



Assessment of Willingness to pay for Community-Based Health Insurance among Artisans in a selected Community of Ekiti State, Southwest Nigeria

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Abstract

Background: Community-based health insurance (CBHI) has emerged as a more efficient and equitable approach to healthcare financing. It was designed to ensure that sufficient resources are made available for members to access effective healthcare. This study assessed the willingness to pay (WTP) for CBHI among artisans in a town in Ekiti State, South West Nigeria.

Methods: This was a cross-sectional survey conducted among 416 artisans in a town in Ekiti State. A semi-structured interviewer-administered questionnaire was designed and used for data collection on sociodemographic data and WTP for CBHI. Data entry and analysis was done using IBM SPSS software version 25.0.

Results: The mean age and standard deviation of the respondents was 29.7±10.9 years with male to female ratio of 1:1.4. Most of the respondents were willing to pay (86.3%) and willing to enroll other household members (73.6%) in the CBHI. A large percentage (44.3%) of those willing to pay were ready to pay between ₦1,000-₦5,000 (US\$2.63-US\$13.16) per year while 39.6% preferred frequency of payment to be annually. Positive predictors of WTP for CBHI were age groups ≥50 years and 40-49 years than <20 years (AOR:13.270, 95%CI: 1.597-110.267; AOR:142.996, 95%CI: 10.689-1913.009). Females than males (AOR:9.155, 95%CI: 3.680-22.775), tertiary level of education than no formal of education (AOR:23.420, 95%CI: 1.648-850.921), no children than ≥5 children (AOR:20.099, 95%CI: 2.705-149.364), earn ≥₦30,000 (US\$78.95) than <₦30,000 (AOR:2.248, 95%CI: 1.278-6.499). often and somethings fall ill than seldom fall ill (AOR:6.505, 95%CI: 1.623-26.065; AOR:4.889, 95%CI: 1.674-14.279)

Conclusion: WTP for CBHI was high among the artisans, however, there is a variation across the amount and frequency of payment. Therefore, policy that is flexible enough to allow artisans enroll and pay a premium that is affordable, at an acceptable frequency, should be formulated by the Government.

Key words: Artisans, Assessment, Community-Based, Insurance, Willingness

Introduction

The public health system in Nigeria is characterized by low funding and inequitable access to health care services.¹ Access to health care services by the poor households has been greatly affected due to their

low purchasing power evidenced by their earning and expenditure patterns.² This is because the predominant health care financing mechanism in Nigeria is out-of-pocket (OOP) payment.³ To get around this problem and safeguard the poor from the catastrophic nature of this health financing method, prepayment schemes such as community-based health insurance (CBHI) scheme has been advocated.⁴

A recent review of health-system financing for universal health coverage in Nigeria shows high OOP expenses for health care, a very low budget for

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health at all levels of government, and poor health insurance uptake.⁵ With the increasing need to reduce the burden for funding health care services amongst the populace, especially for preventive and emergency services, the Nigerian federal government introduced the National Health Insurance Scheme (NHIS) under the Act 35, 1999.⁶ This scheme has been running for over a decade, but has failed to fully incorporate the informal sector which contributes the largest percentage of the country's population and has thus, still made OOP the predominant form of healthcare financing in the country.⁷ NHIS currently has limited coverage, covering only about 10% of the general population including the federal civil servants, the armed forces and paramilitary forces.⁸ However, the states have showed little or no interest in enrolling artisans and other categories of workers.⁸

OOP payment resulting from medical fees brings about a serious barrier to health seeking behavior in Nigeria.⁹ It has resulted in members of the informal sector neglecting most of their ailments, resulting to use of self-medication and frequent visit and consultation of herbalists and traditionalists. The World Health Organization (WHO) views medical fees as a significant obstacle to 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.¹⁰ In our environment, CBHI has emerged as an alternative to user fees. CBHI schemes are designed to ensure that sufficient resources are made available for members to access effective health care. Contributions are accumulated and managed to spread the risk of payment for health care among all scheme members.

