

Research Article

Assessments of Healthcare Service Utilization and Associated Factors Among Members and Non-members of Community-based Health Insurance in Addis Ababa Ethiopia

Abdulwahid Abdo^{*} , Getabalew Endazenaw 

Department of Public Health, Yekatit 12 Hospital Medical College, Addis Ababa, Ethiopia

Abstract

Background: Community-based health insurance is designed to provide financial protection and reduce out-of-pocket payments for health care. Direct out-of-pocket payments for health care restrict access to health services and compromise household wellbeing. **Objective:** To assess healthcare service utilization and associated factors among members and non-members of community-based health insurance in Addis Ababa, Ethiopia, in 2025. **Method:** A community-based comparative cross-sectional study was conducted from March 6 to April 8, 2021. Multistage sampling was used to select 366 households (183 insured, 183 uninsured). Data were collected through face-to-face interviews using a structured questionnaire. Data entry and analysis were performed using EPI INFO v7 and SPSS v25, respectively. Descriptive statistics, two-sample t-tests, and logistic regression were used. **Results:** A total of 354 households (178 insured, 176 uninsured) participated, yielding a response rate of 97.5%. Healthcare service utilization was significantly higher among CBHI members (73.6%) compared to non-members (55.7%) ($t = -3.579$, $p < 0.05$). For CBHI members, significant predictors included sex of household head and presence of illness episode. For non-members, sex, marital status, and chronic illness were significant predictors. **Conclusion:** CBHI membership is significantly associated with higher healthcare service utilization. Expanding CBHI coverage and addressing financial and perceptual barriers are recommended to improve healthcare access.

Keywords

Healthcare Utilization, Community-based Health Insurance, Addis Ababa, Ethiopia, Health Services, Insurance Membership

1. Introduction

Achieving Universal Health Coverage (UHC) is a major global health policy goal and a key target of the Sustainable Development Goals, yet a large proportion of the world's population still lacks access to essential health services [1, 2]. To move toward UHC, many developing countries have implemented health insurance reforms focused on increasing prepaid revenues, pooling

risks, and improving service purchasing mechanisms [3]. However, direct out-of-pocket (OOP) payments remain a major barrier to healthcare access and continue to negatively affect household wellbeing [4].

Community-Based Health Insurance (CBHI) is a not-for-profit insurance scheme primarily designed for informal sector populations,

^{*}Correspondence: Abdulwahid Abdo (abdulwahidabdo4@gmail.com)

Received: 26 January 2026; **Accepted:** 21 February 2026; **Published:** 14 March 2026



Copyright: © The Author(s), 2026. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

financed through regular member contributions and managed with strong community involvement [5, 6]. CBHI schemes are based on principles of risk pooling and social solidarity and aim to reduce OOP payments while improving financial protection and healthcare utilization [7]. Despite documented benefits, low enrollment threatens the sustainability of CBHI schemes in many developing countries [8].

In Ethiopia, healthcare financing relies on multiple sources, including donors, government funding, and OOP payments, with OOP expenditure remaining substantial [9]. CBHI has emerged as an important alternative for improving equity and access to primary healthcare, particularly for low-income and informal sector populations [5]. Evidence from several countries shows that CBHI membership is associated with higher healthcare utilization compared to non-members [10-12]. Similar findings have been reported in Ethiopia, where healthcare utilization among CBHI member households is consistently higher than among non-member households [13, 21, 22].

High OOP spending continues to expose households to financial catastrophe, impoverishment, and long-term socioeconomic consequences, including debt, asset depletion, and delayed or forgone healthcare [14-16]. Although studies from countries such as India and Rwanda indicate that CBHI increases healthcare utilization [17, 18], significant effects vary across contexts [19, 20]. In the lower socioeconomic group of the society, out-of-pocket medical expenditure results in massive financial barriers and impoverished life in the households [23]. The study conducted on the impact of health insurance on healthcare utilization patterns in Vietnam revealed that health insurance increased the number of outpatient visits and patient admission for insured than non-insured [24]. Similarly, Study conducted on the effect of health insurance on health-seeking behaviour in Saudi Arabia showed that health insurance increase health care medical check-up [25]. A study conducted on the impact of community-based health insurance schemes on healthcare utilization and cost of care in Ethiopia shows CBH enrolment increase 30-41% outpatient health care and 45%-64% frequency of visit [26]. These variations highlight the importance of context-specific assessments.

