COMMUNITY BASED HEALTH INSURANCE KNOWLEDGE AND WILLINGNESS TO PAY; A SURVEY OF A RURAL COMMUNITY IN NORTH CENTRAL ZONE OF NIGERIA.

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ABSTRACT

Introduction
A Community-Based Health Insurance Scheme (CBHI) is any program managed and operated by a community-based organization that provides resource pooling and risk-sharing to cover the costs of health care services. CBHI reduces out of pocket expenditure and is the most appropriate insurance model for rural areas where incomes are unstable. The recent "health care crisis" has led to the emergence of many CBHI in developing countries of sub-Saharan Africa. This study aimed to explore the knowledge of and Willingness to pay for CBHI in a rural community in Plateau State.

Methods: *Using multi-stage sampling technique, 450 adult subjects were recruited for the study. Data was gotten from them using an interviewer administered structured questionnaire and was analyzed using EPI-info statistical software version 3.5.2. Chi-square test was used to show relationship between demographic features and outcome variables.*

Results: *Seventy one percent of respondents had a good knowledge of CBHI was l (28.7%) with the mass media being their main source of information (53.3%). About 91.5% of subjects are not members of any health scheme while 93.6% percent were willing to pay into a CBHI scheme. Thrift collection was the preferred method of financing the social insurance scheme in the community. Knowledge on CBHI and Willingness to pay was higher in more educated, single subjects.*

Conclusion: *Knowledge of CBHI was low among the studied populace although the willingness to pay was encouragingly high. This willingness needs to be promptly harnessed by Community leaders and health workers to improve access to Health Care by the vulnerable rural populace.*

Keywords*: Community-Based, Health, Insurance, Willingness-To-Pay.*

Introduction

A Community-Based Health Insurance Scheme (CBHIs) is any program managed and operated by a community-based organization, other than government or a private for-profit company , that provides resource-pooling to cover the costs (or some part thereof) of health care services. Beneficiaries are associated with, or involved in the management of community-based schemes, or at least in the choice of the health care services it covers. A CBHI scheme is voluntary in nature, formed on the basis of an ethnic or mutual aid, and covers a variety of benefit packages. [1]

The term 'Community-based Health Insurance' (CHI) describes not-for-profit pre-payment plans for health care, with community control and voluntary membership that provide resource pooling to low-income populations: these non-profit (mutual) insurance plans are *'managed and operated by an organization to cover all or part of the costs of health care services'*. [2] The health financing function of the scheme is all about ensuring that sufficient financial resources are made available (stored in advance) so that people can access effective health care.[3]

Health security is increasingly being recognized as integral to any poverty reduction strategy. While the

objective of poverty reduction remains of central concern, there has been, in recent times, a shift of focus away from poverty reduction per se to social risk management. [4] This is one of the cardinal functions of a health Insurance scheme. Health financing systems, including CBHIs, cannot be looked at in a vacuum, but need to be connected to the final goals of the health system as a whole.

The World Health Organization (WHO) has considered the following as vital goals and health indicators to assess any health system: health status of the populace and health equality, responsiveness of the health system to people's non-medical expectations and fairness in financial contribution.[5] Financial contributions for health are considered as fair when health expenditure of households is distributed according to ability to pay rather than to actual costs incurred as a consequence of illness. In rural settings, with seasonal incomes, the ability to pay for health needs becomes increasingly difficult after the yearly harvests have been eaten or sold to meet domestic needs.

Most developing countries are unable to fulfill the health care needs of their poor population due to the shrinking budgetary support of the health sector and the unacceptable low quality of public health services. In the last decade, the "health care crisis" has therefore led to the emergence of many CBHIs in different regions of developing countries, particularly in sub-Saharan Africa.[6] These schemes are aimed at pooling material and financial resources together, to use as payment for health care services in times of ill-health.

In Nigeria, it is interesting to note that the Nigerian National Health Insurance Scheme (NHIS) currently covers only federal government public servants and does not provide health insurance cover for the majority of the Nigerian population who are in the informal sector. There is therefore an increase in out of pocket spending on health needs and a paucity of insurance mechanisms to manage risks, and this forms a major challenge to health care financing in Nigeria. [7] However, the government intends to expand the NHIS in the near future so as to cover people employed in the informal sector, using CBHI schemes.