A study done in Kaduna State, Nigeria shows that 82% were willing to pay an average of ₦513 ± ₦47 (\$1.68) per month for health insurance premium.¹¹ Another study in Ghana found that 98% of household heads would be willing to pay a premium to obtain health insurance cover for all their household members.¹² In Ethiopia, 73.6% were willing to enroll in CBHI and the reasons given for the willingness were: Free access to medical care (73.6%), security and peace of mind during illness (18.9%) and to help others (7.5%).¹³ However, the reasons why they would not enroll in CBHI were: Not having enough money (11.9%), preferring OOP

(3.6%) and lack of trust in CBHI practitioners (2.2%).¹³ Other reasons for non-willingness were absence of worries about health care prices and good family health.¹²

Globally, the mean willingness to pay (WTP) for health insurance among the lower and middle-income countries is estimated at 1.18% of gross domestic product per capita and 1.39% of adjusted net national income per capital.¹⁴ Several factors have been found to affect WTP for CBHI, for example, males and unmarried individuals were willing to pay higher in a previous study.¹¹ Income, size of the household, level of education and formal employment matter in people's choice and WTP premiums, as well as the amount they are willing to pay for contributory health insurance schemes in Nigeria.¹⁵

It was found that the poorest indicated the lowest WTP of ₦193 compared with the least poor who suggested a WTP of ₦329.¹⁶ On the effect of age and frequency of falling sick on WTP, Oyekale found a strong negative correlation.⁹ It was also revealed that WTP for CBHI increased significantly with awareness.⁹ A similar finding was reported by Biosca and Brown in their study.¹⁷ However, this was not the case in another study done by Bawa and Ruchita in India where 71% of the respondents reported being aware but did not subscribe to health insurance.¹⁸

Individuals must be willing to pay and subscribe to CBHI as it cannot be forced even though it has good benefits.¹⁹ Artisans contribute to a large number of the population of Ido-Ekiti²⁰ and to a level they have a source of income which with good guidance can cater for their health needs. Moreover, some of them are exposed to occupational hazards too. To benefit from health insurance, they have to be willing to pay a particular amount of money for them to have a health insurance cover. Having this will go a long way in catering for their needs and put a stop to being stranded in hospital wards and at the mercy of well-wishers and charity givers. Carrying out a study to know if they are willing to pay for a health insurance scheme will improve the health status of this particular group of people, the community and the nation at large. This study therefore aims to assess the WTP for CBHI among artisans in Ido-Ekiti, Ekiti State.

Materials and methods

A cross-sectional survey of WTP for CBHI among artisans was conducted in Ido-Ekiti, a town in Ekiti State, South West region of Nigeria. Ido-Ekiti is situated in the Northern part of the State where routes from Oyo, Osun and Kwara States converge. The town is the headquarters of Ido-Osi local government area and is bounded in the East by Ipere and Iludun Ekiti, in the South by Igbole and Ifisin Ekiti and in the North and North West by Usi and Ilogbo Ekiti. Ido-Osi local government has an estimated population of 218,100 (Projection from 2006 population census).

The study included all artisans of any gender in Ido-Ekiti. An artisan is a worker in a skilled trade, especially one that involves making things by hand. Apprentices were excluded from the study.

A minimum sample size of 422 was calculated using the Leslie Fischer's formula for population greater than 10,000 after assuming a 10% non-response, a proportion of 50% for WTP among artisans, standard normal deviate of 1.96 and degree of accuracy of 0.05. Using stratified sampling technique, the artisans were initially grouped into their various occupations. The respondents were then selected by simple random sampling method using proportionate allocation based on occupational population.

The study instrument used for data collection is a semi-structured interviewer-administered questionnaire. The questionnaire was designed and administered by the researchers to the respondents, and was constructed in English language. The questionnaire contains questions on sociodemographic data as well as questions on WTP for CBHI. The questionnaire was translated into the local language (Yoruba) for use on the field and back translated into English to ensure consistency of content. Questionnaire was scrutinized for content validity by experts in health economics and consultant community medicine physicians.

Research assistant were trained for data collection and research supervisor ensured the procedures were followed precisely, to ensure that the data were valid, reliable and useful. The artisans were informed about the purpose of the study before their verbal consent was obtained. The questionnaires were then administered by the research assistants and it took about 15 minutes to fill in. The

participants were followed in their respective work places during the day. Data were collected within 1 week in March, 2020.

