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FACTORS AFFECTING WILLINGNESS TO PAY FOR COMMUNITY BASED HEALTH INSURANCE AMONG SECONDARY SCHOOL TEACHERS OF KATSINA STATE, NIGERIA

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ABSTRACT

Introduction: Universal health coverage is a major challenge in Nigeria where out of pocket payments still dominates health care financing. The community based health insurance scheme was introduced in Nigeria through the National health insurance scheme as an alternative means of financing health care especially for the rural poor and low income earners. The objective of this study is to assess the willingness of secondary school teachers of Katsina Local Government Area to pay for this community based insurance scheme.

Methodology: This is cross-sectional study was conducted among secondary school teachers of Katsina local government area of Katsina State using cluster random sampling technique. A self-administered questionnaire which consisted of the Contingent Valuation method for evaluating the WTP for the community based health insurance scheme was used in this study.

Results: The response rate was 88.4%. The mean age of the respondent's was 36.32±7.58 years. More than 62% of the respondents were males, almost half of the respondents 44.1% (n=208) have a family size of 6 to 10 family members. Mean monthly income of respondents was ₦39,192.03± ₦10,900.99. The results indicated that minimum amount the respondents were willing to pay was ₦200 and the maximum was ₦5000. The predictors of willing to pay for the CBHI were ages 41 to 50 years (AOR=0.313; 95%CI: 0.149-0.655), 51 to 60 years (AOR=119; 95%CI: 0.039-0.366) and recent illness encountered (AOR=24.954; 95%CI: 7.581-82.135).

Conclusion: In conclusion, our study findings suggest that majority of the respondents were willing to enrol and pay for the CBHI scheme and to pay an average of ₦1585 per month.

Keywords: Nigeria, Willingness to pay, Community based health insurance, Out of pocket, Universal health coverage.

1.0 Introduction

Universal health coverage (UHC) has been difficult to achieve in Nigeria with payment for health care mainly from out-of-pocket or payment at point of service (Ataguba et al, 2008). A report by the World Health Organisation (WHO) in 2015 shows 69% of health expenditure in Nigeria was out-of-pocket (OOP). The WHO views out-of-pocket spending an obstacle to health care coverage and suggested that, the only way to reduce OOP health financing is by moving towards health insurance and risk pooling schemes (WHO, 2010).

The Federal government of Nigeria started a National health insurance scheme (NHIS) in 2005 as a way to provide coverage for Nigerians. Only about 5% of the federal government employees from the formal sector were enrolled in the scheme (NHIS, 2012) thus, leaving the informal population who are mostly poor unprotected. The federal government of Nigeria then through the NHIS scheme in 2008 started a rural community based social health insurance scheme which it intended to use to provide coverage of people employed in the informal sector and rural areas (Adinma and Adinma, 2010).

Community based health insurance schemes are seen as means of providing insurance coverage to communities who are unlikely to be immediately covered from the social or private health insurance scheme (Shimeless, 2010). The CBHI scheme in Nigeria is designed in such a way that a public health facility will be built and equipped by the government, community or as a donation. The facility will then be contracted out to a private sector health provider to manage it together with the government and also the community (Michael, 2014). It is believed the community health insurance (CBHI) scheme has the ability to provide improved health care access and financial security which can be achieved through decreasing OOP expenditures (Christian Aid, 2015). This study aims to assess the willingness of Local Government Area (LGA) secondary schoolteachers to pay for the CBHI scheme

2.0 Methodology

This study was conducted among secondary school teachers of Katsina local government area (LGA) of Katsina State. This was was a cross-sectional study which was carried out from 26th July to 15th August 2016. A total of 554 teachers were recruited into the study using cluster random sampling technique with each selected school serving as a cluster. The inclusion criteria were all male and female secondary school teachers in Katsina (LGA) while the exclusion criteria were teachers on leave during the data collection and teachers who are only on teaching practice. The minimum sample size was determined using the formula for hypothesis testing of two group comparison (Lemeshow et al, 1990). The sample size was 504 after considering 20% non-response rate and design effect of two. A structured self-administered questionnaire which consisted of the Contingent Valuation method for evaluating the WTP for the community based health insurance scheme was used in this study.