In Ethiopia, CBHI was introduced to improve healthcare utilization and reduce socioeconomic inequalities in access to care [15]. Although the scheme has been implemented in Addis Ababa since 2017, its contribution to healthcare service utilization in the city remains insufficiently explored. Therefore, this study aims to assess healthcare service utilization among CBHI member and non-member households in Addis Ababa and identify associated factors to inform policymakers, program designers, and healthcare implementers.

2. Materials and Methods

A community-based comparative cross-sectional study was conducted in Addis Ababa from March 6 to April 8, 2021. A multistage sampling technique was used to select 366 households (183 insured and 183 uninsured). Data were collected through face-to-face interviews using a pre-tested, structured questionnaire. The questionnaire covered socio-demographic characteristics, health service utilization, reasons for not seeking care, and health facility preferences. Data were entered into EPI INFO version 7 and analyzed using SPSS version 25. Descriptive statistics were used to summarize data. A two-sample t-test was used to compare proportions of healthcare utilization between groups. Logistic regression was performed to identify predictors of healthcare utilization, with adjusted odds ratios (AOR) and 95% confidence intervals (CI) reported. A p-value < 0.05 was considered statistically significant.

3. Results

3.1. Socio-demographic Characteristics of Respondents

A total of 354 households (178 insured and 176 uninsured) were interviewed, giving a response rate of 97.5%. The mean age of respondents was 49 years (SD = 14.5). The majority of participants were married: 116 (65.2%) among insured and 108 (61.4%) among uninsured households (Table 1).

Table 1. Socio-demographic characteristics of respondents, Addis Ababa, Ethiopia, April 2021.

		CBHI Membership		Total (354)
		non-member (n=176)	Member (n=178)	
age category	18-35	49(27.8)	36(20.2)	85(24)
	36-55	84(47.7)	79(44.3)	163(46)
	>=56	43(24.4)	63(35.5)	106(30)
sex of Head of HH	FEMALE	75(42.6)	107(60.1)	182(51.4)

		CBHI Membership		Total (354)
		non-member (n=176)	Member (n=178)	
The educational level	MALE	101(57.4)	71(39.9)	172(48.6)
	cannot write and read	19(10.8)	22(12.4)	41(11.6)
	primary education	57(32.3)	43(24.2)	100(28.2)
	Read and write	40(22.7)	47(26.4)	87(24.6)
	secondary and above	60(34.1)	66(37)	126(35.6)
Marital status	Divorced	19(10.8)	15(8.4)	34(9.6)
	Married	108(61.4)	116(65.2)	224(63.3)
	Single	26(14.8)	18(10.1)	44(12.4)
	Widowed	23(13.1)	29(16.3)	52(14.7)
Occupation	Daily labourer	64(36.4)	63(35.4)	127(35.9)
	Housewife	25(14.2)	37(20.8)	62(17.5)
	Merchant	66(37.5)	53(29.8)	119(33.6)
	Unemployed	21(11.9)	25(14)	46(13)
Family size	<5	139(79)	121(68)	260(75.2)
	=>5	37(21)	57(32)	94(26.6)
Income	<2500	113(64.2)	141(79.2)	254(71.8)
	>=2500	63(35.8)	37(20.8)	100(28.2)

Note: percentage in parentheses

3.2. Action Taken Against Illness

Among households experiencing illness, 84 (77%) of CBHI members and 46 (67.6%) of non-members utilized healthcare services on the same day of illness.

3.3. Reasons for Not Seeking Healthcare

The main reasons for not seeking healthcare were: illness not serious (53% of members; 35.4% of non-members), and lack of money (39.5% of non-members). Other reasons included poor quality of health service and use of home remedies among members (23.5%) (Table 2).

Table 2. Reasons for not seeking healthcare at the time of illness, Addis Ababa, April 2021.