CBHI reduces out of pocket expenditure and improves cost recovery and although its effect on the quality of health care and efficiency of health services are unclear, it appears to be the most appropriate insurance model for the informal sector and rural areas where incomes are unstable. [8] Some other benefits of CBHI include- possibilities for community-based health promotion and disease prevention; strengthening of the primary healthcare system; public-private partnerships in healthcare provision; data collection for the proposed state social security system; effective targeting of existing state subsidies for health; promotion of enterprise in communities; and the reduction of poverty in the population.[8]

Studies however, have shown that only a small proportion of the nation's population are aware of CBHI and the few schemes available are therefore under-utilized as even fewer are willing to pay or contribute to the scheme.[7] A study done in Burkina Faso in 2005 showed that the willingness to pay was dependent on the socio-economic status of the studied subjects.[9] Another study done in the eastern part of Nigeria in 2009, showed that the willingness to pay was higher in the urban areas than in the rural areas, and also related it to the socioeconomic status of respondents.[10] This study therefore assesses the knowledge of CBHI in a selected rural community in Plateau State as well as determines the respondents' willingness to pay for the scheme if introduced in their locality.

Methodology

The study was conducted in Kwergoro community of Mangu LGA of Plateau State. The rural community with an estimated population of 10,000, is located about 80kilometers south of Jos Municipal city, the Plateau State capital, in the North-Central zone of Nigeria. Farming (small scale farming of food crops like maize, yams, rice and beans), trading (petty trading in food-stuff, provisions, clothing and business center operators), civil service and students form their major occupations. Most of the populace is of the low and middle socio-economic class and the literacy level is expected to be like that of rural settings in Plateau State, which is lower than the national average. The institutions in the area include a state owned College of Education and two privately owned primary/nursery schools. The College of Education has a staff clinic located in its premises while there is one government owned PHC and several privately owned chemists which offer health care services to the populace.

The studied population consisted of adult subjects aged 18 years and above, residing in Kwergoro community at the time of the cross-sectional study which took place between 5th and 18th of December, 2011.

A minimum sample size of 384 adults was determined using the formula;

$$N = \frac{Z^2 PQ}{d^2}$$

Where N = minimum sample size
Z = Standard deviation score at 95% = 1.96
P = Prevalence of Knowledge on the subject was assumed to be 50%
Q = Complimentary Probability (1- P) = 1 0.5 = 0.5
d = Error Margin = 5%
A multistage sampling technique was used to select study subjects;

Stage 1: Mangu LGA was selected from a sampling frame made of the list of the 17 LGA in Plateau State, by simple random sampling by balloting.

Stage 2: Gindiri I ward was selected from a list of the 20 political wards in Mangu LGA using Simple random sampling by balloting.

Stage 3: Kwergoro community was selected from a list of the 6 communities in Gindiri I ward using simple random sampling by balloting.

Stage 4: All the households in the community were visited and all subjects aged 18 years and above who consented to the study were sampled.

A structured interviewer administered questionnaire was used to gather information from the study subjects in English (or translated into Hausa for uneducated respondents) regarding their socio-demographics, their knowledge of health insurance and their perception of need for health insurance in the community. All data generated was processed using EPI info statistical software, version 3.4.3(2007). Quantitative data were presented using, mean and standard deviation while Chi-square was used to test for relationship between socio-demographics and anthropometric and outcome variables.

The study was part of a Community Diagnosis survey conducted by Medical Students on posting in the department of Community Medicine, Faculty of Medical Sciences, University of Jos. Written permission for the survey was sought from The Chairman of the LGA, Traditional ruler of the Ward (Sum Pyem) and advocacy visits were paid to the village head of Kwergoro, intimating his cooperation and help in mobilizing the community for the survey. Verbal informed consent was gotten from each subject before being recruited into the study.

