

# Willingness of Households to Pay Community Based Health Insurance and its Associated Factors in Mecha District, Northwest Ethiopia: Community based Cross-sectional Study

Getaneh Bizuayehu Demeke (✉ [getanehuog@gmail.com](mailto:getanehuog@gmail.com))

University of Gondar

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## Research

**Keywords:** CBHI, willingness to pay, households, Mecha, northwest Ethiopia

**Posted Date:** February 15th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-182524/v1>

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# Abstract

## Background

Community-based health insurance schemes help to give financial protection and decrease direct out-of-pocket payment for health care based on the assumption of risk-pooling and community solidarity to reduce the risks of falling sick. Ethiopia is a low-income country with more health spending out of pocket payment by households. Community-based health insurance was introduced in Ethiopia in 2010. It covers only the rural community and informal sector.

## Objectives

This study aimed to assess the willingness of households to pay community-based health insurance and its associated factors in Mecha district, Northwest, Ethiopia.

## Methods

Community-based cross-sectional study design was used to collect data from 285 household heads using multistage sampling techniques in Mecha district, Northwest Ethiopia. The data were collected by using trained data collectors and using a pre-tested structured questionnaire. A binary logistic regression model was used to determine the presence of statistically significant associations between the dependent and independent variables at  $p$ -value  $< 0.05$  and AOR values with 95% CI.

## Results

From the total of 296 sampled respondents, 285 participated in the study with a response rate of 96.3%. Of these, 251 (88.1%) were willing to join voluntary as well as 34 (11.9%) were willing to join mandatory and 256 (89.8%) of them were willing to pay community-based health insurance services. The average amount of money the households were willing to pay per household per annum was 334.02 ETB, found with the interval of (317.32–351.30) with the range between 240–1000 ETB.

## Conclusions

The willingness of household heads to pay for the community-based health insurance was high. Residence, joining CBHI, premium affordable, CBHI having an advantage and distance from households home to HF were more willing to pay CBHI schemes. The study indicated that high willingness to pay and low CBHI package fulfill the needs of HH treatment as well as overall CBHI service level was poor. Therefore, Mecha district CBHI coordinating office should scale up the community-based health insurance services in the scheme.

## Background

Globally, about 150 million people face catastrophic health expenditures every year and 100 million fall into poverty after paying for health care (21). Community based health insurance (CBHI) is not the profit type of health insurance because this established to helps the poor people protect themselves from the financial risk of illness. In CBHI schemes, members regularly pay small premiums to health services, if they require services. Based on the concepts of mutual aid, most CBHI schemes are designed to people that live and work in the rural and informal sectors who are unable to get adequate public, private, or employer sponsored health insurance (6).Community-based health insurance it has the potential to provide financial protection and to increase utilization of health services and to mobilize additional resources for health (20).

In 2010 WHO recommends that direct out-of-pocket payments should not exceed from 15–20% of the total health expenditure. This helps to reduce the incidence of financial catastrophe shock to negligible level (21). However, Africa has the poorest people who pay comparably most for health care. In the 20 countries of African region, the out-of-pocket expenditure of households makes up over 40% of total health expenditure (23). For instance, in Ethiopia, 34% of health expenditure is generated from households (16).

The health systems of Ethiopia organized in to three level of delivery system: level one is districts health systems comprised of a primary hospital it covers from 60,000-100,000 population, health centers from 15,000–25,000 population and their satellite health posts from 3,000- 5000 population connected each other by a referral system. Level two is a general hospital covers 1-1.5 million people and level three is a specialized hospital covers from 3-3.5 million people (12).

The basic determinants of enrollment in CBHI are demand and supply side related factors. Such as, Educational status of household head, access to social networks, perceptions regarding the scheme, knowledge of the scheme and distance to the health facility are the determinants to enroll CBHI (15). The study employed on willingness to join social health insurance between selected teachers showed that information (awareness), inability to pay for medical bill, and higher educational level were found to be associated with willingness to join to insurance (2).The study was conducted by Fekade ,on feasibility of health insurance schemes for community based group (Iddirs) indicated that, household income, household member size, education, health status, and formal employment were a positive and significant effect on household willingness to join (14). Determinant factors of enrollment to community based health insurance are classified as household character, scheme related factors, social capital, institutional factors, and supply side factors (9).

