

Determinants of Participation in Community Based Health Insurance: *A Study among High School and Preparatory School Teachers in Adama town, Oromia Region, Ethiopia.*

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Abstract

This study was aimed at investigating determinants of participation in community based health insurance (CBHI) among high school and preparatory teachers in Adama town, East Showa Zone, Oromia region. Universal coverage of health care is now receiving substantial worldwide and national attention and to realize the universal health coverage goal, cost-sharing between beneficiaries and governments is critical. To find out the determinants of participation in to CBHI, a study was conducted from November 2017 to April 2018 in Adama Town. The target populations of the study were government high school and preparatory teachers in Adama town. A cross-sectional study with stratified simple random sampling technique was used and data were collected using structured interviewer administered questionnaire. Out of 206 total sample size, 203 high schools and preparatory teachers participated in the study with response rate of 98.5%. Binary and multiple logistic regressions were used to estimate the crude and adjusted odds ratios for willingness to participate. The study result showed level of awareness on CBHI, marital status and monthly income were positively associated with CBHI participation. However, level of education and age has no association with CBHI participation. The study recommends that there is a need to disseminate information amongst the populations particularly teachers since they are a source of information to the larger segment of the population through their student. Moreover, the study recommends the policy makers of social health insurance to devise a strategy so as to incorporate the important of insurance schemes in the school curriculum in order to achieve the universal health coverage.

Key words: Health insurance, willingness to pay, monthly income, socio-economic conditions.

1. INTRODUCTION

Promoting health care in developing countries goes along with the issue of affordability, keeping constant other factors while enhancing health services. Realizing affordable health care in middle-and low-income nations dominates the development agenda as majority of the populations is unable to finance access to health services. Of course, the world governing body- WHO report 2010, illustrated that member nations are expected to promote their health care stations or systems towards universal health coverage through enhancing access to health care stations to people in possible cheapest prices that everyone able to afford (Carrin & Mathauer, 2018; WHO, 2010; Carrin & James, 2004). Promoting universal coverage can be made through establishing a financial risk pooling system which paves cross-subsidies in health systems in which degree of individuals capability to pay affects financing contributions and conditions of utilizing health services is obviously based up on individuals demands for care. That means, rather than directly paying for a service on spot of treatment, the governments are expected to arrange the way that prepayment is made for the health services rendered (McIntyre, Garshong, et.al, 2008; Hsiao & Shaw, 2007; IOL, 2007)

As of the past decades, Africa has on the verge of experiencing a renewed interest in Community Based Health Insurance (CBHI) programs as nations leverage communities to expand risk-pooling coverage to informal sectors and the rural population (Ginneken, 2007; Xu, & Evans, et.al, 2003; Evans, Carrin, et.al, 2007). CBHI programs, also called mutual health organizations, are not-for-profit mechanisms of health financing grounded in principles of solidarity and risk sharing). The recent proliferation of CBHI programs in many low and middle income nations comes in to being partly from a need to provide financial protection against unexpected health care costs and to enhance access to modern health care.

It is possible to mention Rwanda and Ghana which effectively used CBHI programs since 1993. Coming to Ethiopia, Federal Ministry of Health (FMOH) has pursued an aggressive health policy (Transitional Government of Ethiopia 1993) to mobilize and efficiently use domestic and donor resources, provide quality health services, and ensure access to health care for all segments of the population according to ability to pay (FMOH, 1998 and Zelelew, 2012).

Ethiopia is the second most populous nation in Africa and striving to achieve the universal health coverage (UHC) through a series of complementary measures including strengthening health governance at the facility level and implementing national health financing reform. In line with these, all efforts to improve the health care system of the country and to ensure universal health coverage, the country was implementing the CBHI as a pilot in selected districts of four big regions such as Oromia, Amhara, SNNP and Tigray as a road map for the start-up of the national social health insurance in Ethiopia. The participation and willingness to pay in this pilot was found to be very low (Solomon, et.al, 2013). This study was carried out to identify determinates of participation and willingness to pay CBHI among preparatory and high school teachers in Adama town.

