Community Based Health Insurance Utilization and Associated Factors among Informal Workers in Gida Ayana District, Oromia Region, West Ethiopia

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Abstract

Background: Health insurance reduces impoverishment, inequitable access, and utilization of healthcare attributed to out of pocket healthcare expenditure. However, the available evidence on the magnitude and the factors associated with the utilization by households is rare, which makes it difficult to take remedial action for its sustainability and effectiveness. Therefore, the aim of this study was to assess community based health insurance utilization and the associated factors among informal workers in Gida Ayana district, east Wollega Zone, west Ethiopia.

Methods: A community based cross-sectional study was conducted on 644 households in February 2018. Multistage sampling technique was used to select households. Data were collected using pretested and structured questioner and analyzed using SPSS Version 22. Bivariate and multivariable logistic regressions were computed to identify the factors associated with community based health insurance utilization. A p-value of < 0.05 with 95% confidence interval was used to declare the level of statistical significance.

Results: The magnitude of community based health insurance utilization was 27.5% (95% CI: 23.8, 31.2). Older ages (41-50) (AOR=3.26; 95% CI:1.80, 5.90), having formal education (AOR=5.8; 95% CI: 3.38, 10.00), being farmer (AOR= 2.9; 95% CI:1.40, 6.00), households with better wealth status (AOR=2.40; 95% CI:1.40, 4.26), disagreement on affordability of premium (AOR=0.50; 95% CI:0.27,0.97), good knowledge (AOR=2.30; 95% CI:1.40, 3.85), self-assessed health status as poor (AOR=4.2; 95% CI:2.20, 8.00) and being neutral on trustworthiness of officials (AOR=0.43; 95% CI:0.20, 0.76) had statistically significant association with community based health insurance utilization.

Conclusion: The magnitude of community based health insurance utilization in this study was low. Older ages, having formal education, better wealth status, being farmer, having good knowledge about community based health insurance utilization, self-assessed health status as poor and being neutral on trustworthiness of officials were significantly associated with community based health insurance utilization. The district's health office should disseminate information, deeply discuss the working principles and reduce premiums payments of community based health insurance to enhance the utilization.

Keywords: *Gida Ayana; Informal Workers; Health Insurance; Utilization, West Ethiopia.*

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Introduction

Globally, annual estimates show that 44 million households (more than 150 million individuals) face catastrophic expenditure while 25 million households (more than 100 million people) are impoverished because of direct healthcare payments. Sadly, over 90% of these health related shocks occur in low and middle income countries (LMICs) (Xu K *et al*., 2007), where 90% of the global burden of diseases occur, but contribute only less than 15% of the global health expenses (Gotret, 2006). Low and middle income countries are striving to reform their health care financing strategies to attain universal health coverage with the goals of risk protection

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and provision of health care services at affordable cost (WHO, 2005). Moreover, the world health assembly urge the member states to switch to prepayment schemes to cover health care cost with the aims of financial protection or avoidance of catastrophic and impoverishing health expenditure attributed to seeking health care (WHO, 2010).To these ends, health insurance is supposed to provide effective and efficient health services for citizens, especially for the poor and vulnerable ones (McIntyre, 2007).

Community based health insurance (CBHI) scheme utilization has been growing in Sub-Saharan Africa and other regions of the world (Bennett, 2004). Its utilization ranged from 1.5 to 2% in Uganda, Guinea, Kenya, Cameroon and Benin from 2005 to 2007 (MOH Kenya, 2006, Soors *et al*., 2010, Basaza *et al*., 2007). A higher utilizations have been reported from studies conducted in Nigeria (17.9% and 48.4%) (Soors *et al*., 2010; Chakova *et al*., 2008).

Different associated factors have been identified, among these are married marital status (Miana *et al*., 2016; (Kimani *et al*., 2014) and higher estimated income of households (Vellakka, 2013; Gobir *et al*., 2016).