Ethiopia have the experience of high economic growth over the last few decades, however, remains a poor country with a high burden of disease (11). The Ethiopian health care system is characterized by high out-of-pocket expenditure, increased health care needs, inability to mobilize more resources for health among rural dwellers, and inability to fully recover costs of care incurred by beneficiaries (10). Health-care financing in Ethiopia has been characterized by low government spending, strong dependent on out-of-

pocket expenditure, inefficient and inequitable utilization of resources, and poorly harmonized and unpredictable donor funding over the years (7). The shortage of resources in the health care system leads to low utilizations of health services. Outpatient health care utilizations per capita per year was reported only 0.3 visits/year in 2011, accompanied by huge reliance on the OOP spending (33.7%) (17).

In Ethiopia, around 79.87% of the total health expenditure is derived or generated from household out-of-pocket payments which is the most regressive way of funding health care (22). The reliance on this payment mechanism creates financial barriers to accessing health services and put people at risk of impoverishment (13). Ethiopian Demographic and Health Survey (EDHS) 2016 indicated that the health insurance coverage is extremely low, 95% of women and 94% of men are not covered by any type of health insurance (5). The study on willingness to pay a CBHI among households in the rural community of Fogera district indicated that willingness to pay a CBHI an

average of 187 birr per household per year. However, they showed that the amount of the premium should consider the family size, wealth status and the willingness of the households (1).

According to Beyene (2019) study indicated that the challenges of CBHI scheme divided in to two. The first challenge is demand side, such as delay of paying annual premium, increasing intension of beneficiaries to have injections rather than oral tablets as well as kebele leaders forced households to pay the premium, low sense of belongingness and ownership of members to the scheme and some household members didn't bring all family members to register in CBHI. The second challenge is supply side, like inadequate medicines in government pharmacies, poor service providers and health facility, inadequate laboratory equipment, long process of referral system from one health facility to another health facilities, lack skilled man power, some service providers lack professional ethics as well as serving indifferently among member beneficiaries and non-members(4).

## Research Methods

**Study area:** These study was conducted in Mecha district, Amhara region, Northwest Ethiopia. Amhara region is the second most populous region in Ethiopia and the estimated population according to 2019-20 regional population projection was 22, 189,999. From this total population 49.9% and 51.1% are male and female respectively. The majority of population are rural residence (80.6%). From a total of Amhara region population, 346,283 (1.56%) of the population live in Mecha district. The district is located 529 km far from Addis Ababa and 34.2 km far from Bahir Dar. Mecha district have 33 rural and 3 urban kebeles.

**Research design:** Community based cross-sectional study design was employed in Mecha district, Northwest Ethiopia. The study was used quantitative research methods as a tool for data collection. A structured questionnaire was employed to collect data from the study households heads.

**Research data sources:** Both primary and secondary data sources were used. To achieve the study objective, the primary data source were used to collect information from household heads and collected

through questionnaire. Moreover, secondary data sources were obtained from different published and unpublished materials.

**Source and study population:** The source population for this study was all households found in Mecha district and the study population were randomly selected household heads from sample kebeles of Mecha district.

### **Sample size determination**

The sample size was determined using single 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  $n = \frac{\left(\frac{z\alpha}{2}\right)^2 p(1-p)}{d^2}$  (8).

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

**Sampling techniques:** Multi-stage cluster sampling technique was applied to select the study subjects and probability proportionate allocation would be used to determine the sample of each selected kebeles. In the first stage of the total thirty six kebeles of the district 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.

**The study variables:** Dependent and independent variables

**Dependent variables:** Willingness of households to pay CBHI

**Independent variables:** Socio-economic, demographic and health related factors

**Likert scale measurement:** Household interviews were carried out, using semi-structured questionnaire. The scale measurement would be employed to measure the perception and satisfactions of households regarding to CBHI premium and services. Five point Likert with three questions related perception and three questions to satisfactions were performed, such as, strongly disagree, disagree, neutral, agree and strongly agree. Together, the three each items produced a minimum score of 5 and maximum score of 15.

**Data collection procedure:** Structured questionnaire was developed based on the available information. The questionnaire was prepared first in English and translated into Amharic local language for data collection process. The questionnaires were prepared based on the independent variables. Six trained

data collectors and two supervisors were involved in the data collection process. The data collectors were managed by supervisors.

**Data quality control for quantitative:** 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. The collected data was reviewed, checked for completeness by supervisor's manual each day before enter to SPSS software. After this, data entering, editing, cleaning and analysis was done using SPSS software version 22.