Quality control was obtained through face validity and content validity while reliability was assured through test-retest of the questionnaire. Data entry and analysis was done using SPSS (IBM SPSS Version 22.0). Analysis involved two stages. For descriptive statistics, categorical data was summarized using frequency and percentage while for continuous variables, it was described using means and standard deviations (SD). Next, bivariate analysis was done using

Chi square test in measuring associations between two categorical variables. Level of significance was predetermined at a p-value of less than 0.05. Ethical approval was obtained from the Ethics Committee for Research involving Human Subjects of University Putra Malaysia (JKEUPM).

2.1 Measurement of Willingness to Pay

In this study, willingness to pay is measured through the Contingent valuation method (CVM). It is a method for estimating the value that a person places on a good, usually one that is not sold in markets such as environmental quality or good health (World Bank, 2002). The method elicits directly what people are willing to pay for a particular good. In a contingent valuation survey, first, the good and a hypothetical market in which the good can be bought are explained to the respondents (contingency). They are then asked to state the maximum amount they are willing to pay for the good (valuation). Contingent valuation studies often take a variety of elicitation formats such as, the open ended elicitation method, the dichotomous choice method (single or double bounded), the bidding game method and the payment card method (Kerr, 2001). In eliciting willingness to pay (WTP), Double-Bounded Dichotomous Choice variant of Contingent Valuation Method was used in this study. This was supported with open-ended question which will enable respondents to pick lower amounts or higher amounts they are sure to pay

3.0 Result

The overall response rate for this study was 88.4%. The data was cleaned and then tested for normality using measures of skewness, kurtosis, and histograms. All continuous variables were tested for normality using the EXPLORE option in SPSS. All variables show moderate skewness and kurtosis which is within normal distribution.

3.1 Socio-demographic and socio-economic characteristics of respondents

Table 3.1 shows the socio-demographic and socio-economic characteristics of the study respondents. The majority of respondents aged between 31-40 years (n =220, 46.6%). This was followed by 127 (26.9%) of those aged between 21- 30 years. One hundred (21.2%) of respondents were aged between 41-50 years and while 25 (5.3%) of them were aged above 51-60 years. The mean age of respondents was 36.32 ± 7.58 year, and ranged from 21 to 60 year. The study comprised mostly of male respondents (n=297, 62.9%).

The majority of respondents were married (n=334, 70.8%), 105(22.2%) were single, 21 (4.4%) were divorcees while 12 (2.5%) were widowed. A total of 346 (73.3%) of the respondents were of Hausa-Fulani ethnicity, while 59(12.5%) were Yorubas and 34(7.2%) were Igbos. Thirty three (7.6%) were of other minor tribes like Ibira, Igala, Tiv and Idoma. The results showed that 210(44.5%) of the respondents have 1 to 5 family members while 161 (34.1%) have 6 to 10 family members, and 101(21.4%) have a family size that is greater than 10. The mean and standard deviation of the family size was 7.17 ± 3.99 which ranged from 1 to 18 family members.

Most of the data (n =213, 45.1%) were collected from holders of the Diploma or National Certificate of Education (NCE), followed by Bachelor degree holders (n=147, 31.1%). The

rest 112 (23.7%) of the study respondents were holders of Master degree. The Diploma and NCE in Nigeria are considered as the same thing and majority of the respondents have that level of education because the basic requirement to teach in secondary school in Nigeria is either having a Diploma or NCE.

The study found that 125 (26.5%) respondents earned ≤ ₦30,000 monthly, 304(64.4%) of the respondents earn between ₦30,001 to ₦50,000 monthly, while, 43(9.1%) earned > ₦50,000 monthly. The mean and standard deviation of their income was ₦39,192.03 ± ₦10,900.99, monthly income of respondents ranged from ₦19,000 to ₦78,000.

