ORIGINAL ARTICLE

WILLINGNESS TO ENROLL FOR COMMUNITY-BASED HEALTH INSURANCE AND ASSOCIATED FACTORS AMONGHOUSEHOLD HEADS IN THE RURAL COMMUNITY OF FOGERA DISTRICT, NORTH WEST ETHIOPIA

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ABSTRACT

Introduction: *Globally, 150 million people suffered from financial catastrophic shock each year, and 100 million are pushed into poverty because of direct payments for health services. Community-based health insurance schemes are becoming increasingly recognized as a tool to finance health care in developing countries; however, it is still early stage of implementation in Ethiopia. Therefore, this study was conducted to assess the willingness to enroll for community-based health insurance and associated factors among household heads in the rural community of Fogera district, North West Ethiopia.*

Methods: *A community-based cross-sectional study was conducted among 528 households in 2014. A multistage sampling was used to select the study participants. Pre-tested structured interviewer-administered questionnaire was used to collect the data. The data were analysed using SPSS computer software package version 20.A multivariable logistic regression analysis was used to investigate factors associated with willingness to enroll for community-based health insurance. Adjusted Odds Ratios (AOR) with the corresponding 95% Confidence Interval (CI) was used to show the strength of associations, and variables with P-values of <0.05 were considered statistically significant.*

Result: *The finding revealed the 80%, 95%CI:(75.7%-83.7%) of respondents expressed willingness to enroll in the Community-based health insurance system. The main reason for those who were not willing to enroll in the scheme was that they preferred out of pocket payment to the scheme. According to the multivariable logistic regression analysis, advanced age (>45 years) [AOR: 0.52, 95%CI (0.31, 0.89)], schooling experience [AOR: 2.14, 95%CI (1.187, 3.86)]and having two and above under-5years children [AOR: 2.22, 95%CI (1.06, 4.86)] were significantly associated with community based health insurance enrollment.*

Conclusion and recommendation: *The willingness to enroll for the Community-based health insurance scheme was encouraging to achieving universal health coverage through financial risk protection. Hence, mobilizing and educating the community about the drawback of out of pocket payment and specify the number of premiums for community-based health insurance based on household size should be continued.*

Keywords: *Willingness, Health Insurance, Household heads, Fogera district.*

BACKGROUND

Community-based health insurance (CBHI) schemes are becoming increasingly recognized as an instrument to finance health care in developing countries (1) with certain weaknesses such as low capital start up a base, small size of the risk pool, lower level of revenue mobilization, limited management capacity, and isolation from more complete benefits(2).CBHI schemes have the potential to provide financial protection for underserved segments of the population by minimizing the equity gap and reducing out-of-pocket spending, increasing awareness regarding the value of insurance, building self-belief among participants through community control mechanisms, and enhancing utilization of the health care system, and increasing prepayment from the informal sector and mobilizing more resources for health care (3).

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Most people live in resource-poor settings like Sub-Saharan Africa (SSA) are suffering from financial catastrophic shock (4). In sub-Saharan Africa, out-of-pocket expenditures still constitute approximately 40 percent of total health expenditures, imposing financial burdens and limiting access to care in some of the poorest countries around the globe (5).

The catastrophic nature of health care financing mechanism for the poor and the rural population has been a source of concern in the countries of Africa (6).According to WHO, 150 million people globally suffer financial catastrophic shock each year, and 100 million are pushed into poverty because of direct payments for health services (7).

In Africa, the first community-based schemes emerged with the inauguration of the Mutuelle Pharmaceutique de la Sainte Famille Tounouma in Burkina Faso in 1986. Over time, different models developed: first in West and Central Africa, followed later by East Africa , which is still in its early stages (7).In Ethiopia, CBHI has been implemented in 13 districts on a pilot basis since 2011, which were selected from Amhara, Oromiya, SNNP and Tigray regions covering 1.45 million People (8).