**Data analysis:** SPSS software was used to analysis different variables and put results in the table, frequency and percentages. The strength of association was measured using crude and adjusted odds ratios, with 95% CI, to measure statistical significance at p-value <0.05. Binary logistic regression model was employed to control the effect of each independent variables on the dependent variable. The collected data was analyzed using chi-square test and binary logistic regression. The general form of logistic regression model is:

$$\ln \left[ \frac{p_i}{1 - p_i} \right] = B_0 + B_1 X_{i1} + B_2 X_{i2} + \dots + B_k X_{ik}$$

Where:

Pi: is the probability of experiencing willingness to pay CBHI for i<sup>th</sup> respondents

Bi: is the parameter coefficient, B0 is a constant and X is the value of an independent variable Binary logistic regression is a form of regression, which is used to when the dependent variable is dichotomous and the independent variables are any type. The dependent variable for this study, willingness to pay CBHI, is binary or dichotomous variable (with two outcomes). The value label of the variable is "1" if the respondent ever had willingness to pay CBHI and "2" if the respondent never had willingness to pay CBHI in the study area.

## Results

### Socio-demographic characteristics of households

Out of 296 sampled household heads, 285(96.3%) were participated in the study. Among this 252(88.4%) were males and 33(11.6%) were female household heads. The age of household heads from, 18-28 (10.9%), 29-39 (38.2%), 40-49(34.1%) and 50 and above (16.8%). With respect to residence, 231(81.1%) were rural and 54(18.9%) were urban. The majority of respondents were orthodox followers 246(86.3%). With regard to marital and educational statues, 254(89%) were married and 126(44.2%) of them illiterate. Regarding to occupation of household heads, the majority were farmers 173(60.7%) and

the rest 112(39.3%) were labour, government employee, housewife and merchants. The mean average of monthly income of family were 1,658 ETB and family size of household heads from 1-3 (47.7%), 4-6(41.4%) and 7 and above (10.9%) (Table, 1).

**The Levels of WTP CBHI:** The majority of study participants were willing to paid CBHI 256(89.8%) and the remaining not paid. The main reasons for not WTP were thinking that , out pocket payment it is better to get effective treatments 16(5.6%) and the government do not cover all the needs services in CBHI scheme 13(4.6%).From the total respondents, 200(70.2%) were CBHI premium is affordable and 85(29.8%) were not affordable (Table, 2).

### **Health status and health care utilization characteristics of respondents**

Out of the total 285 study participants 44(15.4%) were started enrolling in CBHI before one year ago, 72(25.3%) before two years ago, 102(35.8%) three years ago and 67(23.5%) before four year ago. With regard to join CBHI, 251(88.1%) were voluntary and 34(11.9%) were mandatory or without needs. Among respondents, 266(93.3%) reported that enrolling in CBHI have advantages and the benefits were, 231(86.8%) reduce OOP expenditure, 22(8.3%) improve health status, 6(2.3%) reduce the risk of severity and 7(2.6%) were foster productivity. From 285 study participants, covering medical expense before join CBHI, 264(92.6%) were OOP, 14(4.9%) borrowing and 7(2.6%) were bring from lkub and idir.

The study indicated that, 256(89.2%) of respondents were renew your and family id number timely and the registration and renewal cost was, 285 (100%) coved by self-sponsored. The majority of study participants, 228(80%) were ill during the past one year. From this, 228(80%) were obtained treatment and 106(46.5%) were got treatment from private health center. Regarding the distance, from home of the household to reach health facility, 197(86.4%) were take > 60 minutes. From the total of 285 respondents, 123(43.2%) were CBHI package fulfil the needs of household treatment as well as 207(72.6%) study participants were reported that CBHI health facility provided good services. The perceived quality of health care service in the district was low. The main challenges use services in government health institution, 65(34.2%) mentioned that absence of available medicine, 62(32.7%) were poor service delivery, 50(26.3%) were lack of enough laboratory equipment, 8(4.2%) were health professionals do not have good behavior and 5(2.6%) were shortage of ambulance services (table, 3).

### **Perception and satisfaction of households towards join and pay for CBHI**

The majority of household heads responded that, 113 (39.6%) were agree with only the poor people join CBHI scheme. With respect to the happiness of the current premium to CBHI services, out of the total 285 respondents 175(61.4%) were agree. The study indicated that the health professional committed to improve health status of target population, 101(35.4%) respondents were agree and 103(36.1%) were neutral. To determine the overall level of perceptions with the CBHI scheme, internal consistency

(Cronbach's alpha) was first calculated for the scale items measuring perceptions: the items had a Cronbach's alpha of 0.414. The mean of attitude was  $7.95 \pm 2.297$  (range from 3 – 15).

