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AMONG RURAL HOUSEHOLDS IN EKITI STATE, NIGERIA**

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AWARENESS AND WILLINGNESS TO PAY FOR COMMUNITY HEALTH INSURANCE SCHEME AMONG RURAL HOUSEHOLDS IN EKITI STATE, NIGERIA

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ABSTRACT:

The aims of this study were to assess the awareness and willingness to pay (WTP) for community health insurance (CHI) scheme; and the factors associated with the WTP among rural households in Ekiti State, Nigeria. This cross-sectional study was carried out among 420 households selected through a multi-stage sampling technique. Data was collected using a semi-structured interviewer-administered questionnaire, adapted from a validated tool. The Double-Bounded Dichotomous Choice Model variant of the contingent valuation method was used for eliciting the willingness to pay, with starting bid of 500 Naira per person per month. Data was analysed using STATA v10. Awareness of CHI was low at 23.1%. Half of the respondents (50.5%) who were aware of CHI knew the features. Willingness to join the CHI scheme among the respondents was 71.7%. The mean amount respondents were willing to pay per person per year was $\text{N}6265.31 \pm \text{N}4348.83$. Being unemployed (AOR=0.02; CI=0.00-0.912) and knowledge of the benefits of having a health insurance (AOR=24.68; CI=4.52-134.76) were significant predictors of the Willingness to pay. Increased community mobilization and health education intervention on Community Health Insurance should be designed and provided to the communities with emphasis on the role, operations and especially, the benefits of CHI.

Keywords: Community Health Insurance, Willingness to Pay, Universal Health Coverage, Premium, Ekiti State, Naira (Nigerian currency)

INTRODUCTION:

Universal Health Coverage (UHC) has in recent times been on the forefront of the global drive to ensure equity in health care, improved access to health services and financial protection to individual and families in the society. UHC means that all people receive the

health services they need, of appropriate quality, without exposing them to financial hardship, which includes avoiding out-of-pocket (OOP) payments that reduce the affordability of services [1,2]. One of its key features is that it includes prepayment and supports risk pooling, which ensures the spread of risk across time

and across individuals. The World Health Organization (WHO) has advised that risk-pooling mechanisms should be used for financing healthcare with the quest to achieve universal coverage, and such is the Community health insurance (CHI) scheme [3,4]. The WHO further reported that CHI schemes play an important role in addressing the issue of inadequate funding of the health system, as well as in UHC [3].

CHI schemes share common characteristics including: not-for-profit prepayment plans, community empowerment, and voluntary membership [5]. Such schemes are consequently becoming increasingly recognized as a viable instrument to finance health care in developing countries [4-6], where there are problems of poverty, poor resources and high burden of disease [7]. There has recently been increased interest in the development of CHI scheme in Low- and Middle-Income Countries (LMIC) such as Nigeria, due to the inequity, poor access to quality health care and financial burden brought about by the reliance on OOP payment option for health care. In sub-Saharan Africa, OOP payments constitute approximately 40% of total health expenditures, and thus imposing financial burdens and limiting access to care in some of the poorest countries around the globe [8,9].

Government allocation to health as a proportion of the annual national budget in Nigeria is still below the minimum of 15% agreed to by

African Heads of States and Government in the Abuja declaration of 2001 [10], making OOP spending the greatest source of health care financing. This scenario is similar in other developing economies [11-13]. The National Health Insurance Scheme (NHIS) was introduced in 2005 with the aim of ensuring that every Nigerian has access to good and affordable health care services and that medical cost are distributed equitably among different income groups [14]. Though planned to provide universal coverage to the population in 15-20 years [15], the scheme is yet to provide cover for individuals in the informal sector who form the majority [5] of the populace, and who predominantly live in the rural areas, where the standard of living as well as access to quality health care is poor [16].