		CBHI Membership		Total (82)
		non-member (n=48)	Member (n=34)	
Illness not serious		17(35.4)	18(53)	35(43)
No money		19(39.5)	0	19(23)
No insurance card		2(4.1)	0	2(2.5)
Had my own medicine/homemade remedies		10(20.8)	8(23.5)	18(22)

	CBHI Membership		Total (82)
	non-member (n=48)	Member (n=34)	
Poor quality of service	0	8(23.5)	8(9.5)
Note: percentage in parentheses			

Most respondents preferred health centers: 78 (71.4%) among members and 31 (45.58%) among non-members.

3.4. Distance to Health Facilities

A majority of participants reported being able to reach a nearby health facility within less than 1 hour: 173 (97.2%) members and 164 (93.2%) non-members (Table 3).

Table 3. Time taken to reach nearest health facility, Addis Ababa, April 2021*.

Membership status	Distance	N%
non-member	>=1hr	12(6.8)
	<1hr	164(93.2)
	Total	176(100.0)
Member	>=1hr	5(2.8)
	<1hr	173(97.2)
	Total	178(100.0)
Note: percentage in parentheses		

CI: 48.2–62.9).

3.5. Healthcare Service Utilization

3.5.1. Magnitude of Utilization

The overall healthcare service utilization was 64.7% (95% CI: 59.5–69.5). Utilization among CBHI members was 73.6% (95% CI: 66.5–79.6), and among non-members 55.7% (95%

3.5.2. Comparison of Utilization Between Members and Non-members

Healthcare service utilization was significantly higher among CBHI members (73.6%) than non-members (55.68%) ($t = -3.579$, $df = 352$, $p < 0.05$) (Table 4).

Table 4. Comparison of healthcare utilization among CBHI members and non-members, Addis Ababa, April 2021.

Variables	N	Mean	Df	T	Sig.(2-tailed)
Non- member	176	0.5568	352	-3.579	.000
Member	178	0.7360			

3.6. Predictors of Healthcare Service Utilization

3.6.1. Predictors Among All Respondents

Bivariate analysis identified age, sex, marital status, education, occupation, income, perceived quality and cost, presence of chronic illness, current health status, and CBHI membership as associated with healthcare utilization ($P \leq 0.25$).

Key findings from logistic regression (AOR, 95% CI):

- 1) Male household heads: 51.2% lower odds compared to female heads (AOR=0.488, 95% CI: 0.292–0.816)
- 2) Age 18–35: 64.3% lower odds compared to ≥ 56 (AOR=0.357, 95% CI: 0.178–0.791)
- 3) Married heads: 80.5% lower odds compared to single (AOR=0.195, 95% CI: 0.068–0.566)
- 4) Good perceived quality: 2.26 times higher odds (AOR=2.260, 95% CI: 1.358–3.762)
- 5) No chronic illness: 58.6% lower odds (AOR=0.414, 95% CI: 0.230–0.744)
- 6) Non-CBHI member: 42.1% lower odds (AOR=0.579, 95% CI: 0.351–0.955)

3.6.2. Predictors Among CBHI Members

Significant predictors for CBHI members included sex, illness episode, and perceived quality. Key findings:

- 1) Male heads: 63.3% lower odds (AOR=0.366, 95% CI: 0.177–0.755)
- 2) No illness episode: 76.3% lower odds (AOR=0.237, 95% CI: 0.091–0.616)

3.6.3. Predictors Among Non-members

For non-members, predictors included age, sex, marital status, occupation, education, perceived healthcare cost, and chronic illness. Key findings:

- 1) Male heads: 51% lower odds (AOR=0.490, 95% CI: 0.232–1.037)
- 2) Single marital status: 96.4% lower odds compared to widowed (AOR=0.036, 95% CI: 0.007–0.171)
- 3) No chronic illness: 60.6% lower odds (AOR=0.394, 95% CI: 0.167–0.927)

Table 5. Predictor variables for healthcare utilization among non-CBHI members, Addis Ababa, April 2021.