The study show that, 101 (35.4%) of respondents were low satisfied and 14(4.9%) were very satisfied on health care utilization in CBHI schemes. From 285 study participants, 177(62.1%) were satisfied on willingness to pay for CBHI services and only 14(4.9%) of respondent were very high satisfied on laboratory services. To identify the overall prevalence of satisfaction in CBHI scheme, internal consistency was first calculated for the scale items measuring satisfaction: the items had a Cronbach's alpha of 0.697. The mean of attitude was  $8.32 \pm 2.298$  (possible range 3 – 15) (table, 4).

### **Independent Predictors of Willingness to Pay CBHI**

In bivariate analysis residence, religious, occupational status, premium affordable, enrolling in CBHI have advantage, distance household home to reach HF, join CBHI, time waited to see medical provide, CBHI package fulfil the needs of HH treatment, CBHI health facilities provided a good service and overall CBHI service levels were identified as candidate variables (p-value <0.25) and were considered for or enter to multivariate analysis (table, 5).

### **Multivariate analysis of factors associated with willingness of HH to pay CBHI**

In a multivariate analysis, place of residence, premium affordable, join CBHI voluntary , enrolling in CBHI have advantage and distance of household home to reach HF were significantly associated with willingness household to pay CBHI at (P-value <0.05) (table,6).

## **Discussion**

The study aimed to assess willingness of house hold heads to pay CBHI and its associated factors. Based on this, 89.8% of the household heads in the study area were willing to pay community based health insurance. The study finding is in line with the was done in selected districts in Jimma Zone, South west Ethiopia, 90 % (18).the finding higher than the studies was done in the area Oromiya region, 83.9% and north central Nigeria, 87% (3, 19).This study revealed that, the mean amount of money household heads willing to pay was 334.02 ETB ( $\pm 142.608$ ) per house hold per annual and the median amount was 280 birr. This greater than the study was carried out in the rural community of Fogera district, the mean amount of money household heads willing to pay was 187birr (+21) per house hold per annual and the median amount was 200 birr(1).

This study indicated that place of residence was significantly associated with willingness to pay CBHI. The study findings show that the house hold heads were live in rural area less likely willing to pay CBHI than compared to those who live in urban area (AOR, 0.299; 95% CI, 0.065-0.370) .this might be distance, income and knowledge of scheme the urban house holds better than the rural households . Premium affordable of the respondents was significantly associated with willingness to pay CBHI. The respondent revealed that ,CBHI premium affordable was more likely willing to pay CBHI scheme than compared to



those who were not community based health insurance premium affordable (AOR, 0.251; 95% CI, 0.103-0.610). This might be due to premium affordable are more likely to pay CBHI.

The study participant's join in CBHI voluntary was significantly associated with willingness to pay CBHI scheme. The house hold heads join in CBHI voluntary was more likely willing to pay CBHI compared to join in CBHI mandatory (AOR, 0.160; 95% CI, 0.062-0.412). This might be because of the primary objective of joining voluntary in the scheme is to get quality health service by paying CBHI. In this study, CBHI have an advantages were significantly associated with willingness to pay CBHI scheme. The study findings indicated that enrolling in CBHI have advantage more likely to pay CBHI than compared to CBHI did not have advantages (AOR, 0.089; 95% CI, 0.019-0.410). This might be enrolling CBHI the scheme have an advantage to get high quality health service at affordable costs as well as quality of health care at public health centers.

In this study, the place of residence was significantly associated with willingness to pay CBHI. The study revealed that the distance of household home to reach HF it takes < 60 minutes were more likely willingness to pay CBHI scheme than compared to it takes >60 minutes (AOR, 7.504; 95% CI, 2.566-21.941). This might be high accessibility of services. Like, comfortable road, transport services, get near health center are more willing to pay than the counter parts.

## Conclusions

The willingness of house hold heads to pay for the community-based health insurance was high. Residence, join CBHI, premium affordable, CBHI have an advantage and distance from households home to HF were more willing to pay CBHI schemes. The study indicated that high willing to pay and low CBHI package fulfil the needs of HH treatment as well as overall CBHI service level was poor. Absence of available medicine, lack of enough laboratory equipment, shortage of ambulance services, poor services delivery and health professional's behavior was the main challenges to use CBHI services in government health institution. Therefore, Mecha district CBHI coordinating office should be communicate national and international health organizations to scale up the community-based health insurance services in the scheme.