Table 3.1: Distribution of socio-demographic and socio-economic factors among study respondents (N=472)

Variables	Frequency (n)	Percentage	Mean age±SD	Minimum	Maximum
Age			36.32±7.58	21	60
21-30	127	26.9			
31-40	220	46.6			
41-50	100	21.1			
51-60	25	5.3			
Gender					
Male	297	62.9			
Female	175	37.1			
Marital status					
Married	334	70.8			
Single	105	22.2			
Divorced	21	4.4			
Widowed	12	2.5			
Ethnicity					
Hausa	346	73.3			
Yoruba	59	12.5			
Igbo	34	7.2			
Others	33	7.0			
Family Size			7.17±3.99	1	18
1-5	210	44.5			
6-10	161	34.1			
≥11	101	21.4			
Qualification					
Diploma/NCE	213	45.1			
Bachelor degree	147	31.1			
Master degree	112	23.7			
Monthly Income			₦39,192.03± N10,900.99	₦19,000	₦78,500
≤ ₦30000	125	26.5			
₦30,001-50,000	304	64.4			
₦50,000	43	9.1			

Note: ₦=naira (Nigerian currency), Exchange rate Naira to USD: ₦305=1 USD (Date July 2016)

3.3 Distribution of Willingness to Pay among Study Respondents

Figure 1 illustrates willingness to enrol and pay and level of willingness to pay among the study respondents. About three quarters of them (n=353, 74.8%) were willing to pay and enrol for the CBHI scheme, whereas 25.2% respondents (n=119) indicated their unwillingness to pay and enrol for CBHI scheme.

Table 3.2 shows the amount that the respondents' were willingness to pay. Most of the respondents (n=176, 37.3%) indicated that they were willing to pay ₦1,000 or less as the maximum cost of premium under the CBHI scheme while, 24.8% (n=117) respondents indicated their WTP as an amount between ₦1,001 to ₦2,000 for their maximum WTP amount. Fifty five (11.7%) were willing to pay a maximum amount between ₦2001 and ₦3000. Only 5(1.1%) respondents were WTP to pay an amount that exceeded ₦3000. The mean maximum amount that they were willing to pay was ₦1584.40 ± ₦805.46 and it ranges between ₦200 to ₦5000.

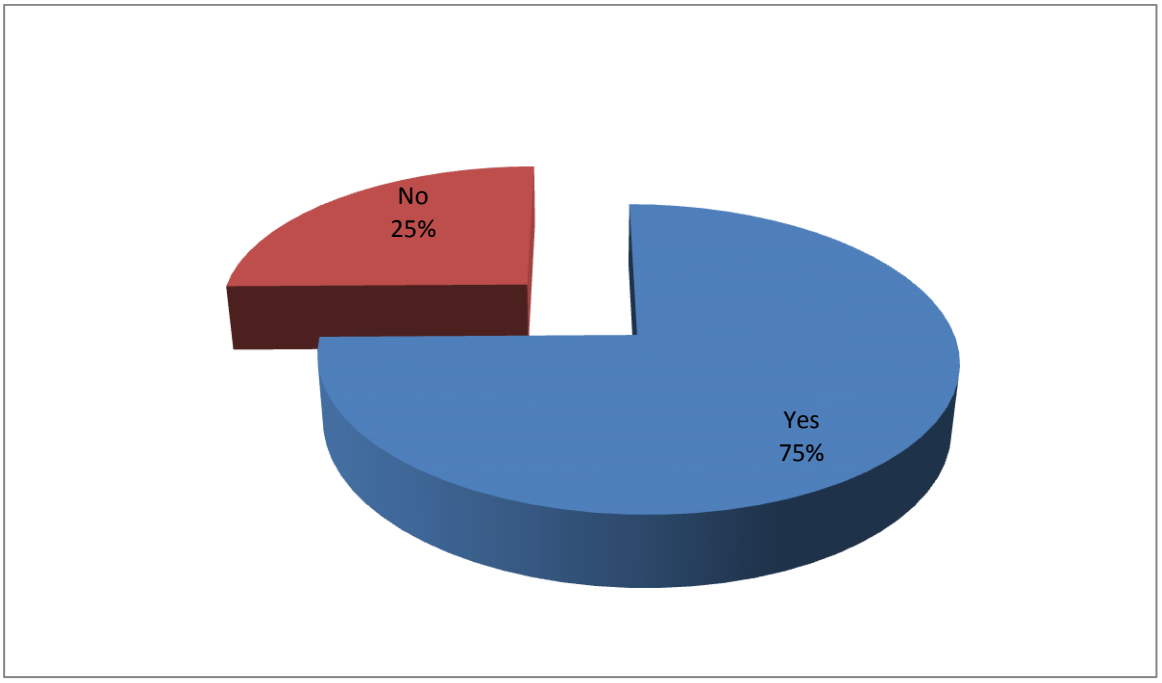

Figure 1: Distribution of willingness to pay for community based health insurance scheme among study respondents

