

Willingness to Join Community-Based Health Insurance and Its Associated Factors among Households in West Gojjam Zone, North Mecha Woreda ,Amhara region, Ethiopia

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Research

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Abstract

Background

Community-based health insurance schemes are becoming increasingly recognized as a potential strategy to achieve universal health coverage in developing countries. Ethiopia is a low income country with more of health spending out of pocket payment by households. Health insurance is also expected to provide financial protection because it reduces the financial risk associated with falling ill. Therefore; financial risk in the absence of health insurance is equal to the out-of-pocket expenditures because of illness.

Method

Cross-sectional community based study design was conducted by using a pretested structured questionnaire. Multi-stage cluster, simple random and systematic sampling techniques was used to select 296 households as study units which were allocated to the kebeles proportionately. The sampled households were selected using simple random sampling technique. Bivariate and multivariate logistic regression was used for analysis of variables and 95% confidence level and P value <0.05 was used to measure strength of association.

Results

A total of 296 sampled study participants, 285 participated in this study with a response rate of 96.3%. From this, (90.9%) were willing to join and (89.8%) of them were willingness to pay CBHI. the benefits of join the scheme were as follows, (86.8%) were reduce OOP expenditure, (8.3%) of them improve health status, (2.3%) were reduce the risk of severity and (2.6%) foster productivity.

Conclusions

This study showed that the proportion of willingness to join CBHI was higher than the findings of others study in the country and it is encouraging for planned strategy to expanding the scheme throughout the country. The main challenges utilization of health services in government health institutions were absence of available medicine, poor service delivery, lack of enough laboratory, health professional's lack of good behavior and shortage of ambulance services. To alleviate such problem the government should be encourage access to health services.

Background

Community based financing is defined as 'a generic expression used to cover a large variety of health financing arrangements like micro insurance, community health funds, mutual health organizations, rural

health insurance and community involvement in user-fee management' [1]. Community-Based Health Insurance is a type of insurance means informal sectors through contributing some amount of money, and the schemes are not-for-profit type of health insurance that has been used by poor people to protect themselves against the high costs of seeking medical care and treatment for illness [2]. It covers a wide variety of health insurance arrangements with vast gradients in terms of ownership, management, membership, and service as well as financial coverage in distinctive settings and designed for different population groups [1].

Community-based social dynamics and collective risk sharing, solidarity, participatory decision-making and administration, non-profitability and voluntary membership are characteristics of community-based health insurance schemes. The schemes provide free health care services, included benefit packages, for individual or household members who enroll by paying premium required [3].

Globally, about 44 million households faced catastrophic health expenditure while about 25 million households are impoverished because of direct health care payments. Over 90% of healthcare financial difficulties and their consequences have been occurring in Sub-Saharan African countries, where resources are limited [4]. In the majority of African countries including Ethiopia, more than 40% of their total health expenses were constituted by out-of-pocket payment and this resulted in scarcity of finances for health [5].

Universal health coverage monitoring report in 2017 showed that many people lack essential health service and people are pushed into poverty spending too much budget. It showed that in the entire worlds, more than 7.3 billion people do not receive all essential health service they needs. Over 800 million people spend at least 10% of their household budget to pay for health care and 100 million people are pushed to extreme poverty due to their health care expenditure [6]. Low enrollment in CBHI remains a challenge in many African countries. Out of the total 900 million catchment population, only 2 million people are participating in the CBHI scheme, which accounts for only 0.2% of the catchment population [5].

CBHI schemes have been operating in sub-Saharan African since the 1990s [9]. However, enrollment and retention have been a problem [7, 8]. In 2006, only 2 million out of an estimated 900 million people were enrolled in a CBHI scheme in Africa [9]. A recent systematic review of the literature on CBHI coverage in low-and middle-income countries shows that supply and demand side factors impact enrollment [10]. Mebratie et al., in their study of drop-out rates in Ethiopia, highlighted three additional factors that contributed to CBHI renewal: the cost of premiums, health status and understanding of health insurance [8].

The government of Ethiopia is working to narrow the existing wide gap between community demand for health care and financial constraints in the health sector by implementing the CBHI scheme in rural areas [11]. Currently, CBHI scheme is being implemented over 161 districts and recent evaluation shows improvements in health service utilization among districts implementing CBHI scheme [12]. Health-care financing in Ethiopia has been characterized by low government spending, strong reliance on out-of-

pocket expenditure, inefficient and inequitable utilization of resources, and poorly harmonized and unpredictable donor funding over the years [13].