The government of Ethiopia has started to address the problems of out of pocket (which is 34% in Ethiopia) (FMOH, 2014). To improve it, the government has designed CBHI, which enrolls part of the community in informal work in rural and urban areas. It is part of the government's broader health care financing reform which aims to improve quality, financial access and coverage of health services by identifying alternative healthcare resources (USAID, 2011). The CBHI pilot was begun in thirteen districts selected from four regions (Oromia, SNNPR, Amhara and Tigray) regional states in the mid-2011 (FMOH, 2010; FMOH, 2015/16-2019/20). There was a report of health care utilization per capita increase by two fold after CBHI was implemented in these regions (EHIA, 2015). However, there is scarce report about the magnitude of its utilization. Evidences regarding community based health insurance (CBHI) utilization and its associated factors at district and national level are essential for program officials and decision makers. But it is rare (Mebratie *et al*., 2015). Thus this study was intended to find out the CBHI utilization and the associated factors among informal workers in Gida Ayana district.

Materials and Methods

Study design and area

A cross-sectional study was conducted on household heads or spouses with informal work at Gida Ayana district, West Ethiopia in February 2018. Gida Ayana is located about 430 Km to the west of Addis Ababa. The population of the district was 158,782, of whom 49% of them were male and 51% of them were female. It is one of the district among three districts selected from east Wollega zone to pilot CBHI since 2014. It has 28 kebeles (the smallest administrative unit in Ethiopia) and 29,644 households. The district has 22 health posts, 5 health centers, 1 hospital and 26 private clinics (Gida Ayana District Health Office, 2017).

Sample size determination and sampling techniques

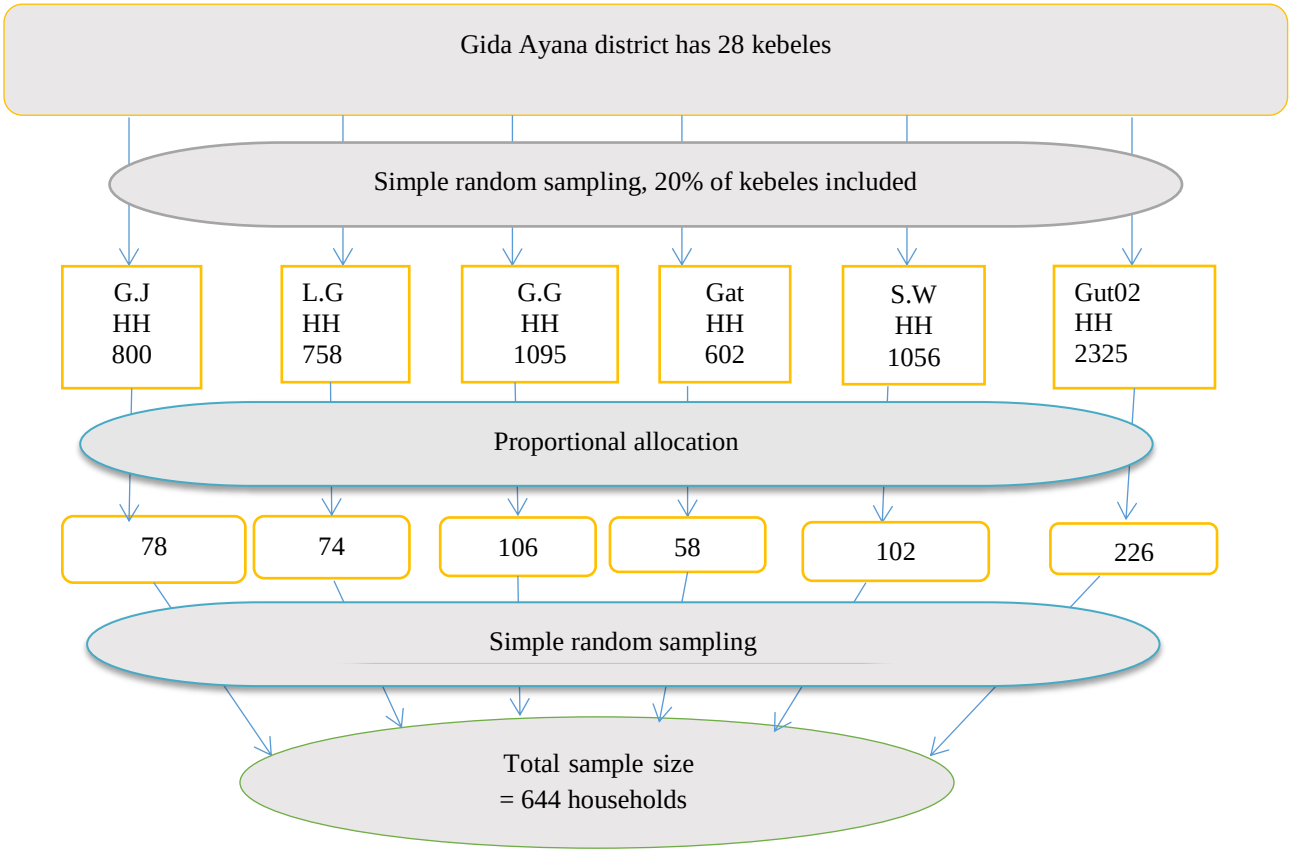
The sample size for this study was determined using statistical Epi Info 7 Stat calculator computer software by double population proportion formula at 95% confidence interval (CI) with 80% power; published report of 67% and 80% CBHI utilization among those with income of < 1100 and 1100-4300 Ethiopian Birr (ETB) per year (Melaku *et.al*., 2014); design effect of 1.5 and 10% none response rate. The final sample size was 644.