2. STATEMENT OF THE PROBLEM

It is obvious that Health services delivery systems in low income nations face major challenges including a triple burden of communicable diseases, emerging diet -related chronic non-communicable disease and malnutrition. The coverage of health services is not only inadequate but also constrained by inadequate funding (Carrin and Waelkens, 2005). Cost-sharing between beneficiaries and governments is critical to achieve universal health care coverage. Provision of free health care in poor countries is challenged by small tax base; large informal sector; donor dependency; weak income and asset taxes; and high dependence on international trade. As these countries strive to establish social health insurance new challenges emerge, including troubles in arriving at a national consensus for health insurance schemes structure; income inequalities; weak government managerial capacity and poor infrastructure which limit the facilitation of collections, re-imburements and monitoring (WHO, 2003; Carrin and Waelkens, 2005).

The WHO in 2005 passed a resolution that it would support a strategy to mobilize more resources for health, for risk pooling, increasing access to health care for the poor and delivery of quality health care (WHO, 2005) in all its member states but especially low income countries. This strategy is also supported by the World Bank (Hsiao & Shaw, 2007).

It is obvious that Ethiopia has been encountered clumsy challenges in health financing. According to some researches, formal health insurance coverage in Ethiopia is extremely lower. That is, the research revealing out that in the years 1997 and 1998, out of the total populations of the nation, it is nearly 0.02 % to 0.03 % who had health insurance coverage. Also, in the year 2008, it is almost 1.1 % of the total populations that had health insurance coverage which later made the government incur nearly 1% of its health budget on insurance related matters (FMOH, Health Insurance Strategy, 2008).

Despite significant reform efforts seen in Ethiopia, health service utilization rates remain low, at 0.36 contacts per person per year (FMOH, 2010a). The cost of services, and specifically how much individuals or families payout of pocket (OOP) at the time of service, is a major barrier to use. In order to achieve universal health care coverage and strengthen the health delivery system, Ethiopia is planning to introduce Social Health Insurance under proclamation No 690/2010. As a road map for the eventual scale up of country wide social health insurance, Ethiopia has been implementing CBHI schemes as a pilot in 13 districts in four regions (in 3 districts in SNNPR, 3 districts in Amhara, 3 districts in Tigray and in 4 districts in Oromia Regions) since 2011 with the objective of drawing lessons. The overall average enrolment rate in the pilot district in four years (January 2011 to July 2014) was 45.5 percent of the target population which is very low (Solomon, *et.al*, 2013). In an era when universal health coverage is more relevant than ever before, it is important to understand the reasons for low enrolment and utilization of the community based health insurance schemes. To the best of our knowledge, no previous systematic reviews or assessments have been made in Ethiopia specifically designed to summarize determinants factors associated with uptake and utilization of CBHI in Ethiopia and hence there is limited evidence for factors associated for low enrolment and utilization of CBHI. Understanding the level of enrolment of preparatory and high school teachers on CBHI is paramount important as they are the major sources of information to students in their schools.

3. LITERATURE REVIEW

Defining social health insurance schemes are generally understood as health insurance schemes provided by governments to its citizens, especially to low and middle income populations. In developing nations, it is provided by governments, non-government organizations (Churchil, 2006). In additions, health insurance programs performs dual activities. These are: in one end it pools the health risks of its members and also the contributions of enterprises, households and governments on the other end. Social health insurance is different from tax based financing which typically entitles all citizens to services thereby giving universal coverage. Social health insurance entitlement is linked to a contribution made by, or on behalf of specific individuals in the population (WHO, 2005). Community-based health financing schemes are said to be among the leading plausible options for extending health insurance coverage in low-income countries, particularly among rural and informal sectors of society (Diop et al., 1995; Ekman, 2004).