The benefits packages of CBHI in Ethiopia include all family health services and curative care that are part of the essential health package in Ethiopia when the scheme is scaled up to full implementation. Curative services include inpatient, outpatient services and acute illnesses [14]. Therefore, the objectives of this study was assessment of willingness to join community based health insurance and factors associated with households in North Mecha Woreda, West Gojjam Zone, Amhara region, Ethiopia.

Methods

Study setting, design and methods

The study was conducted in North Mecha Woreda, West Gojjam Zone, and Amhara region. Amhara region is the second most populous region in Ethiopia next to Oromia region. From the total population of Amhara [49.9%] were male and 51.1% of them female population. The majority of the population were rural residence (80.6%). The community based cross-sectional study design was conducted. The study was used quantitative research methods as a tool for data collection. Structured questionnaire was employed to collect data from the study households heads.

Data types and sources

Both primary and secondary data type was used in this study. The primary data source was obtained from structured questionnaire. While, the secondary data source also obtained through published and unpublished documents, like books, journal articles and annual research reports of various institutions that are relevant to this study included to obtain secondary data.

Source and study population

All households in Wets Gojjam administrative Zone were considered as source population and all household heads in the randomly selected Kebeles from Woreda were the study populations.

Sampling techniques

You know that various researchers use different sampling techniques and procedures based on, the interest of the investigator, the nature of study and the number of study subjects. For this study, probability sampling technique was used to select the study area and study subjects. The researcher was used a multi-stage cluster sampling techniques to select the study area ,subjects, and the proportionate allocation would be used to determine the sample of each selected kebeles from study the site. In the first stage, from the total of thirty six kebeles of the Woreda, ten kebeles were selected using simple random sampling techniques. In the second stage, by using systematic sampling, the list of household heads were obtained from family folder or community health information system at health center. Finally, the study participants were selected using simple random sampling.

Sample size determination

The sample size was determined using single population proportion formula, with the assumptions of 5% margin of error and 95% CI; $Z_{\alpha/2}$ = Critical value = 1.96, taking $P = 77.8\% = 0.778$ was done in Bugna district, Northeast, Ethiopia and 10% non-response rate .

Where, n = required sample size $n = \frac{\left(\frac{Z\alpha}{2}\right)^2 p(1-p)}{d^2}$ [15].

$$= \frac{\left(\frac{1.96}{2}\right)^2 0.778(1-0.778)}{0.05^2} = 265 + (265 * 0.1) = \mathbf{296}$$

Data collection

Data were collected using a structured questionnaire and the questionnaire was developed based on available information obtained from various literature. The questionnaire was prepared first in English and next translated into Amharic local language for data collection process. Six trained data collectors and two supervisors were involved in the data collection process. Supervisors followed the data collectors and provided any necessary correction on the spot.

Data quality control

To control data quality accurately, the intensive training was provided one day about the aims of the study, procedures and data collection techniques. Prior to the study 5% pretest structured questionnaire was carried out on household heads outside the study area to check the reliability of the questionnaire. Some questionnaire was adjusted based on pretest findings. Next to this, the data collectors goes to normal data collection process. The collected data was reviewed, checked for completeness by supervisor's manually each day before enter to SPSS software. After this, data entering, editing, cleaning and analysis was done by using SPSS software version 22.

Data analysis

The collected data was analyzed using binary and multivariate logistic regressions to determine the effect of various factors on the outcome variable. The results were presented in the form of tables and text using frequencies and summary statistics such as standard deviation, mean, and percentage to describe the study population in relation to relevant variables. The degree of association between dependent and independent variables was assessed using odds ratio with 95% confidence interval and p -value < 0.05 declared statistical significance.

Results

Demographic and socio-economic characteristics of respondents

A total of 285 study participants responded for the interviews, making the response rate 96.3%. All in all, (90.9%) of the study participant households were willing to join the community-based health insurance scheme. Among study participants, (88.4%) and (11.6%) were male and female respectively. The age of the respondents has been classified with 4 age categories. The results show that, (10.9 %) of the respondents were in age category of 18-28, While(16.8%) them were from 50 and above 50 years and (34.1%) were from 40-49. The significant number of the respondent's (38.2%) was in the age category of 29-39. This implies that, the majority of the respondents were concentrated in the age category of adult and productive age. Regarding to place of the residence, majority of the respondents (81.1%) were rural and the rest (18.9%) were urban dweller. Concerning to religious affiliation of the study participants, (86.3%) and (13.7%) they were Orthodox and others.