Multistage sampling technique was applied to allocate the final sample size. Gida Ayana district has 28 kebeles and 20% of the kebeles were included as used in other previous study (Samuel *et.al*, 2017). First six kebeles were selected by simple random sampling technique. Then, the calculated final sample size was proportionally allocated based on total number of households in each selected kebeles. Finally, households having informal work were selected by simple random sampling using household heads/spouses having informal work from registration lists of informal workers obtained from the selected kebele administration (Figure 1).

Data collection method

Data were collected by six diploma teachers using a pre tested structured questionnaire adapted from Ethiopian Demographic and Health Survey (EDHS) and Ethiopian Economic Association (EEA) (EDHS, 2016 and EEA, 2013). The questionnaire contains socio-demographic, health and knowledge about CBHI related

questions. The questionnaire was first prepared in English language and translated into Afaan Oromoo by language experts, and back translated into English.



Key: G.J-Gaba Jimata, L.G-Lalise Gudina, G.G-Gobu Guda, Gat-Gatira, S.W-Sirba Wadessa and Gut02- Gutten 02 kebele,HH-Households

Figure 1: Schematic presentation of the sampling method to assess community based health insurance utilization and associated factors in Gida Ayana District, 2018.

Data quality control

The data collectors and the supervisors were trained for two days on interviewing techniques, maintaining confidentiality and how to administer the questionnaire. Five percent (n=30) questionnaire were pretested outside of the study area before the actual data collection. Based on the findings, vague terms, phrases and confusing questions were modified. The retrieved data were checked for completeness daily during the data collection and at a stage before the data entry. Double data entry was done to avoid or minimize data entry errors.

Data analysis

Data were checked for completeness and consistency, coded and double data entered into Epi Data Version 3.2 and exported to Statistical Package for Social Science (SPSS) Version 22 for analysis. Logistic regressions were used to identify the factors associated with CBHI utilization. The variables with p-value less than 0.25 in the bivariate logistic regression were tested by multivariable logistic regression analysis. Variable with p-values less than 0.05 at 95% confidence interval in multivariable analysis were considered statistically significant.

Operational definition

Community based health insurance utilization: Households that are members of CBHI as verified by their renewed membership cards and new CBHI members are categorized as utilizers, but those that are not members and those households dropped out are categorized as non-utilizers of the CBHI (CBHI scheme guideline, 2017).

Good knowledge: Study subjects who scored the mean and above on six CBHI knowledge related questions.

Poor knowledge: Study participants who scored below the mean on CBHI knowledge questions.

Informal workers: Households whose livelihood depended on agriculture, trade, daily labourer and private microbusinesses in rural and urban areas (CBHI scheme guide line, 2017).

Trust worthiness: Measured by five item Likert scale and finally merged to three to assess the characteristic.

Presence of Chronic disease in the household member: When one of the household family member had disease for more than one month (Melaku *et al*., 2014).

Household wealth index: Households were given scores based on the number and kinds of consumer goods they own. Wealth quintiles are compiled by assigning the household score to each usual household member, ranking each person in the household population by her or his score (EDHS, 2016).

Ethical consideration

The study was ethically approved by Institutional Health Research Ethics Review Committee of the College of Health and Medical Sciences, Haramaya University. Gida Ayana district administrations wrote letter to each selected *kebeles* in order to facilitate this study. The study participants were informed about the study objectives, purposes, procedures and enrolled in this study after giving their signed consent.