Various literatures conducted in different times revealed factors those impeded enrolment into CBHI or people's willingness to pay (WTP) for CBHI. Hence, the factors that impedes enrolment include : age, income, education and distance to health facility (Acharya, et.al, 2009; Asenso, et.al, 1997). Respondent's age is found to have a positive effect on WTP in some studies, while in others it is the opposite (Asgary, et.al, 2004). Likewise, proximity to the nearest health facility has been found to have a positive effect on WTP in some cases, in the sense that short distance increased the likelihood of WTP (Acharya, et.al, 2009; Asenso, et.al, 1997) while in others it has had a negative effect (Asgary, et.al, 2004). Studies conducted in Nigeria and Cameroon have shown that household income has a positive effect on WTP (Dong, et.al, 2003) while the study conducted in Ghana has not found such an effect (Asgary, et.al, 2004). A study conducted in west Africa found out other factors that have been found to significantly influence WTP for CBHI program include education, household size, level of trust that households have in the management of the insurance program, sex, knowledge of the CBHI program and place of residence (urban vs rural) (Dong, et.al, 2003) Similarly, a study conducted in Bangladesh showed that educational level, monthly income, location and occupation significantly influenced WTP for CBHI among informal workers (Donfouet, et.al, 2011).

Most researches that have been published in Africa and Asia reveal willingness to pay is different from one nation to other as per the level of economic development. Accordingly, as per the research conducted in Ghana reveals that nearly 64% of respondents were willing to pay about Cedi 5000 (3 USD) per month per five member household for a National Health Insurance programs aimed at the informal sector (Luitfrid & Mnally, 2013). The results of the study conducted in low and middle income countries on "What Factors Affect Voluntary Uptake of Community-Based Health Insurance programs" revealed that the factor that affect enrolment most in CBHI, in Asia and Africa, is the socioeconomic level of households. Followed by heavy prevalence of chronic illnesses in households, that are more likely to join the CBHI (the severity is high in Sub- Sahara Nations than in Asia). In additions, literate, mature and female household heads give higher value to CBHI membership; gender affects most, followed by education and age. Whereas, elderly people negatively influences enrolment. The factors that behave differently across the aforementioned continents include: household size and Household head's marital status. Accordingly, household size has a negative effect in Asia but a positive effect in Sub Sahara Africa. Whereas, the influence of Household head's marital status is nearly approaches to

zero (negative) in Sub Sahara Africa and positive and almost higher in Asia. Hence, from the above findings, it is possible to infer that Socio-Economic level, education, gender and age have similar effects universally, whereas marital status and household size have only localized impact (David, et.al, 2016).

4. RESEARCH METHODOLOGY

This research was a cross-sectional study design to find out determinants of participation in CBHI at a single point in time and was conducted from November 2017 to April 2018. The populations for the study were all high school and preparatory teachers and the target populations were high school and preparatory teachers in Adama town working in public schools and having served for at least three months. A total of 9 government teaching institutions found in the town were stratified based on preparatory and high schools level. The study sample size (n) was determined through the use of population proportion and confidence level derivative ((Teffamichael, et.al, 2012). The sample size was determined by using single population proportion formula with the following assumptions: proportion of teachers willing to participate for CBHI=50% ($p=0.5$), 95 % confidence interval ($Z= 1.96$), and margin of error ($d=0.05$). The sample size was 384; since total population is less than 10,000; by using finite population correction formula and adding 10% for potential non-response, the final sample size became 206. Sample was proportionally allocated to each of the school based on the number of teachers in each school. After allocating proportional sample size for each school, lists of total teachers in each school were prepared and the required or proportionally allocated sample were selected from each school using simple random sampling technique, i.e. table of random number was used to select the first respondent and continued with selected interval until to reach all respondents or the total sample size determined in each school. The primary data was collected from the selected samples. The questionnaire included information on socio demographics, individual characteristics of the respondents, socio economic, level of awareness and the willingness to participate for CBHI. The questionnaire was adapted from different studies and was modified to fit the local context of the study and to respond the study objectives.