It can be understood that, the majority study participants from marital status category was married (89%). Concerning the educational level (44.2%) of the respondents were illiterate, (29.8%) them were read and write educational status, while (26.8%) of them were primary school and above. As shows in Table 1, the occupational status of the respondents (60.7%) were engaged farming and (7.7%) were house wife. The 5.3 % of the respondents were government employee, while (12.3%) were working as a daily laborer and (14%) of them were merchants. The study result shows that (74.4%), (18.9%) and (6.7%) of the respondents have an average monthly income from 300-2000, 2001-4000 and 4001-9000 ETB within households respectively.

Table 1

Demographic and socio-economic characteristics of study participants in North Mecha Woreda, West Gojjam Zone, Amhara region Ethiopia

Variables		Frequency (N)	Percentage (%)
Sex	Male	252	88.4
	Female	33	11.6
Age	18-28	31	10.9
	29-39	109	38.2
	40-49	97	34.1
	50 and above 50	48	16.8
Place of residence	Rural	231	81.1
	Urban	54	18.9
Religion	Orthodox	246	86.3
	Others	39	13.7
Marital status	Single	15	5.3
	Married	254	89
	Widower/Widow	10	3.5
	Divorced	6	3.1
Educational status of HH	Illiterate	126	44.2
	Read and write	85	29.8
	Primary school & above	74	26.8
Occupational status of HH	Farming	173	60.7
	House wife	22	7.7
	Government employee	15	5.3
	Laborer	35	12.3
	Merchants	40	14
Monthly average income of family	300-2000	212	74.4
	2001-4000	54	18.9
	4001-9000	19	6.7

Variables		Frequency (N)	Percentage (%)
Household size	1-3	136	47.7
	4-6	118	41.4
	7&above	31	10.9
Filed survey, 2020/21			

The characteristics of respondents by the levels of WTJ, health status and health service utilization

Among study participants, 90.9% of households had joined a CBHI scheme. The majority of participants, (35.8%) of them were join before three years ago, while, (15.4%), (25.3%), and (23.5%) of them were join ,before one year, two years and four years ago respectively. From 285 total study participates (93.3%) were reported that join in CBHI have advantages, while, the benefits were as follows, (86.8%) were reduce OOP expenditure,(8.3%) of them improve health status, (2.3%) were reduce the risk of severity and (2.6%) foster productivity.

Among participants who had WTJ, (89.8%) were also willing to pay for this proposed health insurance scheme. With regard to CBHI premium, (70.2%) of respondents reported that paying the proposed health insurance cost was affordable. Majority of the respondents (89.2%) were renew family member ID timely and paid the renewal ID cost, (100%) were covered by self-sponsor. Among those respondents the amount of expenditure cost to register and renewed ID, (70.2%), (15.4%), and (14.4%) were found the interval from, 240-350, 351-450, and 451-1000 ETB with decreasing order respectively.

As Table 2, indicated (80%) of respondents family members had encountered an illness in the past one year. Of which, (80%) got a medical treatment from different health facility. From those respondents, (17.5%), (46.5%) and (36%) of them were from public health center, private health center and government hospital respectively. And (86.4%), respondents that it took >60 minutes to reach the health facility. Among 285 sampled respondents, (43.2%) were CBHI package fulfil the needs of household treatment and majority of the respondents (72.6%) said that CBHI facility provided good services. It can be understood that, (45.6%) of the respondents rated their perceived quality of health care service in the district as low, while the overall CBHI service level was poor(66.7). The main challenges utilization of health services in government health institution, (34.2%), (32.7%), (26.3%),(4.2%) and (2.6%) were absence of available medicine, poor service delivery, lack of enough laboratory equipment, health professionals not have good behavior and shortage of ambulance services respectively.

Table 2

The characteristics of respondents by the levels of WTJ, health status and service utilization in North Mecha Woreda, West Gojjam Zone, Amhara region, Ethiopia

Variables	Responses	Frequency (N)	Percentage (%)
Willingness to join CBHI	Yes	259	90.9
	No	26	9.1
When you join CBHI	Before one year ago	44	15.4
	Before two year ago	72	25.3
	Before three year ago	102	35.8
	Before four ago	67	23.5
Join CBHI have advantage	Yes	266	93.3
	No	19	6.7
Benefits of join in CBHI	Reduce OOP expenditure	231	86.8
	Improve health	22	8.3
	Reduce the risk of Severity	6	2.3
	Foster productivity	7	2.6
Willingness to pay CBHI	Yes	256	89.8
	No	29	10.2
CBHI premium is affordable	Yes	200	70.2
	No	85	29.8
Renew your & family member ID timely	Yes	256	89.2
	No	29	10.2
Paid registration& renewal ID cost	Self-sponsor	285	100
Amount of expenditure cost to register and renewed ID	240-350	200	70.2
	351-450	44	15.4
	451-1000	41	14.4
Had family members experience of illness in the past one year	Yes	228	80
	No	57	20
Got a medical treatment	Yes	228	80
Filed survey, 2020/21			