Health insurance is mainly financed by the contributions/premium regularly collected from its members. Financial contributions for health are considered as fair when health expenditure of households is distributed according to the ability to pay rather than the actual cost incurred as a consequence of illness(9, 10).Dror DM and colleague's meta-analysis indicated that household income, education and age of the household head (HHH), household size, female-headed household, married HHH and chronic illness episodes in the household were positively associated

with CBHI schemes in low- and middle-income countries (LMIC), and knowledge and understanding of insurance and CBHI, quality of healthcare, and trust in scheme management were factors as enablers for enrolment(11).

Even though community-based health insurance is considered as an effective way to reach the poor people to access adequate health care services in the country, there is limited evidence on the willingness to enroll to CBHI and factors associated it. Therefore, the objective of this study was to assess the willingness to enroll to CBHI and associated factors in Fogera district, Northwest Ethiopia.

METHODS

The study was carried out in the rural community of Fogera District from June to November 2014.The town of the Fogera district is located 15 km away from Bahir Dar, the capital city of Amhara National Regional State, and 580 km from Addis Ababa, the capital city of Ethiopia. It is bordered by Lake Tana. It has 28 rural Kebeles (the lowest administrative units in the country) with 220,000 people, and 09health centers. Fogera district is one of the three pilot areas of CBHI in Amhara National Regional State. The scheme was started in June 2011.

The study utilized community-based cross-sectional study design with quantitative data collection method. The study population included all households in the rural community of Fogera Districts. Respondents who were working in the formal organization in the rural community were excluded from the study.

The sample size was determined using single population proportion formula with the following assump-

tions: proportion 94%, which was obtained from Ethiopian National Health Insurance Survey (2005), 3% margin of error, 95% confidence level, 10% non-response rate and a design effect of two. Finally, a total sample size of 528 was obtained.

The sample was obtained using multi-stage sampling technique. During the first stage, Six Kebeles were randomly selected by simple random sampling out of 28 rural Kebeles of the District.In the second stage, 528 households were selected by using systematic random sampling. A "Kebele" is the smallest governmental administrative unit, and on average has a population of 5000 people and in each 'got' has 75 -125 household heads.

The dependent variable was willingness to enroll for the CBHI while the following factors were included in the model as independent variables: socio-demographic variables (age, sex, marital status, family size, number of children), socioeconomic variables: (income, wealth, occupation, level of education), health and health-related factors, and knowledge about benefit of CBHI scheme.

The questionnaire was prepared by reviewing the relevant literature. The pre-test was done on 10% of the subjects at Addis Zemen Rural District. Data were collected by pre-tested, pre-coded and interviewer-administered questionnaire.The collected data were cleaned, coded, entered into EPI-INFO version 3.5.1 software, and transferred and analysed using SPSS computer software package version 20. Summary statistics of socio-demographic variables were presented using frequency tables and graphs.

The wealth status of the households was computed by Principal Component Analysis (PCA).It was analyzed from 17 variables. Those are presence of own farm land, bank account, mobile phone, electricity, television, radio, landline telephone, refrigerator, roof of house corrugated iron sheet, wood for cooking, mud with wood wall of a house, natural floor, and a number of cows/oxen, horses/mules/donkeys, goats/sheep, chicken and the amount of household income. The wealth status was categorized into three groups and ranked poor, middle and rich.Bivariate analysis was done and variables with a p-value less than 0.2 were included in the multiple logistic regression analysis. Odds ratio and 95% confidence intervals were also computed along with the corresponding p-value less than 0.05.

Ethical clearance was obtained from the Ethical Review Board of the University of Gondar. The purpose and importance of the study were explained and oral consent was obtained from each participant. Moreover, confidentiality of the information was assured by using anonymous questionnaires and by keeping the data in a secured place.

RESULTS

A total of 528 household heads participated in the study with100% response rate. The majority of respondents were male (78.2%). One hundred fifty-eight (30%) and 152 (29%) of the respondents were in the age group of 30-39 years and 40-49 years, respectively. The mean age of respondents was 45 ± 12 years. Most (95.8%) of the respondents were orthodox Christian, 82% weremarried and 71.6%had children aged under five years. The mean family size of the respondents was 5 ± 1.8(Table 1).