Questionnaires were checked for errors by the research supervisor at the end of each day. All data collected were entered and analyzed using IBM SPSS for Windows, version 25.0 (IBM Corp., Armonk, N.Y., USA). The data were presented in frequency tables and percentages. Mean and standard deviation (SD) were computed for age while median and range were computed for income. Chi square test was used to determine the association between socio-demographic characteristics and WTP for CBHI. Binary logistic regression was performed to measure adjusted odd ratios for the significant factors associated with WTP for CBHI. Results were interpreted and a conclusion was drawn.

Ethical Consideration

Verbal informed consent was obtained from each and every respondent prior to participation in the study, and those who did not consent to participate were excluded from the study. Confidentiality and anonymity of the respondents were fully guaranteed. The purpose and benefits of the research were clearly explained to the respondents before questionnaires were administered. Ethical approval to conduct this study was obtained from Human Ethics and Research Review Committee of Federal Teaching Hospital, Ido-Ekiti, Ekiti State.

Results

A total of 422 questionnaires were administered for the research and 416 were received giving a non-response rate of 1.42%. As shown in table 1, most (44.0%) of the respondents were within the age group 20-29 years with a mean age \pm SD of 29.7 ± 10.9 years. The male to female ratio was 1:1.4. About half were married (51.0%) and have their highest level of education at secondary level (47.8%). As regards occupation, 38.5% were tailors representing the occupation with the most population. Majority (44.2%) had no child and were earning less than ₦30,000 monthly (73.1%). More than half (57.2%) seldom fall ill, two-third (68.5%) did not visit the hospital in one year, 84.6% were not admitted in the hospital in one year and half (50.0%) did not spend any money on health care yearly.

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency (N=146)	Percent (%)
Age group (in years)		
<20	52	12.5
20-29	183	44.0
30-39	82	19.7
40-49	82	19.7
≥50	17	4.1
Mean age ± SD	29.7 ±10.9	
Gender		
Male	177	42.5
Female	239	57.5
Marital Status		
Married	212	51.0
Single	188	45.2
Separated	10	2.4
Widowed	6	1.4
Level of Education		
No formal education	4	1.0
Primary	18	4.3
Secondary	199	47.8
Tertiary	195	46.9
Occupation		
Bricklayer	48	11.5
Carpenter	60	14.4
Electrician	34	8.2
Tailor	160	38.5
Hair stylist	72	17.3
Others	42	10.1
Number of children		
0	184	44.2
1-2	119	28.6
3-4	81	19.5
5 and above	32	7.7
Income (₦)		
<30,000	304	73.1
≥30,000	112	26.9
Median (Range) Income	10,000 (5,000-200,000)	
Frequency of Illness		
Often	74	17.8
Sometimes	104	25.0
Seldom	238	57.2
Estimated number of hospitals visit per year		
0	285	68.5
1-2	102	24.5
3 and above	29	7.0
Estimated number of hospital admission in the year		
0	352	84.6
1	43	10.3
2	17	4.1
3	4	1.0
Estimated amount spent on healthcare Yearly (?)		
None	208	50.0
Less than 1,000	59	14.2
1,000 - < 5,000	65	15.6
5,000 - < 10,000	42	10.1
10,000 and above	42	10.1

Table 2: Enrollment of Respondents in CBHIS

Variable	Frequency (N =416)	Percent (%)
Enrollment in any Health Insurance Scheme		
Yes	66	15.9
No	350	84.1
CBHIS is acceptable to me as a strategy for paying for healthcare		
Yes	262	63.0
No	154	37.0
I believe that access to CBHI will improve my access to healthcare services		
Yes	352	84.6
No	64	15.4
I believe that access to CBHI will make healthcare more affordable		
Yes	352	84.6
No	64	15.4

Table 3: Willingness to pay for CBHIS among respondents

Variable	Frequency (N=416)	Percent (%)
Willingness to pay (WTP) for CBHIS		
Yes	359	86.3
No	57	13.7
Willingness to enroll other household members in the CBHIS		
Yes	306	73.6
No	110	26.4
(n = 359)		
Amount willing to pay for CBHIS per year (₦)		
<1,000	82	22.8
1,000 - <5,000	177	44.3
5,000 -< 10,000	44	12.3
= 10,000	56	15.6
Preferred frequency of premium payment		
Annual	142	39.6
Bi-annual	59	16.4
Quarterly	67	18.7
Monthly	88	24.5
Others	3	0.8
What takes the larger part of monthly income		
Feeding	265	63.7
Hospital bills	21	5.0
Children school fees	84	20.2
Others	46	11.1