Results

Socio-demographics characteristics of the study participants

A total of 631 households participated in the study, with a response rate of 98%. The mean and standard deviation age of the study participants was 44.60 ± 11.84 years respectively. The age of respondents ranges from 21-78 years. Some of the study participants were <40 years (44.8%), male (66.4%), married (90.4%) and farmer (68.8%), and unable to read and write (40.7%). The mean household family size of the respondents was 5.94, with SD of ± 2.19 (Table 1).

Table 1: Socio-demographic characteristic of the study participants in Gida Ayana district, 2018.

Attributes	Categories	Frequency (%)
Age	< 40	283 (44.8)
	41-50	169 (26.8)
	51-60	124 (19.7)
	>60	55 (8.7)
Gender	Male	419 (66.4)
	Female	212 (33.6)
Marital status	Married	570 (90.43)
	Separated	21 (3.33)
	Divorced	9 (1.43)
	Widowed	31(4.91)
Residence	Urban	202 (32)
	Rural	429 (68)
Occupation	House wife	69 (10.9)
	Farmer	432 (68.8)
	Merchant	109 (17.30)
	Other	19 (3)
Educational status	Unable to read and write	257 (40.73)
	Able to read and write	223 (35.34)
	Primary	134 (21.33)
	Secondary and above	17(2.7)

**Other: Carpenter and daily laborer.*

Community based health insurance utilization

The overall CBHI utilization in this study was 174 (27.5%). Among those utilizing CBHI, 16 (2.5%) were identified as the poorest and sponsored by the government. The most common reason for not utilizing CBHI was lack of knowledge about CBHI (58%), unaffordability registration and premium fees (11.1%) and low quality of health care services (8.7%) (Figure 2). Among those not utilizing CBHI, 44 (7%) of the households were reported dropped out of CBHI membership.

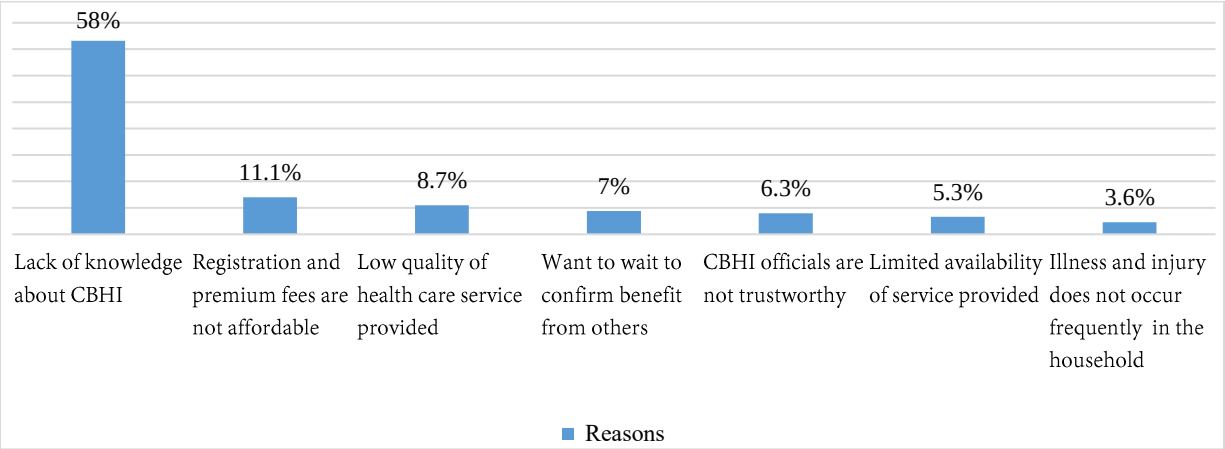


Figure 2: Reasons for not using CBHI in Gida Ayana district, 2018.

Factors Associated with CBHI utilization

In the bivariate analysis CBHI utilization was associated with the study participants age, sex, household family size, educational status, occupation, knowledge on CBHI, wealth index, presence of chronic illness in the household, self-assessed health status, affordability of premium and trustworthiness of the CBHI officials.

