

Original article

Effect of community-based health insurance on the use of health service and perceived quality of care in Bacho Woreda, central Ethiopia: A mixed method study

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ABSTRACT

Background: Ethiopia has made a significant contribution towards Community Based Health Insurance (CBHI). However, evidence on the effect, use, and perceived quality of CBHI in the study area was scanty. Hence, this study aimed to assess the effects of a community-based health insurance scheme on the utilization of outpatient care, to assess factors affecting enrollment in the CBHI scheme, and explore the perception of the enrollee on the quality of care they received in Bacho Woreda, South West Shoa, Ethiopia.

Methods: A facility-based Mixed method was conducted in Bacho District, central Ethiopia from December 2021 to May 30/2022. Quantitative data was collected using a structured questionnaire among a randomly selected sample of 386 (126 member and 240 non-members) household heads. While, qualitative information was gathered using focus group discussions among purposively selected CBHI members to complement the findings from the household survey. A logistic regression model was used to assess factors affecting enrollment in the CBHI scheme and to assess the effect of CBHI on outpatient service utilization. A bi-variable analysis of explanatory variables, including CBH scheme membership status, with the outcome variable of the study was computed. Then, all the independent variables that were significant in the bi variable analysis were taken for multiple logistic analysis. The qualitative data was summarized and presented concurrently alongside the quantitative data by using the thematic analysis technique.

Result: A total of 386 respondents with a response rate of 95.3 %. The majority 219(56.7 %) of the study participants' age range from 18 to 35 years with a mean of 36.096 + 13.51796(33). Around half 191(49.5 %) of the study participants were farmers. The result revealed that there is a significant association between CBI participation and outpatient service utilization (AOR; 4.207, 95 % CI; 2.112, 8.380). In addition to this marital status of never married is significantly associated with OPD service utilization (AOR; 0.097, 95 % CI; 0.010, 0.970). The satisfaction of respondent with the service they received during their visit was also assessed and 60 (47.6 %) and 48(38.1 %) was very satisfied with the overall quality of service and availability of drug/medical supplies, respectively. 49(38.9 %) and 50(39.7 %) of respondents were satisfied with the availability of diagnostics and the cleanliness of the facility.

Conclusion: The Members of CBHI were highly utilized in their health care and more likely to attend health care providers even for simple sickness. The perception of the respondents regarding improvement in service quality after the facility had been contracted by the CBHI scheme there was improvement in overall quality of service. Regarding to factor affects the incidence of participation in CBHI scheme has been assessed and it reveal that age between 36 and 50 years were 72.4 % less likely to participate in CBHI scheme compared to those who are between 51 and 86 years.

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1. Introduction

A CBHI is a prepayment plan that the informal sector in rural areas uses to overcome financial difficulties by pooling health risks, finances, and effective healthcare at the community level. It also protects them from poverty and out-of-pocket expenses. Many low- and middle-income countries (LMICs) have found it more challenging to sustain enough finance for healthcare services in an equitable manner over the last two decades.^{1,2} In the late 1990s, this disturbing scenario prompted WHO and other international bodies to propose an alternate method, resulting in the emergence of various forms of community-based health care finance.^{3,4} Community-based health insurance, or CBHI for short, is a risk-pooling strategy that aims to distribute health care costs among families with varying health statuses in order to increase accessibility and permit cross-subsidy between wealthy and poor populations.⁵

Various healthcare finance strategies, such as tax-based financing and/or social health insurance plans, have helped high-income nations achieve universal health coverage. On the other hand, countries with low and middle incomes have made very little progress, and out-of-pocket costs for healthcare have become a major cause of poverty for poor and vulnerable families, who frequently make up the majority of the population.⁶