Table 3.2: Willingness to pay status of study respondents (N=353)

Variables	Frequency (n)	Percentage (%)	Mean±SD	Minimum	Maximum
Maximum WTP			₦1584.40±₦805.46	₦200	₦5000
≤₦1000	176	37.3			
₦1001-₦2000	117	24.8			
₦2001-₦3000	55	11.7			
≥₦3001	5	1.1			

Note: ₦=naira (Nigerian currency), Exchange rate Naira to USD: ₦305=1 USD (Date July 2016)

3.4 Factors associated with WTP for CBHI among study respondents

For the following analysis, comparisons were made between those willing to pay and those who were not willing to pay using bivariate analysis.

3.4.1 Association between WTP and socio-demographic and socio-economic factors among study respondents

Table 3.3 shows the association between WTP and socio-demographic and socio-economic factors. The results show there is a significant association between willingness to pay and age (X^2= 36.670; *df* =3; *P*<0.001). The result also shows significant association between WTP and monthly income of respondents (χ^2=12.269; *df*= 2; *P*=0.002).

3.4.2 Association between WTP and health related factors

Table 3.4 shows association between WTP and health related factors. There are significant associations between WTP and all health related factors. Based on the analysis, health status (χ^2=5.856; *df*=1; *P*=0.016), history of recent illness (χ^2=19.106; *df*=1; *P*<0.001), history of seeking for medical treatment (χ^2= 19.643; df=2; *P*<0.001), and the cost of treatment (χ^2=20.819; *df*=2; *P*<0.001) are all statistically significantly associated with willingness to pay. For the bivariate analysis, the method of payment for treatment cost was re-classified into out-of-pocket (OOP) and not OOP.

Table 3.3: Association between WTP and socio-demographic and socio-economic factors among study respondents (N=472)

	Willingness To Pay					
	YES(353)		**NO(119)**			
Variables	**Frequency**	**Percentage (%)**	**Frequency**	**Percentage (%)**	**χ^2**	**P-Value**
Age					36.670	<0.001*
21-30	101	79.5	26	20.5		
31-40	181	82.3	39	17.7		
41-50	62	62.0	38	38.0		
51-60	9	36.0	16	64.0		
Gender					0.469	0.493
Male	219	73.7	78	26.6		
Female	134	76.7	41	23.4		
Marital Status					0.265	0.607
Married	101	28.6	37	31.1		
Not Married	252	71.4	82	68.9		
Ethnicity					1.919	0.589
Hausa	256	74.0	90	26.0		
Yoruba	44	74.6	15	25.4		
Igbo	25	73.5	9	26.5		
Others	28	84.8	5	15.2		

Number of Family					2.196	0.334
1-5	164	78.1	64	21.9		
6-10	116	72.0	45	28.0		
≥11	73	72.3	28	27.7		
Academic qualification					0.047	0.977
Diploma/NCE	160	75.1	53	24.9		
Bachelor	109	74.1	58	25.9		
Master	84	75.0	28	25.0		
Monthly Income					12.269	0.002*
≤ ₦30000	100	80.0	25	20		
₦30,001-₦50,000	230	75.5	74	24.3		
>₦50,000	23	53.5	20	46.5		

Note(*) – significance that is p<0.05, ₦=naira (Nigerian currency), Exchange rate Naira to USD: ₦305=1 USD (July, 201

Table 3.4: Association between WTP and health related factors

Variables	**WTP**				χ^2	**P-value**
	Yes(353)		**No(119)**			
	Frequency	Percentage(%)	Frequency	Percentage(%)		
Perception of Health status					5.856	0.016*
Good	211	79.0	56	21.0		
Not good	142	63.0	63	30.7		
Recent illness					19.106	<0.001*
No	60	58.3	43	41.7		
Yes	293	79.4	76	20.6		
Did u seek med treatment					19.043	<0.001*
No	26	74.3	9	25.7		
Yes	267	79.9	67	26.1		
Cost of Treatment					10.700	<0.001
≤₦1,000	113	89.7	13	10.3		
₦1,001-₦3,000	111	79.9	28	20.1		
>₦3000	43	62.3	26	37.7		
How cost treatment was paid					0.572	0.450
OOP	251	80.4	61	19.6		
Not OOP	17	73.9	6	26.1		