Community health insurance has been found to reduce OOP payment thereby helping individuals and households avoid Catastrophic Health Expenditure (CHE) and poverty as a result of seeking health care [8,9,17]. According to the WHO, 150 million people suffer financial catastrophic shock each year in sub-Saharan Africa, and 100 million are pushed into poverty because of direct payments for health services [1]. The WHO 2001 Commission on Macroeconomics and Health recommended that OOP expenditures by poor communities should be redirected into community financing schemes [9] thus serving as an effective means to solving the financial problems of health care for the poor, protecting

poor people from the costs of health care, and leading to greater equity in health financing [18,19]. It has also been shown that there is an increase in utilization of health care services following the implementation of CHI, and subsequently, improvements in health outcomes [18]. Thus there have been drives towards scaling up CHI schemes in Nigeria [5,6,14]. An assessment of the demand or willingness to pay (WTP) for health insurance is very crucial prior to initiating the CHI schemes. Such assessment is important for ascertaining the feasibility, successful implementation and sustainability of community-based health insurance schemes. There are presently very few studies on willingness to pay for CHI in south western region of Nigeria. Findings from this research will provide vital information on health care financing at household level in rural areas in Ekiti State, thus guiding policy makers and stakeholders in formulating CHI policies and planning sustainable CHI scheme in Ekiti State.

The aim of this study was to assess the awareness and willingness to pay for community health insurance scheme and the factors associated with it among rural households in Ekiti State, Nigeria.

METHODOLOGY:

This cross-sectional study was carried out in selected rural settlements in Ekiti State, in the South-western part of Nigeria. Ekiti State has 16 Local Government Areas (LGAs) which are

administratively divided into wards [20]. Of the sixteen LGAs, four of them are predominantly urban, four are predominantly rural, and the remaining LGAs are semi-urban [21,22]. The total population of the State as at the time of this study, projected from the 2006 population Census at an annual growth rate of 2.9% was 3,540,321 [22]. Majority of the inhabitants are farmers and traders, especially in the rural areas.

A household is a group of persons who live together in the same dwelling unit and eat from the same pot, and acknowledge one adult member as the head of the household [16]. The household head is the person responsible for leadership and financial decisions. All household heads who are more than 18 years of age, who gave consent to participate in the study, and who had been resident within the State for a minimum of 12 months were included in the study. All subjects who were bedridden at the time of the study were excluded. The minimum sample size was calculated by the Leslie Fischer's formula [23], using a willingness to join value 69.3% [8]. After compensating for 20% non-response, the sample size was rounded up to 420. A multi-stage sampling technique was used to select respondents. During the first stage, LGAs were stratified as Rural, Urban, and Semi-urban LGAs. Two LGAs were selected from the rural group by simple random sampling. In the second stage, two communities were selected using simple random sampling from each LGA.

In the third stage, a sampling frame of all enumeration areas (EAs) in each selected community were drawn using Federal Office of Statistics listing of 2006. Five EAs were selected from each of the communities using simple random sampling by balloting method. In the fourth stage, the list of all the households in each selected EA were generated to produce a sampling frame, and the number of households needed in each EA were selected from the list by systematic random sampling. The household head was then identified and interviewed. Where the head of the household was not at home at the time of the visit, the spouse or another adult within the household was interviewed. If no adult was available, the interviewer moved on to the next household. Data was collected using a pre-tested, semi-structured interviewer-administered questionnaire. Six research assistants with a minimum basic Ordinary-level education qualification were recruited and trained for the study. They were supervised in the field by three qualified field supervisors. The questionnaire was adapted from a validated tool, the Community Health Plan – Kwara Central Survey 2009 Questionnaire [24]. Pre-test of the questionnaire was done on 10% of the subjects (that is, 40 respondents) in a rural community, which was thereafter excluded from the study. Appropriate corrections were made to the questionnaire after pre-testing. The questionnaire was reviewed by the Consultants in the Department of Community

Medicine, Federal Teaching Hospital (FETHI) Ido-Ekiti, to ensure face validity and content validity.