The allocation of resources was likewise skewed toward hospitals and metropolitan regions. The cost of health care was not reflected in the user fees charged in health institutions, and all money was sent to the government treasury. In the country, there was no or limited insurance coverage. The private sector's engagement in health was minimal. Many families found it difficult to obtain health treatment as a result of these situations. In order to address these concerns, the Council of Ministers approved a Health Care Financing Strategy in 1998. Its goals were to raise funds from both domestic and international sources, enhance efficiency, particularly by transferring resources to primary care, and assure the long-term viability of high-quality health-care services. It also attempted to increase community involvement and ownership of health-care services.⁸

Strengthening service delivery and overcoming considerable budgetary constraints are required to achieve universal health coverage. Ethiopia's government is introducing community-based health insurance to protect rural residents from high out-of-pocket medical costs and boost health service utilization. As part of its health care financing strategy in general and its health insurance policy in particular, the Ethiopian government supported and implemented community-based health insurance (CBHI) programs in a few locations in 2010 and 2011. The initiative intends to provide risk mitigation methods for persons working in rural and informal areas.⁸ Because out-of-pocket healthcare costs have been highlighted as a key source of poverty for poor and vulnerable families, who often make up the majority of the population.⁹ As a result, the focus of this study is to assess the effect of CBHI on use of outpatient care and perceived quality services offered by public health facilities in Bacho Woreda of South West Shoa Zone, Oromia Region, Ethiopia.

Ethiopia's government launched a CBHI program in 2011 and phased it in over time. The initiative was originally tested in 13 woredas (districts) of the four most populous regions: Oromia, Amhara, SNNP, and Tigray, between 2011 and 2013. The decision to scale-up the CBHI program to other woredas was prompted by its success, lessons learned, and viability of executing the scheme as concluded in the evaluation of the 13 pilot CBHI schemes in 2014/15.¹⁵ CBHI is currently being implemented in 657 woredas and above 22.5 million people are benefited from CBHI as Ethiopian Health Insurance reports.

Therefore, this study assessed the effects of a community-based health insurance scheme on the utilization of outpatient care, to assess factors affecting enrollment in CBHI scheme and explore the perception of the enrollee on the quality of care they received in Bacho Woreda, South West Shoa, Ethiopia.

2. Methods

2.1. Study area and period

The study was carried out from Dec.30/2021 to October.30/2022 and data collection was conducted from Feb 14 - Mar 18/2022 in Bacho Woreda Health facility, Oromia region, South West Shoa, Ethiopia.

2.2. Study design

A facility-based cross-sectional comparative study employing a mixed-methods approach was conducted to assess differences between Community-Based Health Insurance (CBHI) scheme members and non-members. The quantitative component involved a cross-sectional comparison of patients enrolled in the CBHI scheme and those not enrolled, based on data collected at a single point in time. The qualitative component included key informant interviews and focus group discussions to explore contextual and experiential factors influencing membership status and health service utilization. Although the study does not use a quasi-experimental or pre-post intervention design, the comparative nature of the analysis allows for the examination of associations between CBHI membership and selected outcomes. The mixed-methods approach was used to complement and triangulate findings, thereby enhancing the depth and validity of the results.

2.3. Population

2.3.1. Source population

The source population for the quantitative study was all outpatients who visited the selected health facilities in Bacho Woreda during the study period. For the qualitative part the source population was adult CBHI scheme members who visit outpatients of the selected health facilities.

2.3.2. Study population

The study populations were patients who visit the outpatient department of selected facilities during the study period. Survey was conducted on both member and nonmember patients. Focus group discussion was held among selected adult CBHI scheme members.

2.4. Eligibility criteria

2.4.1. Inclusion criteria

Patients who are 18 and above years old, Patients who are insured and non-insured under CBHI scheme and visit the outpatient departments of the selected facilities in Bacho Woreda was included in the survey. In the qualitative part, only CBHI scheme members were included.

2.5. Exclusion criteria

Patients who were critically ill and unable to respond to interviews, patients with mental problems, formal sector employees, students and retired patients and clients who use exempted services were excluded from the interviews as they do not require insurance coverage.

2.6. Sample size determination

The sample size for the study was determined by the double population proportion formula using EPI Info version 7 and calculated to be 405 households, yielding 135 CBHI scheme member and 270 non-members. For the qualitative part 5 focus group discussions were planned purposively.

