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Assessment of the acceptability of Community Based Health Insurance and maximum willingness to pay amongst urban slum dwellers in Abuja, Nigeria.

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ABSTRACT

Introduction: Lack of financial risk protection especially for households within the informal sector has been the bane of the Nigerian Health System. Many of the citizens pay for their healthcare needs through the regressive out-of-pocket payment method. Community Based Health Insurance is one of the non-mandatory ways of raising revenue to finance health. Being a non-mandatory method, it is important to scientifically elicit acceptability and stated preferences amongst households. so as to know areas of intervention to convince these households to register for the scheme. Willingness to pay, which is a contingent valuation method, was used in this study to elicit maximum amount urban slum dwellers in Abuja were willing to pay. Also, data was collected to determine acceptability of CBHI. Methodology:. The study was cross sectional descriptive study. The study was a quantitative study involving five urban slums in Abuja using a multi-stage systematic sampling method using well-structured questionnaires as interview tools. Data were analyzed using descriptive statistics, statistical test and presented in charts and tables. Results: The study revealed very high acceptability for CBHI 81.4%, willingness to enroll for self (78.2%) and (74.8%) for other household members. It also showed that at premium N500.00 only, 59% of the urban slum dwellers were willing to pay for CBHI while 72.2% were willing to pay a premium of N400. The maximum amount they were willing to pay was N613.77, N554.65 and N456.65 for self, household members and other non-family members (altruistic) respectively. Discussion: Urban slum dwellers in Abuja accepted CBHI and are willing to utilize the social solidarity inherent in community financing and contribute for their healthcare needs through CBHI. These slum dwellers can willingly contribute N500 per person per month using the median price of this study. It is recommended that owning to the high acceptability and willingness to pay findings of this study, the Federal Capital Territory Health and Human Services Secretariat should immediately commence the process of activating CBHI pools across the slums in Abuja to ease their access to healthcare.

Key Words: Acceptability, Willingness to pay, (WTP), Community Based Health Insurance (CBHI), Urban Slums, Abuja.

INTRODUCTION

Community Based Health Insurance has become a driver towards achieving Universal Health Coverage because of its ability to cover a larger population since it is where the bulk of the citizens reside. The need for Community Based Health Insurance cannot be over emphasized since National Health Insurance Scheme

(NHIS) is currently covering about 7.5 million Nigerians (4.3%) in one form of health insurance or the other[1]. However this figure is mainly for the formal sector health insurance which covers only federal government employees and their dependents. In several countries, community health insurance have proven to increase access to health care services, especially among children, pregnant women, rural household and informal workers, majority of whom are excluded from formal insurance. Community based health insurance can also help to improve efficiency and quality of health care services by creating greater competition among healthcare providers and increase the use of medical services[2].

In Sub-Sahara Africa, Nigeria is one of the Countries with very bad health outcomes[3]. The health indices in Nigeria have not shown significant improvement in all acceptable indicators used in evaluating a health system[3]. The maternal mortality ratio is 576 per 100,000 live births[3] while 61% of pregnant women have access to skilled professional during antenatal clinics and skilled birth attendant during delivery[3]. Also a contraceptive prevalence rate of 15% with only about 10% of women of reproductive age using one form or the other of modern family planning methods[3]. In child's health it has not also been encouraging as the infant mortality rate is 69 per 1000 live birth which ranges from 89 in South West to 222 in North East respectively[3]. Under-5 mortality is 128 per 1000 live births with vaccination coverage of 25% of children 12-23 months who have received all basic vaccinations[3]. This statistics at a glance shows a weak health system that requires an all-inclusive intervention towards addressing all these challenges[4]. Above all lack of financial risk protection has been the bane of the Nigerian health system and that contributed to why in 2000 she ranked 187/191 in the health system ranking of comity of member states[5].

Research evidence is required in the design and implementation of CBHI Schemes so as to uncover the barriers to acceptance of the programme by the benefiting community. This will ensure that it is viable and has medium and long term sustainability plan. It is also necessary in determining whether all socio-economic groups, gender, occupational groups and urban poor dwellers would equally be willing to enroll in, pay and use services made available through CBHI[7]. The main reason for determining in monetary terms the amount households are willing to pay for community health insurance is to mitigate the unexpected effect of healthcare payment and help alleviate poverty since health care market is characterized with uncertainties[7]. Therefore the results obtained in this study will enhance policy in determining the urban poor household's health status, healthcare needs and the willingness and readiness to participate in a community financing scheme.