Table1: Demographic characteristics of the respondents, Fogera Districts, 2013 (n=528)

Characteristics	Frequency	Percent (%)
Sex of the household head		
Male	414	78.4
Female	114	21.6
Age (years)		
20-29	50	9.5
30-39	157	29.7
40-49	150	28.4
50-59	96	18.2
> 60	75	14.4
Religion		
Orthodox	506	95.8
Muslim	15	2.9
Adventist 7 day	7	1.3
Marital status		
Single	20	3.8
Married	433	82
Divorced	40	7.6
Widowed	35	6.6
Household size		
Less than or equal to 5	328	62.7
Greater than 5	200	37.3
Household having children <5 years old (n=378)		
One child	234	61.9
Two or more children	144	38.1
Household having a person above 65 years old age (n=39)		
One person	31	79.5
Two or more person	8	20.5

Three hundred three (57.4%) of the respondents were unable to read and write and only 2.8% of the study subjects accomplished secondary education and above. The average year of schooling of the respondents was 1.55. With regard to the occupation, 491 (93%) of the respondents were farmers, 4.5% petty trader and the others were merchants and daily laborer. The average income of the household per year was 16,129 Birr. Only 92 (17.4%) households had a bank account. Thirty-three percent of the respondents were categorized as poor wealth status.

Health and health-related characteristics of respondents

Regarding the health status of the household, 71 (13.4%) of the member of the household had a chronic illness while 152 (29.2%) had any type of acute illness during the last one year. The average illness episodes were 2.09. The medical expense was difficult for 38% of the household heads to payfor a family member who encountered illness. The majority of the respondent got money to cover medical expenses by selling a capital asset.

Respondents' knowledge on community-based health insurance

Three hundred thirty-eight (64%) of the respondents have heard about CBHI,97 (29%) of respondents got information from health extension workers, and only 1% through mass media. Among the study participants, 328(62.1%)had good knowledge about the benefits of CBHI.

Community-based health insurance status

Among 528 households, 408 (77.3%) were not insured, 112 (21.2%) insured and the remaining 8 (1.5%) insured but not renewed. Eighty percent of the respondents (not insured and insured but not renewed) were willing to enroll in CBHI schemes. The respondents' reasons for not willing to enroll in the scheme were being out a pocket payment is better than health insurance (42%), they cannot afford to pay(29.8%), poor quality of health services(13%), and others (7.2%). Seventy-six percent of the insured respondents perceived that the regular premium of CBHI schemes is affordable.

Factor Affecting Willingness to Enroll in the Community Based Health Insurance Schemes

Demographic and Socio-economic variables like sex, age, marital status, years of schooling, number of under 5 years children in the household, religion, wealth status and household size were entered into the model for multivariate analysis. The study revealed that vari-

ables such as age, years of schooling, and number of under5 years children in the household were significantly associated with CBHI enrollment. Respondents whose age was above the mean (45 years) were 48% times less likely to join schemes than below (AOR: 0.52, 95%CI (0.31, 0.89)). Respondents who had schooling experience were 2.14 times more likely to enroll in CBHI scheme compared to the respondents with no schooling experience (AOR: 2.14, 95%CI (1.18, 3.86)). Households with two or more children were 2.22 times more likely to join CBHI scheme than households with less than two children in the households (AOR: 2.22, 95%CI (1.06, 4.86)) (Table 2).

Table2: Factors associated with willingness of the community to enroll in CBHI schemes, Fogera districts, 2013