## Abbreviations

CBHI; Community Based Health Insurance; AOR: Adjusted Odds ratio; CI: Confidence Interval; HH: House Hold; COR: Crude Odds ratio; ETB: Ethiopian Birr; HF: Health Facility; WTP: Willingness to Pay; OOP: Out of Pocket; SPSS: Statistical Package of Social Sciences

## Declarations

**Ethical considerations:** Before conducted the actual data collection, ethical clearance was obtain from University of Gondar, Department of Population Studies and the formal letter was obtain from Amhara

Regional Health Bureau. The final written permission was obtained from Mecha district health office and this letter was used to all respective kebeles. The purpose of this study was explained to all study participants and verbal consent was taken from respondents and informed that all of their responses are confidential and anonymous as well as they would have the right to participate or not participate in the study.

**Consent for publication:** Not applicable.

**Availability of data and materials:** All the necessary data was included and analyzed for this study in SPSS.

**Competing interests:** The author declares that no conflict of interests.

**Funding:** There was no funded agency for this study.

**Author contributions:** GBD; Conceive proposal writing and design, data collection, analyzed the data and drafted of manuscript, interpretation of the data and the results, conducted at all stages of the research project. Finally the author read and approved the manuscript.

**Acknowledgement:** The authors would like to thank University of Gondar, Department of population studies, Amhara regional health bureau, Mecha district health office and Kebele administrative, data collectors as well as study participants all directly or indirectly participated in this study.

**Author details:** \*Department of Population Studies, Specialization Population and Reproductive Health, College of Social Sciences and Humanities, University of Gondar, Gondar Ethiopia

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## Tables

**Table 1: Demography and Socio-Economic Characteristics of Household heads in Mecha District, Northwest, Ethiopia, 2020/21**

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	Illiterate	126	44.2
	Read and write	85	29.8
	Primary school & above	74	26.8
Occupational status	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
Family members	1-3	136	47.7
	4-6	118	41.4
	7& above	31	10.9

Filed survey, 2020/21Table

2: The level of WTP for CBHI of Household heads in Mecha district, Northwest, Ethiopia, 2020/21

Variables	Responses	Frequency (N)	Percentage (%)
Willingness to pay for CBHI	Yes	256	89.8
	No	29	10.2
Reasons not willing to pay	Out of pocket payment is better	16	5.6
	Do not cover all the needs services	13	4.6
CBHI premium is affordable	Yes	200	70.2
	No	85	29.8

Filed survey, 2020/21

Table 3: Health status and health care utilization related characteristics of study participants in Mecha district, Northwest, Ethiopia, 2020/21

Variables	Responses	Frequency (N)	Percentage (%)
When you started enrolling 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
How to join in CBHI	Voluntary	251	88.1
	Mandatory	34	11.9
Enrolling in 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
Cover medical expense before join CBHI	Borrowing	14	4.9
	OOP	264	92.6
	Ikub & Idir	7	2.5
Renew your & family member id timely	Yes	256	89.2
	No	29	10.2
Who paid the registration & renewal id	Self-sponsor	285	100
CBHI cost covered by self-sponsor	240-350	200	70.2
	351-450	44	15.4
	451-1000	41	14.4
Experience of illness during the past one year	Yes	228	80
	No	57	20
get medical care	Yes	228	80
	No	57	20
Place of treatment	Public health center	40	17.5
	Private health center	106	46.5
	Government hospital	82	36
Distance household home to reach HF in minutes	<60 minutes	31	13.6
	>60 minutes	197	86.4
Time waited to see medical provide	<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
	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

Table 4: Perceptions and satisfactions of households towards join and pay CBHI in Mecha district, Northwest, Ethiopia, 2020/21

Variables	Response	Frequency (N)	Percentage (%)
Only poor people join CBHI scheme	Strongly agree	29	10.2
	Agree	113	39.6
	Neutral	32	11.2
	Dis agree	61	21.5
	Strongly dis agree	50	17.5
Happiness of current premium to CBHI services	Strongly agree	42	14.7
	Agree	175	61.4
	Neutral	11	3.9
	Dis agree	45	15.8
	Strongly dis agree	12	4.2
Health professional committed to improve health status of target population	Strongly agree	31	10.9
	Agree	101	35.4
	Neutral	103	36.1
	Dis agree	35	12.3
	Strongly dis agree	15	5.3
Satisfaction of health care use in CBHI scheme	Very high satisfied	16	5.6
	Satisfied	75	26.3
	Neutral	79	27.7
	Low satisfied	101	35.4
	Very low satisfied	14	4.9
Satisfaction of willingness to pay for CBHI services	Very high satisfied	36	12.6
	Satisfied	177	62.1
	Neutral	19	6.7
	Low satisfied	46	16.1