Note(*) – significant that is p<0.05, N=naira (Nigerian currency), Exchange rate Naira to USD: ₦305=1 USD (July, 2016)

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4.0 Discussion

The majority of study respondents (n=353, 74.8%) were willing to pay and enrol for CBHI scheme. High level of WTP is consistent with those found in similar studies conducted in Nigeria such as study carried out in a rural community in North Central Zone Nigeria (Banwat et al, 2013) where 93.6% of study respondents were found to be willing to pay for CBHI scheme. Another study that was conducted in North Central Nigeria (Babatunde et al, 2012) also showed a high level (87%) of WTP for the CBHI scheme. However, a study carried out in Pakistan (Jahangeer and Haq, 2015) showed a low level of WTP.

The average amount that the respondents were willing to pay was ₦1584.4± ₦805.46 (5.2, USD± 2.6, USD) per month. This is close to the finding in a study by Barnighausten et al. (2007) where WTP among informal sector workers in Wuhan, China, found that these workers were willing to pay the equivalent of 4 US Dollars each person per month. However our finding is higher than another finding in Nigeria (Babatunde et al, 2016) where the average amount the households were willing to pay per person per annum was ₦2,139.45 that is (1.1 USD per person per month). This may be due the fact that our study respondents are teachers and so they have a stable monthly income compared to households who are mostly self-employed. A study in Ilorin, Nigeria (Usman, 2013) found the mean WTP per person to be ₦1798 (4.51 USD per annum).

In this study, the data indicates that of the overall respondents of 472 teachers, 297 are males and 175 are females. The analysis on WTP by gender revealed female respondents as more willing to pay for the CBHI scheme compared to their male counterparts (76.6% vs 73.7%). This could be because most females are not the breadwinners of their homes and so may find it easier to pay for the scheme. This is similar to the findings of a study carried out in Myanmar (Oo et al., 2015), where higher prevalence of WTP was associated with females.

Most of the study respondents were aged between 31-40 years old. Age is found to be associated with WTP in many studies. This study also found statistical significant association between age and WTP (P<0.001). Respondents with age 31 to 40 were more willing to enrol and pay for the CBHI scheme than other ages. Another study in Nigeria on WTP (Adebayo, 2015) also found respondents less than 40 years were more willing to pay for the scheme.

The study found majority of study respondents that were married to be more willing to enrol and pay for the scheme compared to those who were not (71.4%). Furthermore, respondents from other minority ethnic groups, lower family size (1 to 5 family members), lower educational level, (NCE/diploma) and lowest level of income (≤₦30, 000) to be more willing to enrol and pay for the CBHI scheme. The results show an association between WTP and level of income (P=0.002).

Result from this study show that respondents who perceive their health status as good, who encountered illness within the last six months, who spent a lower amount on treatment and paid OOP, were more willing to pay for the CBHI scheme. Study found statistically significantly associated between WTP for CBHI scheme and health status (P=0.016), recent illness (P<0.001), sought medical treatment (P<0.001) and cost of treatment (P<0.001).

5.0 Conclusion and recommendation

Majority of respondents were found to be willing to enrol and pay for the CBHI scheme (74.8%). The average amount they are willing to pay is N1584.4 (5.2, USD) per month. Respondents aged more than 50, those who experienced recent illness, perceived as having poor health status, who took a shorter distance to get to health facility and were aware of the health insurance scheme were found to be predictors of WTP for the CBHI scheme. Age, monthly income, health status, recent sickness, cost of treatment, satisfaction level of quality of care, distance to health facility, and awareness of health insurance were found to be statistically associated with WTP. In conclusion, community based health insurance scheme is feasible among secondary schoolteachers of Katsina LGA, Katsina state and hence can be a means to improve the welfare of this community.

The NHIS should begin the process of creating a framework of instituting a CBHIS using the teachers union as a community and developing the capacity of the union and its membership to run it. Willingness to pay among the teachers can still be increased by raising more awareness on the benefits of enrolling in the scheme. There is a need for further in-depth study on WTP for the CBHI scheme among secondary school teachers with focus on LGAs and the actual factors that determine their WTP.

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