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Nigerian urban reproductive health initiative (NURHI) 2013[19]reportsshow that in 1950, Nigeria had over 30M rural populations but less than 4M urban populations. Over the years, Nigeria's rural and urban populations continued to grow, but after 1990, the rural population grew more slowly, whereas urban growth became very rapid[19]. In 2005, Nigeria's rural population numbered over 75M compared to 65M urban population[19].

By 2010, the urban and rural populations were nearly equal. It is projected that by 2015, three years from the date of the report, Nigeria's urban population will be almost 94M while the rural population will be around 82M[19]. More people will be living in Nigeria's cities and the rapid urbanization is expected to continue into the future. With the increasing globalization and the unequal distribution of basic amenities which favours the urban cities, the quest for urban migrations has created the growth of the urban poor populations[19]. International statistics indicate that Nigeria has been experiencing one of the fastest rates of urbanization in the entire world[19]Growth rates in urban areas of Nigeria are almost double the growth rates of rural areas[19]. The pace of urbanization is higher in Abuja FCT as large numbers of people have been flocking to the capital city in search of greener pastures[8]. The 2006 census indicates that Abuja has the highest exponential growth rate of 9.3 in Nigeria[8]. This population is characterized with poor socioeconomic status and high population index[3]Urban slum dwellers often face health risks like those of rural villagers, similar gaps in knowledge of prevention and treatment also exist amongst this people[19]. Access to health services appears more difficult for urban slum dwellers than commonly realized among urban poor; those living in slums, squalors and squatter settlements can face risks well in excess of rural health risks[10].

GENERAL OBJECTIVE

To determine the willingness of households to contribute to community based health insurance thus increasing the level of financial risk protection amongst the urban slum dwellers in Abuja, Nigeria.

Specific objectives

1. To determine the acceptability of community based health insurance among urban slum dwellers.
2. To establish the maximum amount urban slum dwellers are willing to pay as premiums for community based health insurance.
3. To examine the reliability of elicited willingness to pay using inter-rater, tests retest reliability.

METHODS

This study was a cross-sectional descriptive study and was used to determine pricing, willingness and

Table 1: Demographic Characteristics of the Respondents

Status of Respondent	**Frequency (%) N=500**	**Quartile**	**Frequency (%)**
Female Head of household	39 (7.8%)	SES 1	116 (25.5) Poorest
Male Head of household	212 (42.4%)	SES 2	113 (24.5) Very poor
Wife	205 (41.0%)	SES 3	119 (26.0) Poor
Grand Mother	4 (0.8%)	SES 4	109 (24.0) Least Poor
Representative of Household	40 (8%)	**Household asset holdings across respondents (N=500)**	
Household Main Income Earner	264 (52.8%)	**Household Assets**	**n (%)**
Main Decision Maker	280 (56.0%)	Radio	367 (73.4%)
Sex	Mean	Television	437 (87.4%)
Female	276 (55.2%)	Air Conditioner	45 (9.0%)
Male	224 (44.8%)	Bicycle	30 (6.0%)
Respondents that went to School	481 (96.2%)	Motorcycle	55 (11.0%)
Highest Completed Education Level	Mean	Car	138 (27.6%)
Primary	74 (15.4%)	Fridge	319 (63.8%)
Junior Secondary	41 (8.6%)	Generator	294 (58.8%)
Senior Secondary	224 (46.6%)	Electric Fan	434 (86.8%)
Teachers Training College	10 (2.1%)	Others Comments	293 (58.6%)
College of Education	41 (8.5%)		
University or Polytechnic	72 (14.9%)		
Others	19 (3.9%		
Occupation	Mean		
Farmer	17 (3.4%)		
Unemployed	34 (6.8%)		
Petty Trading	141 (28.2%)		
Government Worker	45 (9%)		
Employed in Private Sector	57 (11.4%)		
Big commercial businesses	18 (3.6%)		
Self Employed Professional	145 (29.0%)		
Others	43 (8.6%)		