The data that has been collected using questionnaire was coded and entered in to Epi Data version 3.5.4 and cleaned to make sure all variables were entered properly and consistently. The cleaned data was transferred to SPSS windows version 22. The analyzed data was presented using tables and figures and analyzed by using descriptive analysis through computation of percentages, frequencies and means. Furthermore, frequency distribution of dependent and independent variables were worked out. Bivariate analysis was carried out to determine associations of selected variables with dependent variables. In multiple regression analysis, predictors were determined through adjusted odds ratio with 95% confidence interval.

5. RESULT AND DISCUSSION

As per the following table 1 illustrates, two hundred three teachers from government preparatory and high schools are participated in the study with response rate of 98.5%. The respondents were sorted out by their school types such as high school and preparatory. Accordingly, from the total participants of the study, 131 (64.5%) and 72 (35.5%) were from high schools and preparatory respectively. One hundred sixty three (80.3%) of the teachers participated in the study were

males. Regarding marital status, the majority of respondents, one hundred forty five (71.4%) were married and the rest 28.6% were never married. Pertaining to respondents educational level, the majority 180 (88.7%) had bachelor degrees followed by Master 15(7.5%). In a study conducted in Southern Ethiopia (Solomon Feleke, et.al, 2013) showed that 42.7% of the respondents had bachelor degree which was almost 50% lower than this study result. In the same study, 62.5% of the respondents were married.

Variables	High School N (%)	Preparatory N (%)	Total N (%)
Sex			
Male	99(48.8)	64(31.5)	163(80.3)
Female	32(15.8)	8(3.9)	40(19.7)
Marital Status			
Married	97(47.8)	48(23.6)	145(71.4)
Never Married	34(16.7)	24(11.8)	58(28.6)
Educational Status			
Bachelor Degree	125(61.6)	55(27.1)	180(88.7)
Master	1(0.5)	14(6.9)	15(7.4)
Diploma	5(2.5)	3(1.5)	8(3.9)

Source: (Own Survey-2017)

Respondents were asked their level of awareness on CBHI and willingness to participate in to CBHI schemes. The results were sorted out by respondents' work place (preparatory and high school). As indicated under table 2, more than half (64.5%) of the teachers participated in this study had heard of CBHI scheme. From 131 high school teachers who participated in this study, 49 (37.4%) never heard CBHI. Similarly, out of 72 preparatory teachers who participated in the study, 23 (31.9%) never heard CBHI. One hundred two (39.4%) of the participants (27.6 from high school and 11.8% from preparatory) were not willing to participate into CBHI schemes. In the study conducted in southern Ethiopia and Tanzania, around 28% of participants were not willing to participate in the health insurance.

Variables	High School N (%)	Preparatory N (%)	Total N (%)
Ever Heard of the CBHI Scheme			
Yes	82(40.4)	49(24.1)	131(64.5)
No	49(24.1)	23(11.3)	72(35.5)
Willingness to participate in CBHI			
Yes	75(36.9)	48(23.6)	123(60.6)
No	56(27.6)	24(11.8)	80(39.4)

Source: (Own Survey-2017)

Respondents who were not willing to participate into CBHI schemes, follow-up questions were asked to find out the reason/s why they were unwilling. The most frequently stated reason for unwillingness to participate into CBHI schemes was low income (58 respondents) followed by fear of poor implementation (45 respondents). The least reason stated was health insurance is confusing schemes. In the study conducted in Tanzania, the critical reason given was lack of knowledge about such schemes cited by 17% of the unwilling respondents; low income earnings cited by 13%; and reluctance to pay membership fee when one is not sick cited by 11%.

In order to predict the presence and absence of characteristics or outcome, different socio-demographic, socio-economic, awareness and CBHI related variables were entered in binary and multiple regression after controlling for potential confounders like sex, house hold member, service years, and the like was made. As illustrated on table 4 below, respondents who were married were 1.2 times more likely willing to participate and pay for CBHI schemes than never married, $P < 0.01$ (AOR=1.2, 95%CI. 1.378, 7.578). Respondents who had better monthly income 1.09 times more likely to be willing to participate in CBHI as compared to those teachers who had lower income $P < 0.05$ (AOR = 1.09, 95 % CI. 0.115, 0.987).

