policy Plan 2012;27:288-300.
9. World Bank. Out-of-pocket expenditure (% of current health expenditure), Washignton DC: World Bank; 2021.
10. Adebisi YA, Umah JO, Olaoye OC, Alaran AJ, Sina-Odunsi AB, Lucero-pfrisno DE. Assessment of health budgetary allocation and expenditure toward achieving universal health coverage in Nigeria. Int J Health Life Sci 2020;6:e102552.
11. Lagomarsino G, Garabrant A, Advas A, Muga R, Otoo N. Moving towards universal health coverage: Health insurance reforms in nine developing countries in Africa and Asia. Lancet 2012;380:933-43.
12. FGN. National Health Insurance Scheme 1999 Decree No.35 Abuja, Nigeria: Federal Government of Nigeria; 1999.
13. Alawode GO, Adewole DA. Assessment of the design and implementation challenges of the national health insurance scheme in Nigeria: A qualitative study among sub-national level actors, healthcare and insurance providers. BMC Public Health 2021;21:124.
14. NHIS. Formal sector social health insurance programme, Abuja, Nigeria: National Health Insurance Scheme; 2021.
15. Odeyemi IA. Community-based health insurance programmes and the national health insurance scheme of Nigeria: Challenges to uptake and integration. Int J Equity Health 2014;13:20. doi: 10.1186/1475-9276-13-20.
16. Shewamene Z, Tiruneh G, Abraha A, Reshad A, Terefe M, Shimels T, *et al*. Barriers to uptake of community-based health insurance in sub-Saharan Africa: A systematic review. Health Policy Plan 2021;36:1705-14.
17. Uzochukwu BS, Ughasoro MD, Etiaba E, Okwuosa C, Envuladu E, Onwujekwe OE. Health care financing in Nigeria: Implications for achieving universal health coverage. Nigerian Journal of Clinical Practice 2015;18:437-44.
18. Dror DM, Hossain SA, Majumdar A, Koehlmoos TL, 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;11:0160479. doi: 10.1371/journal.pone.0160479.
19. Babatunde O, Akande TM, Salaudeen AG. Willingness to pay for community health insurance and its determinants among household heads in rural communities in north-central Nigeria. Int Rev Soc Sci Hum 2012;2:133-42.
20. Ibobo ME. An Assessment of the Feasibility of Community Based Health Insurance in Rural Communities of Delta State, Nigeria. National Postgraduate Medical College of Nigeria; 2018.
21. Buigut T, Ettarh R, Amendah D. Catastrophic health expenditure and its determinants in Kenya slum communities. Int J Equity Health 2015;14:46.
22. SMoH, Enugu. Enugu State Strategic Health Development Plan (2017-2021). Enugu: State Ministry of Health; 2017.
23. Okolo CN, Nwankwo C, Okoli C, Obikeze E, Onwujekwe O.

The challenges of establishing universal health coverage in Enugu State, Nigeria. Dev Country Stud 2019;9. doi: 10.7176/ DCS.