Explanatory variable	Healthcare service utilization					
	No	Yes	COR	95%CI	AOR	95%CI
Age						
18-35	43(34.4)	42(18.3)	0.271	0.144- 0.507*	0.375	0.178-0.791*
36-55	59(47.2)	104(45.4)	0.488	0.279-0.586*	0.695	0.360- 1.341
≥ 56	23(18.4)	83(36.3)	1		1	
Sex						
Female	47(37.6)	135(59)	1		1	
Male	78(62.4)	94(41)	0.420	0.268-0.656*	0.488	0.292-0.816*
Marital status						
Single	28(22.4)	16(7)	1		1	
Married	78(62.4)	146(64)	0.136	0.054-0.343*	0.195	0.068-0.566*
Divorced/separated	9(7.2)	25(11)	0.446	0.212-0.936*	0.631	0.270-1.473
Widowed	10(8)	42(18)	0.661	0.237-1.848	0.989	0.319-3.070
Occupation						
Merchant	45(36)	74(32)	1		1	
Housewife	11(8.8)	51(22)	0.355	0.168-0.751*	0.939	0.368- 2.398
Daily labourer	52(4.4)	75(33)	0.311	0.148-0.653*	0.707	0.283-1.763
Unemployed	17(13.6)	29(13)	0.368	0.152-0.891*	0.550	0.196-1.541
Educational status						
Can't read and write	7(5.6)	34(14.8)	1		1	
Read and write	29(23.2)	58(25.3)	3.303	1.359-8.026*	1.263	0.426-3.740

Explanatory variable	Healthcare service utilization					
	No	Yes	COR	95%CI	AOR	95%CI
Primary education	38(30.4)	62(27)	1.360	0.769-2.406	0.666	0.326-1.360
Secondary and above	51(40.8)	75(32.8)	1.109	0.648-1.900	0.837	0.445-1.576
Income						
<2500	84(67.2)	170(74.2)	1.406	0.873-2.4265	0.935	0.509-1.716
≥2500	41(32.8)	59(25.8)	1		1	
Perceived healthcare cost						
Good	62(49.6)	146(63.7)	1		1	
Poor	63(50.4)	83(36.3)	1.787	1.149-2.781*	1.174	0.684-2.016
Perceived quality						
Good	44(32.2)	109(47.5)	1.672	1.067-2.621*	2.260	1.358-3.762*
Poor	81(64.8)	120(52.5)	1		1	
Current health status						
Good	7(5.6)	29(12.6)	1			
Poor	118(94.4)	200(87.4)	2.444	1.038-5.754*	0.686	0.253-1.863
Illness episode						
Yes	108(86.4)	159(69.4)	1		1	
No	17(13.6)	70(30.6)	0.358	0.199-0.641	0.590	0.301-1.157
Chronic illness						
Yes	104(83.2)	140(61)	1		1	
No	21(16.8)	89(39)	0.318	0.185-0.544*	0.414	0.230-0.744*
CBHI membership status						
Insured	78(62.4)	98(42.7)	1		1	
Uninsured	47(37.6)	131(57.3)	0.451	0.288-0.705*	0.579	0.351-0.955*

Note: percentage in parentheses * is p<0.05

4. Discussion

This study assessed the impact of Community-Based Health Insurance (CBHI) membership on healthcare service utilization in Addis Ababa. The overall healthcare utilization was 64.7% (95% CI: 59.5–69.5), with CBHI members utilizing services more frequently (73.6%, 95% CI: 66.5–79.6) than non-members (55.7%, 95% CI: 48.2–62.9). This is consistent with findings from North West Ethiopia [13]. The higher utilization among CBHI members may be due to prepaid coverage and improved access under the CBHI scheme.

Most respondents preferred **health centers** as their first choice, with 71.4% of CBHI members and 45.58% of non-

members indicating this preference, aligning with accessibility and affordability factors [13].

Reasons for not seeking healthcare differed between groups. Among members, the primary reason was the perception that the illness was not serious (53%), aligning with studies from South Africa, Kenya, and northeast Ethiopia [28, 29]. Among non-members, the main barrier was financial constraints (39%), consistent with studies in Kenya and southern Ethiopia [16, 29, 30]. This reflects the role of CBHI in reducing financial barriers to care.