Results

A total of 450 respondents were studied with majority being within the age group 18-29 years (79.7%) and the least in the age group 50 years and above (2.75%). A slightly higher female population was observed and majority of respondents had attained the tertiary level of education (59.7%). The population was more of students (78.6%) most of them being single (70.5%).

Table I: Demographic characteristics of the respondents

Age (years)	Frequency (N=450)	Percentage
18 - 29	346	79.7
30 - 39	56	10.9
40 - 49	20	3.9
50 - 59	14	2.7
>60	14	2.7
Sex		
Female	231	51.9
Male	219	48.1
Level of education		
Non	26	5.1
Koranic	9	1.8
Primary	18	3.5
Secondary	152	29.9
Tertiary	245	59.7
Marital Status		
Single	302	70.5
Married	136	27.1
Divorced	2	0.4
Widowed	10	2.0
Occupation		
Civil Servant	20	3.9
Farmer	21	4.1
Student	341	78.6
Unemployed	10	2.0
Trader	32	6.3
*Others	26	5.1

**Masons, drivers, welders.*

Respondents who had attained tertiary level of education had the best knowledge of community insurance (57.0 %) while those with Koranic education had the least proportion of respondents with a good knowledge of CBHI (1.9%): There was however no statistically significant relationship between educational status and knowledge on community-based health insurance (p = 0.498).

Table II: Relationship between educational status and knowledge of CBHI

Level of education	Knowledge of CBHI			
	Good		Poor	
	Freq	%	Freq	%
None	18	5.6	8	6.2
Koranic	6	1.9	3	2.3
Primary	11	37.7	7	5.4
Secondary	103	32.1	49	38.0
Tertiary	183	57.0	62	48.1
Total	**321**	**100**	**129**	**100**

$X^2 = 3.372$; $df = 4$; $P = 0.498$

There was a statistically significant relationship between age of respondents and Willingness to Pay into a CBHI, with Fisher's exact of 0.0197. While all the respondents aged 40 49 were willing to pay, 28.6% of those aged above 60 years of age were willing to pay.

Table III: Relationship between Age and Willingness to Pay into a CBHI scheme.

Age (years)	Willingness to Pay			
	No		Yes	
	Freq	%	Freq	%
18 - 29	20	5.8	326	94.2
30 - 39	3	5.4	53	94.6
40 - 49	0	0	20	100.0
50 - 59	2	14.3	12	85.7
>60	4	28.6	10	71.4
Total	**29**		**421**	

Finisher's exact = 0.0197

Indication of respondents' willingness to join the insurance scheme was highest (55.1%) among those with tertiary level of education. There was also a statistically significant relationship between level of education and willingness to pay for health services through a CBHI, should one be started in the community.

Table IV: Relationship between education and willingness to pay into a CBHI

Level of education	Willingness to Pay into a CBHI			
	No		Yes	
	Freq	%	Freq	%
None	5	7.2	21	5.0
Koranic	1	3.4	8	1.9
Primary	3	10.3	15	3.6
Secondary	7	24.1	145	34.4
Tertiary	13	44.8	232	55.1
Total	**29**	**100**	**421**	**100**

$X^2 = 11.894; df = 4; P = 0.018$

Although majority of the respondents (93.6%) were willing to pay into a CBHI scheme, 90% of the widowed population were not. Most of the single respondents (98.7%) were however willing to pay into a CBHI scheme. There was a statistically significant association between marital status and Willingness to pay into a CBHI scheme.

Table V: relationship between Marital Status and Willingness to pay a CBHI Scheme.

Marital Status	Willingness to Pay			
	No		Yes	
	Freq	%	Freq	%
Divorced	1	50.0	1	50.0
Married	15	11.0	121	89.0
Single	4	1.3	298	98.7
Widowed	9	90.0	1	10.0
Total	**29**	**100**	**421**	**100**

$X^2 = 139.962; df = 3; p < 0.01$

More respondents perceived periodic thrift collection as the appropriate method of pooling resources for a CBHI while majority (54%) of respondents viewed the funding of drug supply as the most important health care need in the community which would require CBHI scheme to meet.