24. Moulaert F, McCallum D, Mehmood A, Hamdouch A. International Handbook on Social Innovation: Collective Action, Social Learning and Transdisciplinary Research. Cheltenham: Edward Elgar Publishing Ltd; 2013.
25. NPC. 2006 Population Census. Abuja, Nigeria: National Population Commission; 2007.
26. Champ PA, Boyle KJ. Brown TC. (Eds.): A primer of non-market valuation. New York: Springer Dondredcht; 2017.
27. Stata statistical software. Release 16. College Station, TX: Stata-Corp LLC; 2019.
28. Filmer L, Princhett D. Estimating wealth effects without expenditure data-or tears: An application to educational enrollments in states of India. Demography 2001;38:115-32.
29. Onwujekwe OE, Uzochukwu BS, Obikeze EN, Okoronkwo I, Ochonma OG, Onoka CA, *et al.* Investigating determinants of out-of-pocket spending and strategies for coping with payments for healthcare in southeast Nigeria. BMC Health Serv Res 2010;10:67. doi: 10.1186/1472-6963-10-67.
30. Babatunde, OA, Babatunde OO, Salaudeen AG, Aderibigbe SA, Adewoye KR, Alao TA, *et al*. Knowledge of community health insurance among household heads in rural communities of Ilorin, Nigeria. Int J Sci Environ Technol 2014;3:800-10.
31. Cashin H, Jean-Paul D. Can national health insurance pave the way to universal health coverage in Sub-Saharan Africa? Health Syst Reform 2021;7:e2006122. doi: 10.1080/23288604.2021.2006122.
32. De Allegri M, Sauerborn R, Kouyate B, Flessa S. Community health insurance in sub-Saharan Africa: What operational difficulties hamper its successful development? Trop Med Int Health 2009;14:586-96.
33. Adebayo EF, Uthman OA, Wiysonge CS, Stern EA, Lamont KT, Ataguba JE. A systematic review of factors that affect uptake of community-based health insurance in low-income and middle-income countries. BMC Health Serv Res 2015;15:543.
34. Obikeze E, Uguru N, Ilika F, Iwuora I, Ojiako T, Idoko A, *et al*. Piloting Mutual Health Association establishment in Enugu State, Southeast Nigeria: Lessons learned. Int J Med Health Dev 2021;27:43-51.
35. Onwujekwe O, Uzochukwu B, Kirigia J. Basis for effective community-based Health Insurance schemes: Investigating inequities in catastrophic out-of-pocket health expenditures, affordability and altruism. Afr J Health Econ 2011;1:48-56.
36. Sarwar A, Qureshi H. Awareness and willingness to buy private health insurance and a look into its future prospects in Pakistan Eur J Bus Soc Sci 2013;2:69-81.
37. Ganle JK, Dery I. 'What men don't know can hurt women's health': A qualitative study of the barriers to and opportunities for men's involvement in maternal healthcare in Ghana. BMC Reprod Health. 2015;12:93.

Appendix A

Questionnaire

Demand analysis of community-based health insurance scheme (CBHIS) in Oji River Local Government Area of Enugu State

Section A: General information

Name of village: …….

Household size: ……. Household no. (if any) ……

Location (urban or rural) …….....

Name of respondent: ……..

Section B: Sociodemographic data

1. How old are you? [ ] age in years
2. Sex: *[1=Yes, 0=No, only one answer is required]*
   a. Male [ ]
   b. Female [ ]
3. Marital status: *[1=Yes 0=No, only one answer is required]*
   a. Married [ ]
   b. Separated [ ]
   c. Divorced [ ]
   d. Single [ ]
   e. Widow/widower [ ]
4. What is your position in your household? [ ]. Household head=1. Representative=0
5. How many people live in your household including yourself? [ ]
6. Did you attend school: *[1=Yes 0=No, only one answer is required]*
   a. Yes [ ]
   b. No [ ]
7. How many years did you spend schooling? [ ]
8. What is your highest level of education?
   a. No formal education [ ]
   b. Primary [ ]
   c. Secondary [ ]
   d. NCE [ ]
   e. HND [ ]
   f. Degree [ ]
   g. Any other, specify [ ]
9. What type of employment? *[1=Yes 0=No, only one answer is required]*
   a. Government employed [ ]
   b. Privately employed [ ]
   c. Self-employed/artisan [ ]
   d. Retired [ ]
   e. Student [ ]
   f. Unemployed [ ]
   g. Others, please specify [ ]…….
10. What is your major occupation or source of income? *[1=Yes 0=No, only one answer is required]*
    a. Farming [ ]
    b. Civil/Public service [ ]
    c. Trading [ ]
    d. Housewife

e. Unemployed [ ]
f. Others [ ], specify…….

11. What is your religion? *[1=Yes 0=No, only one answer is required]*
    a. Christianity [ ]
    b. Islamic [ ]
    c. Traditional [ ]
    d. Others [ ], specify…….

Section C: Awareness of health insurance

12. Are you aware of any health insurance scheme?
    a. Yes]
    b. No [ ] (Interviewer please explain)

13. Are you aware of CBHIS?
    a. Yes [ ]
    b. No [ ] (Interviewer please take time to explain CBHIS)

14. If yes to question 13, what is the source of your information on CBHIS? *[1=Yes 0=No, only one answer is required]*
    a. Friends/Colleagues [ ]
    b. Radio/Television [ ]
    c. Newspapers/Books [ ]
    d. Internet [ ]
    e. Seminars/Workshops [ ]
    f. Others [ ], specify…….