Predictors of healthcare utilization** included gender, age, perceived quality, CBHI membership, illness episodes, and chronic illness. Male household heads were less likely to utilize services compared to females, consistent with studies in

South Africa and northwest Ethiopia [27, 28]. Younger household heads (18–35 years) had lower odds of utilization compared to older heads (≥ 56 years). Households perceiving good healthcare quality were more likely to utilize services, corroborating studies in Ethiopia [4, 30].

CBHI membership was a significant predictor, with non-members showing 42% lower odds of healthcare utilization compared to members, consistent with prior Ethiopian and South African studies [3, 4, 21, 29, 30].

Health status and chronic illness also influenced utilization. Households without chronic illness were less likely to use healthcare than those with chronic illness. Similarly, households with no recent illness episodes had lower utilization. These findings may reflect follow-up care and repeated healthcare encounters for chronic or frequent illness.

In summary, CBHI membership, female gender, older age, good perceived quality, presence of chronic illness, and recent illness episodes were key determinants of healthcare utilization in Addis Ababa. Financial barriers and perceived mild illness remain major constraints for non-members. These findings highlight the importance of expanding CBHI coverage, improving perceived and actual quality of care, and addressing health literacy and financial accessibility to increase service utilization.

5. Conclusions

Community-Based Health Insurance has a significant association with households' health service utilization. Health Service Utilization among CBHI members is higher than non-CBHI members.

Sex and presence of illness episodes showed a significant association with health service utilization of CBHI members. While sex, marital status, and chronic illness showed a significant association with health service utilization of non-CBHI members.

Abbreviations

CBHI	Community-Based Health Insurance
OOP	Out-of-Pocket

Acknowledgments

I acknowledge Yekatit 12 Hospital Medical College and all study participants.

Author Contributions

Abdulwahid Abdo: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing

Getabalew Endazenaw: Supervision, Writing – review & editing

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Norheim OT, Berhane F, Chitah B, et al. Making fair choices on the path to universal health coverage: final report of the WHO consultative group on equity and universal health coverage. Geneva: World Health Organization; 2014.
- [2] World Health Organization. Universal health coverage (UHC). Fact Sheets. 2017.
- [3] Mebratie A. Essays on evaluating a community-based health insurance scheme in rural Ethiopia. 2015.
- [4] Kwon S. Community-based health insurance in Ethiopia: enrollment, membership renewal, and effects on health service utilization. Seoul: Seoul National University; 2018.
- [5] Anagaw D, Mebratie RS, Yilma Z, et al. Enrollment in Ethiopia's community-based health insurance scheme. *World Dev.* 2015; 74: 58–76.
- [6] Preker AS, Carrin G, Dror D, et al. Effectiveness of community health financing in meeting the cost of illness. *Bull World Health Organ.* 2002; 80: 143–50.
- [7] Hounton S, Paul B, Bedi BK. Assessing effectiveness of a community-based health insurance in rural Burkina Faso. *BMC Health Serv Res.* 2015; 15: 1–10.
- [8] Sarker AR, Sultana M, Ahmed S, et al. Clients' experience and satisfaction of utilizing healthcare services in a community-based health insurance program in Bangladesh. *Int J Environ Res Public Health.* 2018; 15: 1637.
- [9] Federal Ministry of Health, Ethiopia. Ethiopia health accounts 2016/17. 2017.
- [10] Stoermer M, Fuerst F, Rijal K, et al. Review of community-based health insurance initiatives in Nepal. *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)*, 2012.
- [11] Spaan E, Mathijssen J, Tromp N, et al. The impact of health insurance in Africa and Asia: a systematic review. *Bull World Health Organ.* 2012; 90: 685–92.
- [12] Agasha DB, Edwin BMR, Baine SO. Effect of the eQuality Health Bwindi Scheme on utilization of health services at Bwindi Community Hospital, Uganda. *Front Public Health.* 2019; 7: 71.
- [13] Atnafu DD, Tilahun H, Alemu YM. Community-based health insurance and healthcare service utilization, North-West Ethiopia: a comparative, cross-sectional study. *BMJ Open.* 2018; 8: e019613.