Table VI: Suggestions for a CBHI in the Community

Proposed method of gathering finances	**Frequency (N = 450)**	**%**
Fund raising	94	20.9
Farming	51	11.3
Group sales of goods	99	22.0
Thrift Collection	150	33.3
*Others	56	12.4
Aspect of health care requiring funding	**Frequency (N = 450)**	**%**
Clinic	115	25.6
Deliveries	26	5.8
Drugs	243	54.0
Surgery	48	10.7
*Others	18	4.0

Combinations of 2 or 3 of the above.

Discussion

A study carried out among district health officers and senior staff of the ministry of health in Uganda, showed a poor knowledge and understanding of CBHI, even among studied health workers.[12] Many low income clients have also been found to be unfamiliar with the concept of health insurance and they have a hard time distinguishing credit from insurance.[1] This is despite the fact that due to their low socio-economic status, they need it more and are more likely to frequently use it, than high income earners.[11]. The findings of this study showed good knowledge of CBHI of a majority of the studied population (71%) which can be attributed to the proportion of students among the studied population.

Basaza et al conducted a case evaluation of a CBHI in Uganda 10years after its promotion: the results showed a poor comprehension of the notion of community health insurance by health workers, administrators and health planners. The majority of non-scheme members interviewed was aware of the existence of the CBHI schemes and had received information and knowledge about the scheme from existing members. Other sources included ward posters and word-of-mouth from scheme staff.[13] In this study however, the mass media was the main source of information on CBHI.

A general lack of understanding about health care insurance influences the nature of the benefit package. Rural populations vary depending on the type of health risks they face; although their disease patterns may not be much different from that of urban dwellers, they are more vulnerable to the diseases because of their lower socio- economic situations. This makes it more important for there to be a health security mechanism available to them.[4] Health insurance is one such instrument which has been widely used as an effective social security mechanism, although the insurance mechanism for low-income families especially in the rural population remains at a very nascent stage in developing countries like Nigeria and India.[11] CBHI is perceived as a relevant policy option and potential source of funds for health care. It is also considered a means of raising the quality of health care in both public and private health units. Respondents in this study perceived their greatest health need to be availability and cost of drugs and medication.

Ninety-four percent of respondents were willing to pay into a community-based insurance scheme if it is made available. In a study in Karnataka state India, most of the people stated their willing to pay

for the proposed rural health insurance scheme. However, the probability of willingness to join was found to be greater than the probability of willingness to pay.[14] This may not necessarily be because of the lack of the desire to pay but more because of the inability to pay due to their poor socio-economic statuses. This was demonstrated in the preferred method of funds collection through thrift collection by subjects of this study (Table VI); since their finances come in small amounts over varying (crop harvest or trade) seasons in the form of profit from sales in most cases.

Studies have shown that there is a significant association between increasing age and willingness to pay for health insurance both in rural and urban communities[15,16,17]. These studies had similar results with that got in this study with an increase in willingness to pay as the age group increases with the age group of 40-49 years having the highest willingness of one hundred% and then a steady decline up to the in the over 60 years age group (Table II). Explanations to this propose that with increase in age, there is a growing sense of risks involved in life and increase in awareness about morbidity factors, while those above 70years of age find it harder to accept new policies and initiatives easily.[17]

Education and willingness to pay in this study was statistically significant with fifty five percent of those with a tertiary education willing to pay in to a CBHI scheme (Table VI) which is similar to the result found in a study in a rural community in Vietnam.[16] It was suggested in a study in Ontario Canada that the knowledge about the benefits of mortality risk reductions could actually affect people's perception and acceptance of initiatives like health insurance and this is mostly seen in people with higher education and relatively higher socio-economic statuses.[17]

Recent research has shown that there is a strong association between marital status and willingness to pay; with an increased likelihood of willingness to pay for health insurance among married people.[18] This is however contrary to the results found in this study where willingness to pay was more in single people (Table V): Some other studies however found no statistically significant association between marital status and willingness to pay[15]. Some of the studies attributed the increase in willingness to pay among married couples to the perception that women have a higher degree of risk aversion which in turn influences the whole family's propensity to insure its health.[16,18]

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