	Mean	Median	StdDev	Min	Max
Number of people that live in the Household including the head	4.69	4.00	2.480	1	26
Age of Respondents (Years)	32.95	31.00	8.622	16	62

acceptability by application of well-structured questionnaires as an interview tool conducted in five urban slums in Abuja, Nigeria. Multistage sampling was chosen for the study. This type of sampling technique consists of sampling at multiple stages (Singleton & Straits, 2010). In this study, the unit of analysis is households. First, the households were clustered into five urban slums. In each suburb, a central location was chosen such as Schools, Churches, Mosques, Police Station, Clinics or markets. Then a household closest to the starting point was first chosen, thereafter chose every other household until approximately the required sample size was collected. It was a multi-stage sampling process (a) ten (10) communities (i.e. two per slum) from the five (5) identified study areas was selected to reflect the slum settlements evenly. The sample size was determined using power analysis).Using the FCT annual exponential growth rate of 9.3, the projected exponential population of Abuja in December 2015 was 3, 228, 725 from 1,406, 239 in 2006 national census figure[8].Desired sample size= n+ 10% attrition rate.

Table 2: Acceptability of Community Based Health Insurance (CBHI) by Respondents

Acceptability	N (%) N=500
Acceptability of CBHI for Health Care Payment	407 (81.4%)
CBHI Will Improve Access	444 (89.0%)
Enrollment in CBHI will make Health Care Affordable	420 (84.0%)
Willing to enroll for CBHI	391 (78.2%)
Willing to enroll other Household Members	374 (74.8%)

Using an error margin of 5% at 95% confidence interval and a population of 3, 228, 725 the sample size was 384.The desired sample size was 422, and then approximated to 500. The quantitative study was done in these same locations in Abuja. In each of the 5 selected study areas, 100 households were interviewed.

Data was collected with the assistance of trained research assistants. Ten (10) research assistants were recruited for the purpose of this research for two (2) month. The assistants were trained by the principal investigator for two weeks to master the different sections of the questionnaires and improve their skills in data collection. Three assistants were deployed per identified study area with supervision from the principal investigator. Data was collected from the head of the household, and where there was no head, it was collected from the wife or next to the head of the household. It was an interviewer administered survey with price elicitation. In eliciting willingness to pay, Contingent valuation was used to elicit the willingness to pay for self, other members of the household including altruism using only the bidding game technique[11]. Depending on the answer to the starting-bids, three iterations were used in the bidding game i.e. N600, N500 and N400.

The final response was a continuous quantitative amount that indicated the respondents' maximum willingness to pay. Before the bids, an introductory explanation and scenario about health insurance was provided to the respondents before determining their levels of willingness to pay for the scheme. To avoid response bias or non-response, the operations and concept of Community Based Health Insurance and its attributes were explained before starting the bidding game.

Collected data was imputed into the computer, cleaned, coded and rechecked for completeness of data entry. Data cleaning was done to ensure no missing data from the raw data. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 22 and tools used in this study were tabulations, testing of means, and coefficient of variables.

RESULTS

The mean age of respondent was 32.95 years with a median age of 31 years. The minimum age is 16years and maximum being 62 years. Table 1 shows that 52.8% of respondents were main income earners and 56.0% of them were the main decision makers. A total of 96.2% of the respondents went to school and. Majority of the respondents (28.2%) were petty traders and self-employed professionals (29.0%), 3.4% were farmers and 3.6% were business men and women. The mean of people that live in the house including the head of household is 4.69. Table 1also shows that 70% of households had radio, fan and television. The 1 table also shows that about 58.8% had generator, and 63.8% had fridges. Only about 27.6% had a car while only 9% of the respondent had air conditioner in their houses. 11% had motorcycle and 6% had a bicycle.

Table 2 shows that 81.4% of the respondents accepted CBHI as a payment mechanism for health care. 89% agreed that CBHI will improve access while 84% accepted that it will make health care affordable if implemented in the area. 78.2% were willing to enroll themselves while 74.8% where willing to pay for other household members.