In the multivariable logistic regression analysis: age of the household heads, with 41-50 years (AOR=3.26; 95% CI:1.80,5.90) and 51-60 years (AOR=6.00; 95% CI:3.18, 11.30), formal educational level (AOR=5.80; 95% CI:3.38, 10.00), farmer in occupation (AOR=2.90; 95 CI: 1.40, 6.00), good knowledge on CBHI (AOR=2.30; 95% CI:1.40, 3.85), rich wealth index (AOR=2.40; 95% CI: 1.40, 4.26), poor self-assessed household health status (AOR=4.20; 95% CI:2.20,8.00) were more likely to utilize CBHI. However, the households that disagreed (AOR=0.52; 95% CI: 0.32, 0.85) and neutral (AOR=0.15; 95% CI: 0.09, 0.23) about the affordability of premium and disagreed (AOR=0.98; 95% CI: 0.58, 1.662) and neutral (AOR=0.39; 95% CI: 0.258, 0.58) about trustworthiness of CBHI officials were less likely to utilize CBHI (Table 2).

Discussion

In this study the magnitude of CBHI utilization was 27.5%. This finding is similar to report from Mali (31%) (Onwujekwe *et al*., 2009). However is lower than findings from Ethiopia; Dimbitchu and Damboya (67%), South Achefere (62%), Fogera (38%) (EHIA, 2015), Deder (35%), Yirgalem Woreda (100%) and Thehulder (91%) (USAID, 2014) and abroad in Nigeria (48.4%) (Onwujekwe *et al*., 2009), Ghana (34%), Senegal (50%) (Chakova *et al*., 2008). This difference might be due to difference in sociocultural and economy of the society.

In this study, the household heads' age was significantly associated with CBHI utilization. Accordingly household heads with age group of 41-50 and 51-60 were about 3 and 6 times more likely linked with CBHI utilization respectively. This result is supported by a study conducted in Kenya (Kimani *et al*., 2012). Older individuals might have relatively weaker immunity and prone to sickness. This might increase the likelihood of using CBHI. However, this study finding is in contrary to report from Thehuldere and Debub Bench District, Ethiopia (Samuel *et al*, 2017; Melaku *et al*., 2014) where older ages had lower utilization CBHI.

In the present study, participants having formal education were about 6 times more likely associated with CBHI uptake than those with no formal education. This finding is consistent with reports from Kenya and rural Senegal (Maina *et al*., 2016 and Jutting, 2003). Educated people might understand the benefits packages, working principles and mechanisms of risk sharing in health insurance which can resulted in increase of CBHI. This study revealed that occupational level of the respondents had statistically significant association with CBHI use. The farmer respondents were about 3

times more likely to use CBHI than the housewives. This finding is similar to Edo state of Nigeria (Oriakhi *et al*., 2012).

Table 2: Factors associated with CBHI utilization among informal workers in Gida Ayana district, Oromia region, West Ethiopia, 2018.

		CBHI Utilization			
Variables	**Categories**	**Yes (%)**	**No (%)**	**COR(95% CI)**	**AOR(95% CI)**
Sex	Male	135(32.2)	284(67.8)	2.10 (1.409,3.156)	1.17(0.65,2.11)
	Female	39(18.4)	173(81.6)	1	1
Family size	< 5	49(18.4)	217(81.6)	1	1
	>5	125(34.2)	240(65.8)	2.30(1.581,3.366)	1.41 (0.85, 2.30)
Age	< 40	38(13.4)	245(88.6)	1	1
	41-50	60(35.5)	109(64.5)	3.50 (2.23,5.649)	3.26 (1.80,5.90) **
	51-60	61(49.2)	63(50.8)	6.20 (3.822,10.196)	6.00 (3.18, 11.30) **
	>60	15(27.3)	40(72.7)	2.40 (1.22,4.795)	2.50 (.98, 6.50)
Education	Formal education	85(56.3)	66(43.7)	5.66 (3.80,8.402)	5.80 (3.38, 10.00) **
	No formal education	89(9.5)	391(81.5)	1	1
Occupation	House wife	13(18.8)	56(81.2)	1.40 (0.649,3.103)	1.50 (0.50, 4.30)
	Farmer	143(32.9)	291(63.1)	3.00 (1.75,5.138)	2.90 (1.40, 6.00) *
	Merchant and others	18 (14.1)	110(85.9)	1	1
Knowledge on	Poor	66(17.2)	317(82.8)	1	1
CBHI	Good	108(43.5)	140(56.5)	3.70 (2.57,5.34)	2.30 (1.40, 3.85) **
Wealth index	Medium	36(18.3)	161(81.7)	1	1
	Poor	24(15.1)	135(84.9)	0.80 (0.552,1.40)	0.88 (0.4, 1.90)
	Rich	114(58.5)	161(41.2)	3.20 (2.052,4.882)	2.40 (1.40, 4. 26) *
Presence of chronic disease in the household	Yes	43(35)	80(65)	1.50 (1.016,2.356)	1.40 (0.8,2.67)
	No	131(25.8)	377(74.2)	1	1
Self-assessed household health status	Very good	57(21.9)	203(78.1)	1	1
	Good	59(22.1)	208(77.9)	1.00 (0.669,1.526)	1. 16 (0.67,2.00)
	Poor	58(55.8)	46(44.2)	4.50 (2.762,7.300)	4.20 (2.20,8.00) **
Affordability of premium	Disagree	43(36.1)	76(63.9)	0.52 (0.32,0.85)	0.50 (0.27, 0.97) *
	Neutral	49(13.8)	305(86.2)	0.15 (0.096,0.230)	0.24 (0.13, 0.42) **
	Agree	82(48.1)	76(51.9)	1	1
Trustworthiness of CBHI officials	Disagree	26(33.8)	51(66.2)	0.98 (0.58, 1.662).	1.10 (0.5, 2.30)
	Neutral	40(16.8)	198(83.2)	0.39 (0.258,0.589)	0.43 (0.20, 0.76) *
	Agree	108(34.4)	208(62.1)	1	1