Variables	Responses	Frequency (N)	Percentage (%)
	No	57	20
Place of treatment	Public health center	40	17.5
	Private health center	106	46.5
	Government hospital	82	36
Distance home to health facility in minutes	<60 minutes	31	13.6
	>60 minutes	197	86.4
Time waited to see medical doctor	<30 minutes	7	3.1
	30-60 minutes	43	18.9
	1- 3 hours	78	34.2
	3-6 hours	59	25.9
	6 hours &more	36	15.8
	More than one day	5	2.2
CBHI package fulfil the needs of HH treatment	Yes	123	43.2
	No	162	56.8
CBHI health facilities provided a good service	Yes	207	72.6
	No	78	27.4
Perceived quality of health care service in the district	Very low	5	1.8
	Low	130	45.6
	Medium	100	35.1
	High	39	13.7
	Very high	11	3.9
Overall CBHI service level	Poor	190	66.7
	Good	95	33.3
Challenges to use services in government health institution	Absence of available medicine	65	34.2
	Lack of enough laboratory equipment	50	26.3
Filed survey, 2020/21			

Variables	Responses	Frequency (N)	Percentage (%)
	Shortage of ambulance service	5	2.6
	Poor service delivery	62	32.7
	Health professionals do not have good behavior	8	4.2
Filed survey, 2020/21			

Factors Associated With Willingness To Join Cbhi

Bivariate and multivariate analysis of logistic regression model were carried out to identify factors associated with willingness to join CBHI scheme. Variables with p-value of less than 0.2 in bivariate analysis were entered to multivariate analysis. The study revealed that household heads whose residence in urban area ,occupation working as merchant compared to farmer, occupation employed in merchant compared government employee, willingness to pay, join in CBHI scheme have advantage ,CBHI packages fulfil the needs of HH treatment and CBHI health facilities provided good services, were significantly associated with join in CBHI at p-value<0.05 .

Table 3

Bivariate and multivariate analysis of factors associated with willingness to join community-based health insurance among households in North Mecha Woreda, West Gojjam Zone, Amhara region, Ethiopia

Variables	Willingness to Join CBHI		Odds Ratio(OR)		
	Yes	No	B	COR(95%CI)	AOR(95%CI)
Place of residence					
Rural	209	22	-0.999(0.395)	0.368(0.169-0.802) 0.012	1.484(2.343- 6.427)0.025
Urban	42	12		1	1
Religion					
Orthodox	221	25	-0.975(0.485)	0.377(0.161-0.884) 0.025	1.624(0.334-7.900) 0.548
Others	30	9		1	1
Educational level of HH					
Illiterate	119	7	-1.545(-1.084)	0.213(0.083-0.547) 0.001	0.338(0.061-1.875) 0.215
Read & write	74	11	-0.618 (-0.629)	0.539(0.232-1.250) 0.150	0.533(0.115-2.466) 0.421
Primary & above	58	16		1	1
Occupational status of HH					
Farming	165	8	-2.296(-2.321)	0.101(0.038-0.266) 0.000	0.098(0.027-0.363) 0.001
House wife	19	3	-1.115(-1.209)	0.328(0.082-1.311) 0.115	0.298(0.060-1.491) 0.141
Gov't employee	14	1	-1.908(-3.000)	0.148(0.018-1.253) 0.080	0.050(0.004-0.639) 0.021
Laborer	26	9	-0.330(-0.902)	0.719(0.263-1.966) 0.520	0.406(0.119-1.386) 0.150
Merchants	27	13		1	1
Willingness to pay CBHI					
Yes	235	21	-2.207(-2.330)	0.110(0.047- 0.259)0.000	0.097(0.035-0.267) 0.000

Filed survey, 2020/21

Variables	Willingness to Join CBHI		Odds Ratio(OR)		
	Yes	No	B	COR(95%CI)	AOR(95%CI)
No	16	13		1	1
CBHI premium is affordable					
Yes	185	15	-1.267(-0.544)	0.282(0.135-0.586)0.001	0.580(0.246-1.368)0.213
No	66	19		1	1
Join in CBHI have advantage					
Yes	244	22	-2.945(-2.525)	0.053(0.019-0.147)0.000	0.080(0.027-0.236)0.000
No	7	12		1	1
CBHI package fulfil the needs of HH treatment					
Yes	118	5	-1.638(-1.133)	0.194(0.073-0.518)0.001	0.322(0.111-0.936)0.037
No	133	29		1	1
CBHI health facilities provided a good service					
Yes	193	14	-1.559(-1.313)	0.210(0.100-0.442)0.000	0.269(0.118-0.613)0.002
No	58	20		1	1
Filed survey, 2020/21					

Discussions

This study revealed that 90.9% of households were WTJ for proposed community based health insurance. The current finding is in line with the study was conducted in the capital city of Nigeria (96%) [16] and north of Nigeria (90%) [17]. the result of this study exceeds those study done in Dehub Bench (77.8%), [18] and, Fogera districts (80%) [19]. this might be due to variation in the sample size, study period, knowledge, and perception of participants towards the CBHI scheme.