15. Why do you think the government set up CBHIS? *[1=Yes 0=No, only one answer is required]*

a. Ensure access to good healthcare by every Nigerian	[ ]
b. Protect families from the financial hardship of large medical bills	[ ]
c. Ensure equitable distribution of healthcare costs among different income groups	[ ]
d. Ensure efficiency in healthcare service delivery	[ ]
e. Ensure availability of funds for improved healthcare service	[ ]
f. Maternity care for up to four live births.	[ ]
g. Free immunization, free family planning, antenatal and post-natal service	[ ]
h. preventing increasing death rates	
i. Don't know	[ ]
j. Others (specify)	[ ]

Enrollment

16. Are you enrolled in any type of health insurance? *[1=Yes 0=No, if no, go to section D]*
    [ ]

17. Which health insurance scheme (HIS) are you enrolled in? *[1=Yes 0=No, only one answer is required]*
    a. CBHIS [ ]
    b. Faith-based CBHIS [ ]
    c. Federal Government HIS [ ]
    d. Private HIS [ ]

Section D: Willingness to enroll/pay

Most of the time when people fall sick, they tend to adopt various ways of coping with such an event, this includes selling off personal belongings or borrowing money from their friends. If the individual or household fails in obtaining financial help, oftentimes the sick individual has no option but to remain in the state and begin to deteriorate. This has led to high mortality index in our country. Now, considering the financial burden and other risks you (household and individuals) might face, there is a plan to establish a Scheme (insurance) for this community which will help solve the problem of sourcing money especially when an individual falls ill. When this Scheme is instituted, and you join, you will then be expected to pay a certain amount as a premium, monthly, quarterly, or

yearly. If you pay the premium, you will not pay for the services under the essential primary health care package offered to you/your household at the health center for the period of a year. These include diagnosis and laboratory tests carried out in the health center, cost of drugs, treatment, minor accidents, and surgeries.

For simplicity, the overall Scheme would be managed by a committee to be selected from your community. The whole premiums paid will be lumped together and kept in the bank and managed by another committee (financial management committee) again elected by your community. To ensure the success of the Scheme, adequate health workers would be employed to ensure that those who contribute to the scheme receive their benefits without much stress.

In this section, I would like to ascertain how much and the maximum amount you will be willing to pay in this community-based health insurance scheme (CBHIS) if it kicks off in your community.

18. Respondents' willingness to enroll/pay for CBHIS [1=Yes 0=No, only one answer is required]

a. Are you willing to enroll for CBHIS?	[ ]
b. Are you willing to enroll/pay for CBHIS? [1=Yes 0=No, if No, go to Section F]	[ ]
c. Would you be willing to enroll and pay for other HH members into CBHIS? [Yes=1, No=0]	[ ]

Section E: Maximum amount respondents are WTP as premium

19. The amount to pay for CBHIS is N500 monthly, will you be willing to pay? [Yes=1, No=0], [ ]

20. What if the premium is N600, will you be willing to pay? [Yes=1, No=0], [ ]

21. What if the premium is N400, will you be willing to pay? [Yes=1, No=0], [ ]

22. What is the maximum amount you are willing to pay? [ ]

Section F: Factors influencing willingness to enroll/pay

23. If not, why will your household not be willing to contribute to help increase access to health care services through community participation? [Yes=1, No=0].
    a. cannot afford payment both in cash and in-kind [ ]
    b. Lack of confidence in village/community trust fund [ ]
    c. Wait for the Government [ ]
    d. Do not know/not sure [ ]

24. What do you think will encourage you to participate in CBHIS? [Yes=1, No=0 (interviewer, please mark as many that apply)].
    a. nearness of the facility (proximity) [ ]
    b. Free service is provided [ ]
    c. Friendly provider [ ]
    d. Qualified staff [ ]
    e. Less waiting time [ ]
    f. Staff treats patient well [ ]
    g. Others, please specify [ ]

25. Any comments?

……
……
……

Appendix B

	n	%
Valid	30	100
Excluded	0	0.0
Total	30	100
Cronbach's Alpha	Cronbach's Alpha based on the standardized item	No. of items
0.980	0.993	34