Table 4: Socio-demographic factors associated with willingness to pay for CBHIS among respondents

Variable	WTP for CBHIS		Chi square	p-value
	Yes n (%)	No n (%)		
Age Group (in years)				
<20	41(78.8)	11(21.2)	16.416	0.003
20-29	152(83.1)	31(16.9)		
30-39	72(87.8)	10(12.2)		
40-49	81(98.8)	1(1.2)		
≥50	13(76.5)	4(23.5)		
Gender				
Male	138(78.0)	39(22.0)	18.088	<0.001
Female	221(92.5)	18(7.5)		
Marital status				
Married	188(88.7)	24(11.3)	5.444	0.142
Single	160(85.1)	28(14.9)		
Separated	7(70.0)	3(30.0)		
Widowed	4(66.7)	2(33.3)		
Level of Education				
No formal education	2(50.0)	2(50.0)	37.771	<0.001
Primary	9(50.0)	9(50.0)		
Secondary	164(82.4)	35(17.6)		
Tertiary	184(94.4)	11(5.6)		
Occupation				
Bricklayer	46(95.8)	2(4.2)	10.133	0.072
Carpenter	42(81.7)	11(18.3)		
Electrician	30(88.2)	4(11.8)		
Tailor	142(88.0)	18(11.2)		
Hair Stylist	56(77.8)	16(22.2)		
Others	36(85.7)	6(14.3)		
Number of children				
0	163(88.6)	21(11.4)	9.271	0.026
1-2	104(87.4)	15(12.6)		
3-4	70(86.4)	11(13.6)		
5 and above	22(68.8)	10(31.2)		
Income (₦)				
<30,000	255(83.9)	49(16.1)	5.576	0.018
≥30,000	104(92.9)	8(7.1)		
Frequency of illness				
Often	70(93.3)	5(6.7)	6.592	0.037
Sometimes	93(89.4)	11(10.6)		
Seldom	196(82.7)	41(17.3)		
Estimated number of hospital visits per year				
0	252(88.4)	33(11.6)	3.626	0.163
1-2	84(82.4)	18(17.6)		
3 and above	23(79.3)	6(20.7)		
Estimated number of hospital admissions in the year				
0	309(87.8)	43(12.2)	6.000	0.112
1	33(76.7)	10(23.3)		
2	13(76.4)	4(23.5)		
3	4(100.0)	0(0.0)		
Estimated amount spent on healthcare last year (₦)				
None	191(91.8)	17(8.2)	23.757	<0.001
Less than 1,000	43(72.9)	16(27.1)		
1,000 - < 5,000	49(75.4)	16(24.6)		
5,000 - < 10,000	36(85.7)	6(14.3)		
10,000 and above	40(95.2)	2(4.8)		

Table 5: Binary logistic regression for the predictors of WTP for CBHI among respondents

Variable	AOR	95% CI for AOR		p-value
		LB	UB	
Age Group (in years)				
<20 (ref)	1.000			
20-29	2.398	0.792	7.259	0.122
30-39	3.698	0.959	14.260	0.058
40-49	142.996	10.689	1913.009	<0.001
≥50	13.270	1.597	110.267	0.017
Gender				
Male (ref)	1.000			
Female	9.155	3.680	22.775	<0.001
Level of Education				
No formal education (ref)	1.000			
Primary	1.501	0.044	50.892	0.821
Secondary	10.242	0.312	336.535	0.192
Tertiary	23.420	1.648	850.921	0.025
Number of children				
0	20.099	2.705	149.364	0.003
1-2	6.422	0.949	43.457	0.057
3-4	3.011	0.381	23.803	0.296
5 and above (ref)	1.000			
Income (₦)				
<30,000 (ref)	1.000			
≥30,000	2.248	1.278	6.499	0.042
Frequency of illness				
Often	6.505	1.623	26.065	0.008
Sometimes	4.889	1.674	14.279	0.004
Seldom (ref)	1.000			
Estimated amount spent on healthcare last year (₦)				
None (ref)	1.000			
Less than 1,000	0.186	0.060	1.577	0.089
1,000 - < 5,000	0.680	0.022	1.210	0.125
5,000 - < 10,000	2.901	0.586	14.363	0.192
10,000 and above	2.026	0.250	16.417	0.508

ref- Reference Category, CI- Confidence Interval, UB- Upper Boundary, LB- Lower Boundary, AOR- Adjusted Odd Ratio