	Very low satisfied	7	2.5
Satisfied with the laboratory services	Very high satisfied	14	4.9
	Satisfied	83	29.1
	Neutral	112	39.3
	Low satisfied	67	23.5
	Very low satisfied	9	3.2

Filed survey, 2020/21

Table 5: Bivariate analysis of factors associated with willingness of households to pay CBHI in Mecha district, Northwest, Ethiopia, 2020/21

Variables		Willingness to Pay CBHI				
		Yes	No	X <sup>2</sup>	df	P-value
Place of residence	Rural	215	16	12.267	1	0.000
	Urban	41	13			
Religious	Orthodox	227	19	9.945	1	0.002
	Others	29	10			
Occupational status	Farming	164	9	14.170	4	0.007
	House wife	19	3			
	Gov't employee	12	3			
	Laborer	26	9			
	Trade	35	5			
CBHI premium is affordable	Yes	190	10	17.799	1	0.000
	No	66	19			
Join in CBHI	Voluntary	235	16	29.862	1	0.000
	Mandatory	21	13			
Enrolling in CBHI have advantage	Yes	246	20	26.604	1	0.000
	No	10	9			
Distance HH home to reach HF in minutes	<60 minutes	23	8	9.632	1	0.002
	>60 minutes	184	13			
Time waited to see medical provide	<30 minutes	7	0	11.290	5	0.046
	30-60 minutes	39	4			
	1- 3 hours	67	11			
	3-6 hours	53	6			
	6 hours &more	36	0			
	More than one day	5	0			
CBHI package fulfil the needs of HH treatment	Yes	116	7	3.937	1	0.047
	No	140	22			
CBHI health facilities provided a good service	Yes	191	16	4.021	1	0.045
	No	65	13			
Overall CBHI service level	Poor	165	25	4.611	1	0.032
	Good	91	4			

Filed survey, 2020/21

Table 6: Bivariate and multivariate analysis of factors associated with willingness of households to pay CBHI in Mecha district, Northwest, Ethiopia, 2020/21

Variables	Willingness to pay CBHI		Odds Ratio(OR)		
	Yes	No	B	COR(95%CI)	AOR(95%CI)
<b>Place of residence</b>					
Rural	215	16	1.449 (-1.207)	0.235(0.105-0.525) **	0.299(0.065-0.370) *
Urban	41	13		1	1
<b>Religious</b>					
Orthodox	227	19	-1.416(-0.129)	0.243(0.103-0.572)**	0.879(0.189-4.087)
Others	29	10		1	1
<b>Educational status</b>					
Illiterate	118	8	-1.049(0.352)	0.350 (0.136 0.902)*	1.422(0.403-5.021)
Read & write	76	9	-0.491(0.275)	0.612(0.242-1.546)	1.317(0.430-4.034)
Primary school & Above	62	12		1	1
<b>CBHI premium is affordable</b>					
Yes	190	10	1.699(1.383)	0.183(0.081-0.413)**	0.251(0.103-0.610) **
No	66	19		1	1
<b>Join in CBHI</b>					
Voluntary	235	16	2.207(1.835)	0.110(0.047-0.259)**	0.160(0.062-0.412)**
Mandatory	21	13		1	1
<b>Enrolling in CBHI have advantage</b>					
Yes	246	20	2.404 (2.422)	0.090(0.033-0.248)**	0.089(0.019-0.410) **
No	10	9		1	1
<b>Distance HH home to reach HF</b>					
<60 minutes	23	8	1.594(2.015)	4.923(1.845-13.139) **	7.504(2.566-21.941)**
>60 minutes	184	13		1	1
<b>CBHI package fulfil the needs of HH treatment</b>					
Yes	116	7	0.957(-0.131)	0.384(0.158-0.931)*	0.877(0.268-2.868)
No	140	22		1	1
<b>CBHI health facilities provided a good service</b>					
Yes	191	16	-0.870(0.102)	0.419(0.191-0.917) *	1.107(0.318-3.849)
No	65	13			1
<b>Overall CBHI service level</b>					
Poor	165	25	1.237(0.908)	3.447(1.164-10.212) *	2.480(0.628-9.799)
Good	91	4		1	

NB 1=reference category, COR=Crude odds ratio, AOR=Adjusted odds ratio\*P-value  
<0.05 \*\*P Value<0.01.