Participants who heard about health insurance scheme were 1.5 times more likely to be willing to participate in CBHI schemes as compared to those teachers who have never heard $P < 0.001$ (AOR =1.454, 95 % CI. 0.122, 0.447).

As illustrated under table 3 below, level of awareness was found out to be more predictor for the participation of CBHI schemes which was followed by marriage and income. The predetermined independent variables such as age and educational level were not significantly associated with willingness to participate and in CBHI schemes.

Table 3: Predictors of WTP for CBHI scheme (N= 203)					
Variables	WTP for CBHI			COR (95%CI)	AOR (95%CI)
	Yes	No			
Age					
<=30 (Ref)	39	18	0		
31-40	31	21		.675(0.558, 0.791)	1.089 (0.839, 10.519)
>40	53	41		.058(-0.139, 0.022)	.398 (.648, 3.420)
Marital Status					
Never Married (Ref)	45	13	0		
Married	78	67		.238(-.385,-.091)	1.173(1.378, 7.578)**
Education					
Diploma (Ref)	5	3	0		
Degree	111	69		0.708(.488, .928)	0.146 (.136, 9.806)
Master	7	8		-0.098(-.301,.104)	0.534 (0.530, 5.493)
Monthly Income					
<=3000 (Ref)	5	3	0		
3001-6000ETB	43	28		0.631(.413, .812)	0.750 (0.059, 3.802)
>6000ETB	75	49		-.004(-.124,.115)	1.090 (0.115, .987)**
Heard about CBHI					
No (Ref)	28	44	0		
Yes	95	35		0.336(.202, .470)	1.454 (0.122, .447)**

Source: (Own Survey-2017)

**=indicates the significant predictors at P. Value <0.05

6. CONCLUSION AND RECOMMENDATIONS

The study examined determinants of participation in to the CBHI schemes among high school and preparatory teachers in Adama Town. Binary and multiple logistic regressions were used to estimate the crude and adjusted odds ratios for willingness to participate. This study found out that more than half of the teachers in government preparatory and high school were aware of the CBHI schemes but still there were high percentage of teachers participated in this study were not aware of CBHI schemes. Those respondents who were not willing to participate in to CBHI were asked the reasons why they were not willing to participate and fear of poor implementation was one of those frequently stated reasons for not willing to participate into CBHI followed by lack of trust in government program and schemes not known. Level of awareness was found out to be one of the significant predictor for the participation of CBHI schemes which was followed by marriage and income. The predetermined independent variables such as age and educational level were not significantly associated with willingness to participate in CBHI schemes.

The study findings have shed light factors affecting the participation into CBHI schemes that must be addressed if universal coverage is to become a reality. Firstly, the study have shown that level of awareness about health insurance schemes among high school and preparatory teachers is a right recipe that flourishes the existence of negative misconceptions and myths about such schemes. In fact, lack of awareness greatly affect the participation to health insurance and therefore designing and implementing a social and behaviour change communication with the aim of promoting the uptake of health insurance scheme is paramount important. Therefore, there is a need to disseminate information amongst the populations particularly teachers since they are a source of information to the larger segment of the population through their student. It would also be important for the policy makers of insurance to devise a strategy so as to incorporate the important of insurance schemes in the school curriculum in order to achieve the universal health coverage.

Fear of poor implementation was one of those frequently stated factors for not willing to participate and therefore, building the confidants of the general population in general and teachers in particular on the stated insurance schemes will be conversant for successful implementation of the upcoming planned social health insurance schemes stated under proclamation No 690/2010. In additions, it is advisable to federal ministry of health to exert its efforts in implementing of the scheme as there are encouraging findings.

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