Table 2 describes response to enrollment in CBHI scheme, majority (84.1%) have not been enrolled in any health insurance scheme while 63.0% find CBHI scheme acceptable for paying for their health care. Most (84.6%) believe that access to CBHI will improve access to healthcare services and make healthcare more affordable.

Table 3 describes the WTP for CBHI. Most of the respondents were willing to pay for CBHI (86.3%) and willing to enroll other household members in

the CBHI scheme (73.6%). A large percentage of respondents were willing to pay between ₦1,000 to ₦5,000 (US\$2.63 to US\$13.16) per year for CBHI (44.3%). The preferred frequency of payment was annually among 39.6% of the respondents. Feeding was responsible for the major (63.7%) monthly expense of the respondents.

As shown in table 4, there were statistically significant associations between the WTP for CBHI and age ($p=0.003$), gender ($p<0.001$), level of

education ($p < 0.001$), income ($p = 0.018$), number of children ($p = 0.026$), frequency of illness ($p = 0.037$) and estimated amount spent on health care last year ($p < 0.001$) of respondents. There was no statistically significant association between WTP for CBHI and other factors.

Table 5 shows the binary logistic regression for the factors associated with WTP for CBHI in this study. Age group, gender, level of education, number of children, income and frequency of illness were significant predictors of WTP for CBHI. Respondents who were 50 years or older and those who were between 40-49 years were about 13 and 143 times respectively more willing to pay for CBHI than respondents < 20 years of age (AOR: 13.270, 95%CI: 1.597-110.267; AOR: 142.996, 95%CI: 10.689-1913.009). Female respondents were about 9 times more willing to pay for CBHI than male respondents (AOR: 9.155, 95%CI: 3.680-22.775). Respondents with tertiary level of education are about 23 times more willing to pay for CBHI than respondents with no formal education (AOR: 23.420, 95%CI: 1.648-850.921). Respondents with no children are 20 times more willing to pay for CBHI than respondent with 5 children and above (AOR: 20.099, 95%CI: 2.705-149.364). Respondents who earn $\geq \text{₦}30,000$ are about 2 times more willing to pay for CBHI than respondents who earn $< \text{₦}30,000$ (AOR: 2.248, 95%CI: 1.278-6.499). Likewise, respondents who often and sometimes fall ill are 6.5 and 4.9 times respectively more willing to pay for CBHI than respondents who seldom fall ill (AOR: 6.505, 95%CI: 1.623-26.065; AOR: 4.889, 95%CI: 1.674-14.279).

Discussion

This study assessed the WTP for CBHI among artisans in a community in Ekiti State. Majority of the respondents replied positively when asked if willing to pay for CBHI and most of them were willing to enroll other household members into the program as well. This level of WTP is similar to that of a study carried out in Nigeria.¹¹ However, it is lower than that of another study done in Ghana.¹² It was observed that the level of their willingness varied with the amount as well as with the frequency of premium payments. Most of them were willing to pay lower premium rates compared with a small

proportion who were willing to pay higher rates. Therefore, increasing amounts yielded a substantial decrease in WTP. Also, a large proportion of the respondents preferred an annual premium payment of the insurance scheme to the more frequent payments method.

Although enrollment among the participants was generally poor, with only 15% enrollment in any health insurance program, there seemed to be a widespread acceptance and acknowledgement of the CBHI scheme after it had been explained. About two-third of the respondents found it acceptable as a strategy for paying for health care and majority believed that CBHI would improve access to health care services and make it more affordable. These findings are similar to that of a study done among surgical patients in a rural area in Niger-Delta, Nigeria which showed that patients paid for care mostly with personal savings and most of them did not enroll for a health insurance program. However, after giving them information, majority of them were willing to enroll in the program.²¹ This suggests that information must be disseminated to promote acceptance of CBHI.