In this study, the place of residence of the study subjects affects join in CBHI scheme. Urban residence of household heads were 1.484 times less likely to join the scheme compared to rural residences (AOR=1.484; 95% CI; 2.343-6.427). This might be in rural area households have large number family size, limited resource and low financial potential, due to this the probability of WTJ the CBHI scheme in rural higher than compared to urban.

This study also showed the occupational status of CBHI members had a significant association with join CBHI. Merchants were 0.098 times less likely to join CBHI than compared to farmers (AOR=0.098; 95% CI; 0.027-0.363). The study results which is supported by the study conducted in the Edo state of Nigeria [20]. This might be due to the fact that households heads by merchants were more likely to have the financial ability to cover their health care costs compared to farmer. Farther more, merchants were 0.050 times less likely join in the scheme compared to government employee (AOR= 0.050; 95% CI; 0.004-0.639). This might be, due to the fact that household's heads by merchants were more obtained daily income or revenue and easily cover financial cost of health care services than government employee. Because the government employee only have monthly salary and the salary might not enough to cover the health costs.

Household heads willingness to pay CBHI had significantly associated with willingness to join in the scheme. The respondents were not willingness to pay community based health insurance schemes 0.097 times less likely to join in CBHI than compared to those who pay (AOR=0.097; 95% CI=0.035-0.267). This might be availability of services in health facility good. Moreover, after joining the scheme is to get high quality health service at affordable costs, quality of health care at public facilities such as patient reception may high. Due to this, pay to CBHI significantly affect join in CBHI

The study indicated that households join in CBHI scheme were not have advantage 0.080 times less likely to join in the scheme than compared to (Yes) those who have advantages (AOR, 0.080; 95% CI, 0.027-0.236). In the study, community based health insurance package fulfil the needs of HH treatment indicated a strong positive effect in join the scheme. Household heads who were not CBHI packages fulfil the needs of HH treatment 0.322 times less likely to join CBHI than compared to (Yes) the packages fulfil the needs of HH treatment (AOR, =0.322; 95% CI; 0.111-0.936).

The study participants shows that CBHI health facilities provided a good services were significantly associated with willingness to join in CBHI scheme. Furthermore, the study subjects reported that CBHI health facilities not provided a good services were 0.269 times less likely to join CBHI than compared to (Yes) CBHI health facility provided a good services (AOR=0.269; 95% CI; 0.118-0.613). The study was similar with other studies results [8, 21]. This might be due to the direct benefits gained from the quality of services delivered by health institutions.

Conclusions

According to this study, a high proportion of households were willing to join the CBHI scheme. A significant number of respondents were got high proportion of health care services from private health center than government health facilities. The main reasons low health care services utilization in government health institutions were absence of available medicine, lack of enough laboratory equipment, shortage of ambulance services, poor services delivery and health professional's behaviors problems.

Abbreviations

CBHI; Community based health insurance, AOR; adjusted odds ratio, COR; Crude odds ratio, OOP; out of pocket, ETB; Ethiopian birr, WTJ; willingness to join, HH; household, HF; health facility, SPSS; statistical package for social sciences, CI; confidence interval

Declarations

Ethics approval and consent to participate: Ethical clearance was obtained from University of Gondar, College of Social sciences and Humanities Research and Publication condition office (CHSHR&PCO).A formal letter of cooperation was written to North Mecha Woredas from University of Gondar and permission was obtained from respective kebeles administrators. The study participants were informed about the purpose and their right to refuse the study. After this Oral consent was obtained from all study participants before the interview.

Consent to Publication: Not applicable

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Authors' contributions: Getaneh Bizuayehu Demeke (GBD) prepare the proposal, collect the data, analysis data, interpret data, wrote the results, prepare the manuscript, develop and write up of the full document. All manuscripts prepared by GBD. The author have read and approved the manuscript.

Competing interests: The author declare that they have no competing interests.

Availability of data and materials: All the data supporting the study findings are within the manuscript. Additional detailed information and raw data will be shared upon request addressed to the corresponding author.

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