A CHI model, including the benefit package, was described for the respondents before determining their levels of WTP for the scheme. This served as the hypothetical Insurance market that was presented to the respondents. The Double-Bounded Dichotomous Choice Model (DBDC) variant of the contingent valuation method was used for eliciting the WTP. This was supported with open-ended follow-up questions for respondents who were not willing to pay the stated premium, thus enabling respondents to pick lower amounts (as low as zero) or higher amounts (higher than the stated options in the DBDC Method). The use of the DBDC variant helps to reduce response bias. The premium for this study was set on the starting bid of 500 Naira per person per month (6000.00 Naira per annum), based on an average WTP obtained in a study in Ekiti State in 2013, and after accounting for inflation [25]. The completed questionnaires were collated and checked for any errors in filling at the end of each field day. Data analysis was done using STATA, version 10 software packages. A p-value of <0.05 was taken as statistically significant. The exchange rate was taken at 1.0 USD to 397.00 Naira (Nigerian currency). Ethical clearance and approval for this study were obtained from the Ethics and Research Review Committee of the Federal Teaching Hospital, Ido-Ekiti. Written consent

was also obtained from each of the respondents.

RESULTS:

Four hundred and twenty (420) respondents were interviewed. Many of the respondents were in the age range of 30-39 years, 123 (29.3%). Mean age of respondents was 47.1 ± 16.2 years. The proportion of males was higher, 291 (69.3%). Most of the respondents were married, 395 (94.0%) and the prevalent marriage type was monogamous marriage, 308 (78%). Head of households accounted for 75% (315), of the respondents. Most of the households had averagely 5-6 members (38.3%); while the mean household size was 4.9 ± 1.9 . About 34% of the households had at least one child below 5 years of age. Also 84 (20.0%) had at least one elderly person over 65 years of age. Most of the respondents were educated, with a higher proportion having post-secondary education, and there were more people in the informal employment. Many of the respondents had average monthly income in the range ₦10000-19999 (Table 1).

Ninety-seven (23.1%) respondents were aware of CHI. More respondents who were aware of CHI heard about CHI mainly from the radio (40.2%), followed by from health workers (22.7%). Half of the respondents 49 (50.5%) who were aware of CHI knew the features of CHI. Sixty percent respondents had knowledge of benefits of having a health insurance. Only 10 (2.4%) of the respondents were presently on

Health Insurance. Willingness to join CHI among the respondents was high as 294 (71.7%) respondents were willing to join.

The mean number of household members that respondents were willing to enroll in the CHI scheme was 4.3 ± 1.9 . For respondents not willing to join the Insurance Scheme, the commonly cited reason was lack of interest (37.1%); followed by "I'm rarely ill" (15.5%), and "I don't trust insurance" (12.1%).

Table 3 shows the amount respondents were willing to pay per person per year for CHI. Mean Willingness to Pay per person per year was 6265.31 ± 4348.83 Naira. The least amount respondents were willing to pay was 50 Naira. Among the respondents who were willing to pay for CHI, 266 (90.5%) preferred to pay in cash, while 96 (32.7%) preferred to pay their insurance premium at their convenience.

None of the socio-demographic factors and household characteristics was found to be significantly associated with willingness to pay for CHI. Occupation, Knowledge of the features of CHI, Knowledge of the benefits of having a health insurance were however found to be significantly associated with WTP ($p = 0.004$, 0.001 , and <0.001 respectively) (Table 4). Factors significantly associated with WTP were included in the Logistics regression model. The results show that Occupation (AOR=0.02; CI=0.00-0.912) and Knowledge of the benefits of having a health insurance (AOR=24.68; CI=4.52-134.76) were significant predictors of Willingness to pay for CHI.