Table 3 shows descriptive analysis and the bidding game results for willingness to pay for self and other household members. The results show that 72.2% of the respondents were willing to pay the starting bid of N400. While for other household members, it was found that 52.8% of the respondents were willing to pay the opening bid of N400 and 30.2% at N600. However, altruistic WTP it was observed that at N400 opening bid, 58.8% were willing to pay and at N600 it was 31.6% of the respondents. The bidding game iteration was adding N100 to the starting bid of N400. Mean Stata statistical package. The quantitative statistical

Table 3: Bidding game for WTP for CBHI at different bids

Respondent's Willingness	**N (%) N=500**
Bidding Game WTP for Self	
Opening bid: Premium@N400	361 (72.2%)
Premium @N500	295 (59.0%)
Premium @N600	170 (34.0%)
Bidding Game WTP for Other Household Members	
Opening bid:Premium@N400	264 (52.8%)
Premium@N500	216 (43.2%)
Premium @N600	151 (30.2%)
Altruistic WTP	
Opening bid:Premium@N400	294 (58.8%)
Premium@N500	271 (54.2%)
Premium @N600	158 (31.6%)
WTP (Self)	
Mean	613.77
Median	600.00
WTP (Other Household Members)	
Mean	554.65
Median	500.00
WTP (Altruistic)	
Mean	456.63
Median	500.00

WTP for self was N613.77 and N554.65 for other household members. Mean altruistic WTP was N456.63 Table 4 shows that population within quartile four of the social economic status has the highest maximum WTP (N608.00) while quartile one has the least maximum WTP (N557.26) for self. For other household members and altruistic, quartile four also has the highest maximum WTP.This table shows the test of reliability. Table 5 shows that for WTP for self, inter-rater reliability coefficient was 0.77 CI (0.73-0.80). The test-retest reliability coefficient was 0.94 CI (0.91-0.96). For other household members, the inter-rater reliability coefficient was 0.79 CI (0.76-0.82) while the test retest reliability was 0.90 CI (0.85-0.93). The altruistic WTP had low inter-rater reliability coefficient of 0.51 CI (0.43-0.58) but a high level test retest reliability coefficient of 0.93 CI (0.90-0.96).

DISCUSSION

Demographically, the study finding showed that there were more male head of households which is in conformity with the expectation that in Africa, most males are the head of households when compared to the Ethiopian study[12]. This may not be unconnected with the majority of the respondents being the main income earners and main decision makers. The study revealed that there were more female respondents than male which is at variance with the Ethiopian study that had 71.1% of respondents being males[12]. The socio-cultural difference between the two Countries may have been the reason for this finding[13]. The level of literacy among the slum dwellers appeared high as many of them attended one form of formal education or the other. However, Secondary level education was the predominant level of education attended. This finding showed a predominant number of petty traders and self-employed professionals who may have just finished secondary education and started small business entrepreneurship. The cost of accommodation within the Abuja City center is usually very expensive, thus some very educated people who do not have enough resources for a decent accommodation reside in slums[14]. This study showed that a reasonable

Table 4: Maximum willingness to pay across socioeconomic status

SES	Max WTP (Self)	Max WTP (Others)	Max WTP (Altruistic)
Q1	Mean (SD) 557.26 (207.61)	Mean (SD) 530.91 (286.18)	Mean (SD) 340.76 (179.73)
Q2	563.01 (262.74)	538.35 (326.27)	365.78 (325.29)
Q3	592.42 (365.98)	524.48 (254.97)	410.37 (232.08)
Q4	608.00 (443.47)	544.23 (399.22)	584.29 (827.19)
Total	575.29 (322.76)	534.31 (317.28)	429.02 (476.54)
Concentration Index	-0.55	-0.19	0.34