Variables	Willingness to enroll		COR (95%CI)	AOR (95%CI)
	YES	NO		
Sex				
Male	263	61	1.437(0.831,2.46)	0.748(0.343,1.63)
Female	69	23	1	1
Age				
Above 45 years	122	45	0.503(0.311,0.816)	**0.528(0.312,0.892)***
45 years and below	210	39	1	1
Marital status				
Married	274	63	0.311(0.40,2.406)	0.285(0.035,2.355)
Divorced/widowed	44	20	0.157(0.019,1.27)	0.201(0.023,1.784)
Single	14	1	1	1
Years Schooling				
One year and above	127	19	2.119(1.214,3.699)	**2.143(1.187,3.869)***
Non schooling	205	65	1	1
Household size				
>5 HH member	211	41	1.829(1.129,2.964)	0.641(0.361,1.138)
≤ 5 HH member	121	43	1	1
Number of children under-5 years in HH				
Two & above	100	10	3.19(1.583,6.428)	**2.227(1.066,4.866)***
Less than	232	74	1	1
Religion				
Orthodox	325	78	3.57(1.168,10.925)	3.035(0.93,9.899)
Muslim /Adventist	7	6	1	1
Wealth				
Middle	121	24	1.733(0.961,3.127)	1.592(0.848,2.986)
Rich	115	27	1.464(0.823,2.605)	1.478(0.778,2.808)
Poor	96	33	1	1

*p<0.05 HH (house hold)

DISCUSSION

This study revealed that majority (80%) of respondents was willing to enroll. Predictor variables like age of the respondents, educational level, and household size were factors identified to be significantly associated with willingness to enroll to CBHI scheme. The proportion of respondents willing to enroll in this study finding was higher than study in Endo state Nigeria (6), Malaysia (12), Vietnam (13) and Nigeria national survey (14). In contrary, this finding is lower than 2005 national survey in Ethiopia (15). It could be justified in differences in study setting and study time.

The demographic status of the respondent showed that the majority (78%) household heads were males. This indicated that most dominant financial decision-makers in the household are male, which is similar to findings from most developing counties(16).

The result of the study revealed that respondents with age above 45 years were less likely to enroll in the CBHI scheme than respondents aged below 45 years. This may indicate that human capital investment in health at older ages yields to a lesser degree and lesser compared to the younger. This finding is consistent with studies done in Cameron (16) and Namibia(17).

People with years of schooling were more likely to be willing to enroll in the CBHI scheme than people without years of schooling. Educated people may be more eager and confident to adopt new technology than people who are not educated. And higher educated people had positively related to the awareness of health insurance (18). This finding is in line with study held in Namibia(17).

Households with two or more number of under-five children were more likely to enroll in the CBHI scheme than households which had smaller number of under-five children. This may be as a result of the peoples' understanding of health burden or the vulnerability of under-five children from infectious disease like diarrheal. Twenty percent of the respondents were not willing to enroll to the CBHI scheme. The reason cited by respondents was that they preferred out of pocket payment over health insurance for health care (42%). This finding is almost consistent with a study done in Vietnam (13). Distrust of management of the insurance schemes was one of the main reasons mentioned elsewhere(19).

CONCLUSION AND RECOMMENDATIONS

This study showed that higher proportion of respondents was willing to enroll to CBHI scheme. However, factors like age, schooling, and household size were the significant factors associated with willingness to enroll CBHI scheme. Therefore, the government should give emphasis for the vulnerable groups (children and elderly) of societies during expansion of CBHI scheme. There shall be mechanisms such as education strategy out of the regular systems which is appropriate for most of the community to increase the educational status of the community which can facilitate the successful implementation of CBHI scheme. Moreover, premium for CBHI scheme shall consider the number of under-five children in the household.

Limitation of the study

The main limitation of the study may be the cross-sectional nature of the data whose cause and effect cannot be ascertained. There may also be measure-

ment errors due to self-reported responses of the respondents. However, several remedies were taken to minimize the measurement errors during data collection.

List of Abbreviations:

CBHI - Community-Based Health Insurance

Declarations

Ethical approval and consent to participant: Ethical clearance was obtained from the Institutional Review Board (IRB) of the University of Gondar, Institute of Public Health. Informed consent was obtained from each study subject.

Consent for publication: Not applicable

Availability of data and material: All necessary data are included in the manuscript.

Competing interests: The authors declare that they have no competing interests

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Authors' contributions:

AK conceived the original idea, designed the study and participated in all implementation stages of the project.

MG analyzed the data and finalized the write up of the manuscript.

MG and **MY** were responsible for critically revising the manuscript, and participated in its design and interpretation. All authors reviewed and approved the final manuscript.

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