Table 1: Socio-economic and Household characteristics of Respondents

Characteristics	N = 420 (%)
Average household size:	
1 – 2	33 (7.9)
3 – 4	153 (36.4)
5 – 6	161 (38.3)
>6	73 (17.4)
Mean ± SD (standard deviation)	4.93 ± 1.96
Occupation:	
Unemployed	18 (4.3)
Informal employment	299 (71.2)
Formal employment	103 (24.5)
Educational status:	
No formal education	53 (12.6)
Primary	93 (22.1)
Secondary	149 (35.5)
Post-secondary	125 (29.8)
Average Monthly Income (Naira):	
No income	60 (14.3)
< 10,000	86 (20.5)
10,000 – 19,999	115 (27.4)
20,000 – 29,999	50 (11.9)
30,000 – 39,999	45 (10.7)
40,000 – 49,999	23 (5.5)
50,000 – 59,999	18 (4.2)
≥ 60,000	23 (5.5)

Table 2: Awareness of Community of Health Insurance (CHI), Household Current Insurance Status and Willingness to Join Community Health Insurance

Characteristics	N = 420 (%)
Awareness of CHI?	
Yes	97 (23.1)
No	323 (76.9)
Main Source of information*	
Friends and family	12 (12.3)
Television	20 (20.6)
Radio	39 (40.2)
Newspaper	3 (3.1)
Health worker	22 (22.8)
Others	1 (1.0)
Knowledge of the benefits of having a health insurance	
Yes	252 (60.0)
No	168 (40.0)

Benefits of Health insurance scheme identified¹	N = 252 (%)
Affordable	50 (19.8)
Accessible healthcare	128 (50.8)
Prevention from poverty	40 (15.9)
Installment payment	10 (4.0)
Mutual assistance	24 (9.5)
Presently on any form of health insurance	N = 420
Yes	10 (2.4)
No	410 (97.6)
Number of Household members presently covered by health insurance	N = 420 (%)
0	410 (97.6)
1-2	3 (0.7)
3-4	5 (1.2)
≥5	2 (0.5)
Mean ± SD.	3.60 ± 1.78
Willing to join CHIS*	N = 410 (%)
Yes	294 (71.7)
No	116 (28.3)
Number of people in household willing to enrol in CHIS	N = 294 (%)
1 – 2	46 (15.6)
3 – 4	117 (39.8)
≥ 5	131 (44.6)
Mean ± SD	4.38±1.96

*= only respondents who are aware of CHI

¹= only respondents who knows the benefit of having a health insurance

²= Respondents not already on Health Insurance

Table 3: Respondents' Willingness to Pay (WTP) per Person per Year for Community Health Insurance and Preferred Mode and Frequency of Payment

Characteristics	Rural
WTP (in Naira)	
Mean ± (SD)	6265.31 ± 4348.83
Willing to pay 500 Naira per person per month*	N = 294 (%)
Yes	165 (56.1)
No	129 (43.9)
Willing to pay 750 Naira per person per month**	N = 165 (%)
Yes	53 (32.1)
No	112 (67.9)
Willing to pay 250 Naira per person per month***	N = 129 (%)
Yes	87 (66.7)
No	43 (33.3)
Preferred mode of payment for insurance premium*	N = 294 (%)
Cash	266 (90.5)
Taxes	7 (2.4)
Cooperatives	6 (2.0)
Agric commodities	15 (5.1)
Preferred frequency of payment of insurance premium*	N = 294 (%)
Monthly	139 (47.3)

Quarterly	30 (10.1)
Annually	29 (9.9)
At convenience	96 (32.7)

N.B: * Only respondents who were willing to pay for CHI;

** Only respondents who were willing to pay 500 Naira

*** Only respondent who were not willing to pay 500 Naira

Table 4: Factors associated with Willingness to Pay (WTP) for Community Health Insurance (CHI)