Table 5: Reliability coefficients for WTP at different prices

	Inter-rater reliability coefficient	95% Confidence Interval	Test-retest reliability Coefficient	95% Confidence Interval
WTP (Self)	0.77	0.73-0.80	0.94	0.91-0.96
WTP (Others household members)	0.79	0.76-0.82	0.90	0.85-0.93
WTP (Altruistic)	0.51	0.43-0.58	0.93	0.90-0.96

population of slum dwellers (A slum is defined as a squalid and overcrowded urban street or district inhabited by very poor people[16] had University or Polytechnic level of education. This study revealed that slum dwellers in Abuja are relatively young people as shown by the mean age of respondents. This study finding unarguably supported the claims that Nigeria is a Country of relatively young population[4] and the rapid migration of young Nigerians from many States to Abuja in search of greener pasture may have contributed to this finding[19]. The household asset holding within the slum showed that many of the slum dwellers had the basic household items such as radio, television and electric fan. However, only very few had Cars and Air Conditioners as this may be related with the low socioeconomic class of the slum dwellers who were predominantly petty traders, this is similar to a study in South East Nigeria.[7]

The willingness to pay for Community Based Health Insurance from the study appeared very high thus rejected the null hypothesis of this study which stated that urban slum dwellers will not be willing to pay for CBHI. The study showed that majority of the slum dwellers accepted Community Based Health Insurance for health care payment and that enrolment will improve access and make health care affordable which is similar to a study in South East Nigeria[7] The willingness to pay for self and other household members respectively were very high from the findings of this study. This is at variance with a study in Anambra, South East Nigeria where less than 40% were willing to pay for themselves and other household members. This finding however supports the study conducted in Oshogbo, South-West Nigeria where 82.8% of head of household were willing to join. However the Oshogbo study showed that only 51.6% of other household members were willing to join the CBHI program[17]. A similar study in Bangladesh[15] and one in Ethiopia[12] also showed an appreciable degree of willingness to join CBHI of 86.7% and 88% respectively. Abuja being a rapidly growing city housing politician is known for high cost of health care[19] and this may have contributed to these findings of high willingness to join CBHI. This high willingness to pay reflected the need to pool resources for health care within the Slums despite the high burden of diseases and frequent utilization of healthcare services. The study also showed a bidding game result that reduced as price of the bid increased and a reduction in altruistic willingness to pay similar to WTP study in Anambra[7]. This finding is not strange as people will generally

accept to pay for themselves rather than others, and, considering the economic reality, increased bid will naturally have reduced interest. The findings showed that mean maximum amount that slum dwellers in Abuja were willing to pay per month for self, other household members and altruistic were all above N400. This finding is also higher than N343 that a study by Onwujekwe et al (2010)[6] elicited at an urban city in Anambra, South East Nigeria. A similar study conducted in Ilorin, North Central Nigeria showed a mean maximum willingness to pay of N522.00. In another Ilorin study by Babatunde et al[18], N2, 139.45 annually i.e. N178 monthly was the maximum amount the respondents were willing to pay. An Ethiopian study in Wondo Ditrict, Oromia region was also lower as the maximum willingness to pay was $10 annually i.e. about N300 (at N300 per $1) monthly[12]. However, since the median value is usually used for pricing, N500 was the best price from the study. Expectedly, the least poor had the highest maximum willingness to pay from the study (concentration index -0.55) indicating more negative effect on financial risk protection from the payment.

The reliability coefficient shows the stability and consistency of the elicited willing to pay. From the study, for head of households was very high among raters and between rates. The study showed an inter-rater reliability coefficient of 77% at 95% confidence interval. This finding confers a very high level of consistency of the first and second raters in the study. The test retest reliability coefficient 94% at 95% confidence interval also indicated a very good consistency from the first and second time of interviews during the study. The finding here shows a higher test retest reliability coefficient when compared with inter-rater reliability coefficient. This finding may be attributed to some challenges of understanding the questionnaires by the raters at the initial stage of the study. It is possible there was clearer understanding of the tools by the raters during the test retest period. Also the inter rater and test retest reliability coefficient were also very high for other household members. However, at 95% confidence interval, the inter rater reliability coefficient was low for altruistic willingness to pay while the test retest was reliability coefficient was high. This finding may be because different raters may have some difficulties eliciting similar altruistic willingness to pay. The study result however rejected the null hypothesis which stated that elicited willingness to pay will not be consistent within the slum dwellers.

Policy implications and recommendations

The policy implication here therefore is that using the high acceptability and maximum willingness to pay findings, the FCT Health and Human Services Secretariat should immediately begin the process of implementing CBHI in all the slums in FCT with the view of integrating all pools into the FCT health insurance programs.

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