*Significant association ** = P value < 0.001, * = P value < 0.05*

This may be due to scheme's interval of payment which is once in a year. The harvesting season might suit for the farmer to buy CBHI that suits farmers to buy the scheme.

In the present study participants having good knowledge of CBHI were about two times more likely to utilize CBHI than their counter group. This finding is supported by study conducted in rural Kenya (Maina *et al*., 2016). This may be attributed to the fact that knowledge changes the health seeking behavior of the individuals and enhances the understanding of the pros and cons of the health service program leading to utilization.

Moreover, the wealth index of the households in this study had statistically significant association with the

community based health insurance utilization. The households in rich wealth index had 2.4 times the probability of up taking health insurance. This finding was in concordance with studies conducted Ethiopia (Melaku e*t al.,* 2014) and Kenya (Kimani *et al*., 2012).

In this study, household heads that described their family health status as poor were about 4 times more likely to uptake CBHI compared to those who claimed their family health status as very good. This was supported by finding from this study which indicates those hold having chronic diseases in their family have more CBHI utilization. But, there controversial report from other studies conducted in Ethiopia. for instance a report from piloted projects found that there is no evidence of households self-assessment of health status has bearing effect on CBHI utilization (Mebratie *et al*., 2015), However , report from Debub Bench district found that house households self-reported health status has negative association with willingness to join CBHI scheme (Melaku *et al*.,2014).

Affordability of the premium was negatively associated with CBHI utilization in this study. The households that disagreed and neutral with premium affordability were about 50% and 76% less likely to utilize CBHI than those that agreed, respectively. This finding is supported by the study conducted by (Samuel *et al*, 2017) in Thewuledere district, Ethiopia. Affordability issue is related to ability to pay the premium, so the households that could not pay the premium fee ended up in lesser utilization of CBHI.

Trustworthiness of the CBHI officials had negative association with CBHI utilization. This evidence was supported by the study conducted in Edo state of Nigeria, where the respondents deterred form participation in government program were attributed to lack of trust in officials managing the program (Oriakhi *et al*., 2012).

Strength and limitation of the study

This study was community based which might enable the generalization of its findings to the source population. However, study participants might had recall / social desirability bias, since they were asked about past events. In addition, most of literatures regarding CBHI in developed countries were focused on social health insurance which makes comparisons difficult

Conclusion

Community based health insurance utilization in this study was low. The utilization was positively associated with relatively older ages, better educated, having good knowledge of CBHI, being farmer and households with better wealth status, self-assessed health status as poor, but negatively associated with affordability of premium and trustworthiness of CBHI management officials. Therefore, the woreda health office and concerned officials to the program should disseminate information about CBHI and self-health assessment in order to improve the awareness of the community. In addition, they must work on subsidization of premiums payments and take measures on improving trustworthiness of CBHI management officials.

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Competing interests

We declare that we have no conflict of interest to disclose.

Author's contribution

BN, YD and TG designed the study, participated in data collection, analysis, interpretation, and write-up, drafted the manuscript and critically revised the manuscript. All authors read and approved the final manuscript.

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