Characteristics	WTP n = 294 (%)	Not WTP n = 116 (%)	Statistics, p value
Gender			$\chi^2 = 0.396; 0.529$
Male	201 (70.8)	83 (29.2)	
Female	93 (73.8)	33 (26.2)	
Marital status			$\chi^2 = 0.058; 0.809$
Never Married	17 (73.9)	6 (26.1)	
Married	277 (71.6)	110 (28.4)	
Average household size			$\chi^2 = 2.110; 0.550$
1 – 2	21 (70.0)	9 (30.0)	
3 – 4	104 (69.8)	45 (30.2)	
5 – 6	121 (75.6)	39 (24.4)	
>6	48 (67.6)	23 (32.4)	
Number of children <5years of age			$\chi^2 = 2.527; 0.470$
0	138 (70.4)	58 (29.6)	
1	104 (73.2)	38 (26.8)	
2	48 (75.0)	16 (25.0)	
>2	4 (50.0)	4 (50.0)	
Number of elderly > 65 years of age			$\chi^2 = 1.756; 0.416$
0	215 (73.4)	78 (26.6)	
1	58 (69.0)	26 (31.0)	
2+	21 (63.6)	12 (36.4)	
Marriage type	n = 277 (%)	n = 110 (%)	$\chi^2 = 0.480; 0.488$
Monogamous	218 (72.4)	83 (27.6)	
Polygamous	59 (68.6)	27 (31.4)	
Occupation			$\chi^2 = 10.815; 0.004$
Unemployed	11 (61.7)	7 (38.9)	
Informal employment	204 (68.2)	95 (31.8)	
Formal employment	79 (84.9)	14 (15.1)	
Educational status			$\chi^2 = 4.480; 0.214$
No formal education	33 (62.3)	20 (37.7)	
Primary	63 (67.7)	30 (32.3)	
Secondary	109 (74.7)	37 (25.3)	
Post-secondary	89 (75.4)	29 (24.6)	
Income			$\chi^2 = 11.953; 0.102$
No income	35 (58.3)	25 (41.7)	
< 10,000	60 (69.8)	26 (30.2)	
10,000 – 19,999	82 (71.3)	33 (28.7)	
20,000 – 29,999	35 (72.9)	13 (27.1)	
30,000 – 39,999	36 (85.7)	6 (14.3)	
40,000 – 49,999	19 (82.6)	4 (17.4)	
50,000 – 59,999	14 (82.4)	3 (17.6)	
≥60,000	13 (68.4)	6 (31.6)	

DISCUSSION:

Awareness of CHI in this study was found to be low; despite the presence of CHI scheme in two communities in the state. Only a little above one-fifth of the respondents were aware of CHI. The general low level of awareness could translate into poor interest in enrolment and less demand for CHI [26,27]. Previous studies showed awareness rate of 37.8% and 25.6% reported in rural communities in North central Nigeria [27], and Cameroon [26] respectively. Low awareness levels underlie the need for increased media campaign on CHI and for more work to be done in educating the communities, especially in sub-Saharan Africa. More respondents who were aware of CHI heard about CHI from the radio, and from health workers. This compares with previous studies where the mass media and health workers were also most commonly mentioned as sources of information about CHI [26-28]. These findings highlight the vital role health workers have to play in community mobilization and increasing households' awareness of CHI. About 60% of the respondents could identify a potential benefit of CHI. The respondents identified CHI with increased access to healthcare, and affordable healthcare, which are important components of UHC [2]. This implies that with appropriate sensitization, households in Ekiti State will not only understand the concept and benefits of CHI,

they can be effectively mobilized towards accepting, and enrolling in CHI schemes.

Willingness to join CHI was high, as 71.7% of the respondents were willing to join CHI. Though this study reported a low level of awareness of CHI, the high willingness to join reported may be due to the respondents' perceived benefits of having an insurance cover as almost two-thirds of the respondents perceived that having a health insurance was beneficial, and not necessarily because they have a good understanding of the health insurance process. This finding compares with studies in rural Ecuador and Ethiopia [8,13,29]. The result of WTJ from this study is higher than the WTJ reported in a study in India in which 11.9% of the respondents were ready to buy health insurance without any conditions and 19.8% were willing to buy only if certain conditions are fulfilled [28]. The higher WTP in this study could be because of the prevailing economic situation in the country as at the time of this study, with the communities recognizing CHI as a way to affordable health care.