In Nigeria, it has been documented that there is a clear desire on the part of the less well-off households to join health insurance schemes and most of them stated that CBHI was an acceptable means of paying for health with the poorest households expressing the greatest willingness to enroll.¹⁰ Also, another study done in Enugu and Anambra State, Southeast Nigeria among different population groups showed that the poor has higher tendency of using health insurance.²² Although our study was restricted to those of artisans in a community, a similar pattern was observed. Respondents with a monthly income of $\text{₦}30,000$ were two times more willing to pay for CBHI than those with higher income.

This study found the following characteristics to be associated with WTP for CBHI; age, gender, level of education, number of children, income, frequency of illness and estimated amount spent on healthcare. It was shown that those within the age group of 40-49 were willing the most to pay for CBHI. Lower age groups were less willing to pay for CBHI. This result is similar to that of a study done among artisans in Ebonyi State, Southeast Nigeria.²³ This could be attributed to the health status of the

younger age group, knowing well that most of the chronic diseases that may require huge continuous health expenditure is commoner in the older age group. It could also be attributed to the reduced levels of education of the younger age groups. For the younger respondents, data analysis revealed that they were less educated. As a result, there is a reluctance to participate and pay for what they may have little or no knowledge about and what they perceive as being of no concern to them.

This study also found that females were more willing to pay for CBHI. A similar finding in Tanzania²⁴ revealed that females had a higher mean WTP than males and this was statistically significant. Also, majority of households who were not willing to pay for CBHI had male household heads and only 20% had female household heads. However, this result is at variance with other findings where it was noted that males were more willing to pay than females in two different communities in Nigeria and Ghana.^{16,25} Closely related to this finding is the finding in Namibia where more individuals living in male-headed households were insured than in female-headed households.²⁶

With regards to level of education, the proportion of respondents willing to pay for CBHI with tertiary education was the highest. Level of education was directly proportional to WTP for CBHI in this study. The results of a study done in the rural areas of Kwara State, Nigeria showed that the more the educational level attained, the more amounts and WTP.²⁷ This is also consistent with findings from previous studies where people with higher education were more willing to pay.^{16,25}

There was an increasing WTP with less children, participants with no child were 20 times more willing to pay than those with 5 or more children. A study done in Osun state, Nigeria had similar findings.²⁷ Income was another predictor of WTP for CBHI in this study, with those with higher income having increased WTP. Income-regressive flat-rate payments are a problem in Nigeria and inability to pay premiums is a big obstacle which is further complicated by the absence of mechanisms in place to help those who cannot afford to join.¹⁰ A study done in Kaduna State, Northwest Nigeria shows that the higher the income of the household or individual, the more likely they are to participate

health insurance schemes.²⁸ Lower income earner not willing to pay for CBHI may result from an inability to afford it. The economic intuition behind this suggests that income is a very important variable in determining the demand for products including health insurance.²⁹ This finding with respect to income has been the debate and argument about the WTP approach in health care evaluation as the amount households or respondents are willing to pay is an increasing function of their ability to pay.

The frequency of illness of respondents also affects WTP for CBHI. Those who often and sometimes fell ill were about seven and five times more likely to pay for CBHI than those who seldom fell ill. This may indicate that frequent illnesses incur more costs and so increase the need for payment subsidies. Additionally, a pattern revealing a decreasing WTP with less amount spent on healthcare was observed. The other socio-demographic factors were not significant, consequently, they were less likely to influence the respondents' WTP for CBHI.

The cross-sectional nature of the study design may not allow cause and effect relationship between characteristics of interest.

Conclusion

The study revealed that majority of respondents were willing to pay for CBHI and willing to enroll other household members in the CBHI. The level of WTP however varies with the amount to be paid and the frequency of payment. Age, gender, level of education, number of children, income and frequency of illness were characteristics that predict WTP for CBHI in this study. Therefore, given this level of WTP, there is a need for government policy that will allow artisans to easily enroll for CBHI in Ido-Ekiti. This policy should be flexible enough to allow the artisans pay a premium that would be affordable and at a frequency that would be acceptable to them.

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