- [14] Barasa EW, Maina T, Ravishankar N. Assessing the impoverishing effects and factors associated with the incidence of catastrophic healthcare payments in Kenya. *Int J Equity Health*. 2017; 16: 31.
- [15] De Weerd J, Dercon S. Risk-sharing networks and insurance against illness. *J Dev Econ*. 2004; 81: 337–56.
- [16] Bojola F, Dessu S, Dawit Z, et al. Assessment of health care seeking behavior among household heads in Dale Woreda, Sidama Zone, Southern Ethiopia. *Glob J Med Res F Dis*. 2018; 18: 18–29.
- [17] Raza WA, van de Poel E, Bedi A, et al. Impact of community-based health insurance on access and financial protection: evidence from three randomized control trials in rural India. *Health Econ*. 2016; 25: 675–87.
- [18] Liu K, Cook B, Lu C. Health inequality and community-based health insurance: a case study of rural Rwanda with repeated cross-sectional data. *Int J Public Health*. 2019; 64: 7–14.
- [19] Parmar D, De Allegri M, Savadogo G, et al. Do community-based health insurance schemes fulfil the promise of equity? Evidence from Burkina Faso. *Health Policy Plan*. 2014; 29: 76–84.
- [20] Umeh CA, Feeley FG. Inequitable access to health care by the poor in community-based health insurance programs: a review of studies from low- and middle-income countries. *Glob Health Sci Pract*. 2017; 5: 299–314.
- [21] Tilahun H, Atnafo DD, Asrade G, et al. Factors for healthcare utilization and effect of mutual health insurance on healthcare utilization in rural South Achefer Woreda, North West Ethiopia. *Health Econ Rev*. 2018; 8: 1–7.
- [22] Demissie B, Gutema N. Effect of community-based health insurance on utilization of outpatient health care services in Southern Ethiopia: a comparative cross-sectional study. *PLoS One*. 2020; 13: e14153.
- [23] Lagomarsino G, Garabrant A, Adyas A, Muga R, Otoo N. Moving towards universal health coverage: health insurance reforms in nine developing countries in Africa and Asia. *The Lancet*. 2012;380(9845):933–43..
- [24] Thuong NTT. Impact of health insurance on healthcare utilisation patterns in Vietnam: a survey-based analysis with propensity score matching method. *BMJ open*. 2020;10(10):e040062.
- [25] Al-Hanawi MK, Mwale ML. The Effects of Health Insurance on Health-Seeking Behaviour: Evidence from the Kingdom of Saudi Arabia. 2020;13:595-607.
- [26] Mebratie AD, Sparrow R, Yilma Z, Abebaw D, Alemu G, Bedi AS. The impact of Ethiopia's pilot community based health insurance scheme on healthcare utilization and cost of care. *Social science & medicine* (1982). 2019;220:112-9.
- [27] Otieno PO, Wambiya EOA, Mohamed SM, et al. Access to primary healthcare services and associated factors in urban slums in Nairobi, Kenya. 2020.
- [28] Atnafo A, Gebremedhin T. Community-based health insurance enrollment and child health service utilization in Northwest Ethiopia: a cross-sectional case comparison study. *Clinicoecon Outcomes Res*. 2020; 12: 435–45.
- [29] Tesfagiorgis E. The impact of community-based health insurance on health service utilization in Aneded Woreda. 2016.
- [30] Evaluation of community-based health insurance pilot schemes in Ethiopia: final report. 2015.

Biography



Abdulwahid Abdo is a public health professional based in Addis Ababa, Ethiopia. He holds a Master of Public Health (MPH) from Yekatit 12 Hospital Medical College. His academic training focused on health systems, health insurance, and healthcare utilization in low-resource settings. He previously worked in public health emergency management, contributing to preparedness and response efforts. Currently, he works in the Maternal and Child Health (MCH) program in Lideta Sub-City, where his work focuses on improving maternal, neonatal, and child health services and strengthening health system performance.

Research Field

Abdulwahid Abdo: Public Health, Health Systems Research, Health Financing, Community-Based Health Insurance, Healthcare Utilization, Health Equity, Health Policy, Maternal and Child Health, Epidemiology, Global Health