It was also found in this study that the mean number of family members that the households were willing to enrol in CHI schemes was 4.3 ± 1.9 . This number is 87.7% of the average family size of the rural households. The implication of this is that some of the household heads were not willing to enrol their entire household members in CHI scheme. This was however higher than the findings reported by

Le-May Boucher in a study in Senegal [30]. Moreover, we found that in households which were presently on Health Insurance (NHIS), averagely 3.6 ± 1.7 household members were enrolled in the Scheme. Household heads deciding not to enrol all the members of their families may be because of the financial implications of enrolment, and may also be because of the extended family nature of many of the families in Nigeria, in which not every member of the household are actually members of the nuclear family; this being especially true in the rural areas.

For respondents not willing to join the Insurance Scheme, it was found that the commonly cited reason was lack of interest and "I'm rarely ill". In a similar study on WTP for social health insurance among teachers in south Ethiopia, it was found that for those not willing to join the scheme, the two most commonly stated reasons were fear of poor implementation and that the scheme might not cover all needed services [13]. The lack of interest and lack of trust in the scheme may be due to poor awareness and understanding of community health insurance scheme earlier reported in this study. This underlies the need for more health education of the populace on the role, benefits and mode of operation of CHI schemes.

This study found that the mean Willingness to Pay per person per year was $\text{N}6265.31 \pm \text{N}4348.83$. This was the affordable price at which the households were willing to convert

their out-of-pocket health expenditures into pre-paid health expenditure. The mean annual WTP in this study was higher than the mean WTP for urban ($\text{N}1,798.90\text{k} \pm 134.7$ per person per year) and rural households ($\text{N}721.70\text{k} \pm 250.5$ per person per year) in a study in Osun State [12], as well as in rural ($\text{N}3,000$ per person per year), and urban ($\text{N}4,116$ per person per year) households in Anambra and Enugu State, Nigeria [31]. These differences could be due to the difference in time of elicitation of the WTP in these other studies, as inflation would have occurred over the years.

Majority of the respondents who were willing to pay for CHI preferred to pay in cash. This finding is unlike that reported in a study in south western Nigeria in which it was found that rural households preferred to pay in kinds, while urban households preferred the use of cash [32]. The use of cash may be seen by many of our respondents to be more convenient, and less prone to abuse. This study also found that less than half of the respondents who were willing to pay for CHI preferred to pay their insurance premium on a regular monthly basis, while about one-third preferred to pay their insurance premium at their convenience. This compares with a study in Malawi where 85.6% of the respondents preferred to pay on a monthly basis [33]. This finding may be due to the inconsistent nature of income for individuals and households in the

informal sector, to which many of our respondents belong.

This study found out that factors significantly associated with WTP included occupation, knowledge of the features of CHI and knowledge of the benefits of having a health insurance. Occupation and Knowledge of the benefits of having a health insurance were significant predictors of Willingness to pay. The unemployed were 98% less likely to be willing to pay for CHI than those who were in the formal employment. Also, those who knew the benefits of having a health insurance were 24 times more likely to be willing to pay for CHI than those who did not know the benefits. This finding may be because the employed have a regular source of income, thus would be able to afford insurance and pay premium without default. Also, knowledge of benefit of having a health insurance could imply willingness to appropriate such benefits by being willing to pay for CHI. The implication of this is that Health education intervention be targeted at the unemployed, with emphasis on the benefits of having a health insurance.

CONCLUSION:

The awareness of CHI was low in this study, and the mass media was the main source of information, however there was high willingness to join CHI, showing that CHI is feasible in Ekiti State. The mean Willingness to Pay per person per year was found to be 6265.31 ± 4348.83 Naira. Occupation and

Knowledge of the benefits of having a health insurance were significant predictors of Willingness to pay. We therefore recommend increased community mobilization and awareness about CHI in the State through the mass media and the health workforce, with health education intervention on CHI designed and provided to the communities with emphasis on the role, operations and especially benefits of CHI.

The policies of CHI in the State should be made to focus on the unemployed, and those in the informal sectors in the rural area, while strengthening the communities and providing technical support towards forming sustainable CHI schemes. We also recommend further research, especially qualitative study to assess the reasons for the lack of interest in CHI or fear of failure/poor implementation of CHI as expressed by respondents in this study.

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COMPETING INTEREST:

The authors declare that they have no competing interests.

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