The assumptions used were:

Based on previous study, proportion of outpatient service utilization (P1) for CBHI non-member = 22 % and P2 for CBHI member = 35 %⁸

95 % confidence intervals and 20 % precision; and.
1:2 ratios for CBHI member and non-member households.

2.7. Sampling procedures

All five public health facilities (one general hospital and four health center) in the Woreda were included in the study. The patient volume in the facilities outpatients during the last three months prior to the data collection was used to proportionally allocated samples across the facilities. From both groups interviewees were systematically selected at the Kth interval. The first interviewee was randomly selected. For the qualitative part, focus group participants were recruited from the same facilities among CBHI scheme member using nonprobability purposive sampling technique, researcher used purposive sampling to get required samples quickly and to relies on my own judgment when choosing members of the population to participate in this study.

2.8. Data collection method

A structured interviewer-administered pretested questionnaire and interview guide adopted from the Federal Democratic Republic of Ethiopia, Ethiopian Health Insurance Agency Evaluation of CBHI pilot scheme was used for the survey.⁸ The questionnaires were prepared in English and were translated into Afaan Oromo. The Afaan Oromo version of the questionnaires were used for data collection.

The data was collected from participants on their exit from the facility. The health information technicians identify, provide codes, and collect insurance statuses in a separate sheet. Data collectors kept blind to the insurance status of patients. Diploma-level health professionals working in areas adjacent to the study area were collecting the data. The qualitative data was collected by the principal investigator by using focus group discussion.

2.9. Data quality control

Pretest was conducted to check the accuracy and validity of the questionnaire prior to the actual study period using 5 % of the questionnaire in adjacent woreda. A two-day training was given to the data collectors and the supervisor on the objective, relevance of the study, confidentiality of information, respondent's right, and informed consent. The principal investigator and the supervisor made frequent checks on the data collection process to ensure the completeness & consistencies of the gathered information.

2.10. Data processing and analysis

The quantitative data was entered using EPI info version 7.2.4 statistical software and analyzed using SPSS version 20 statistical package. Data cleaning was performed to check for accuracy, consistencies, missed values and variables to fix errors. Descriptive statistics was used to describe the study population in relation to relevant variables. Logistic regression model was used to assess factors affecting enrollment in CBHI scheme and to assess association between CBHI enrollment and outpatient service utilization. To assess perceived quality of care among insured patients, descriptive methods such as mean, percentage and frequencies was employed and the results was presented by frequencies and percentages. Odds Ratios and their 95 % confidence intervals were computed and variables with p - value less than 0.05 was declared to have significant association.

For the qualitative part, all focus groups transcribed and translated verbatim from local language to English. Open Code software was used for coding and categorization, thematic analysis approach was implemented. Major themes was identified and compared across transcripts to determine similarities and differences in perspectives of study participants on driving factors influencing their decisions. Quotes that represent the informants' opinion were used to support the quantitative

findings.

2.11. Ethical consideration

Ethical clearance was obtained from the Institutional Review Board of Addis Ababa university School of Public Health and support letter obtained from selected health facilities. The purpose and importance of the study was explained to the participants. Data was collected only after full informed verbal consent obtained. Confidentiality of the information was maintained by excluding names as identification in the questionnaire & keeping their privacy during the data collection.

3. Results

3.1. Patient's background information/socio-demographic characteristics

This study involved 386 respondents with 95.3 % response rate. The majority 219(56.7 %) of study participant age range from 18 to 35 years with the mean of $36.096 + 13.51796(33)$. 232(60.1 %) of study participant was male and 123(31.9 %) had secondary education. Regarding the residence and marital status 227 (58.8 %) and 244(63.2 %) are rural resident and married, respectively. Also, 191(49.5 %) of our study participant are farmer followed by 88 (22.8 %) employed/self-employed as indicated (Table 1).

3.2. Household characteristics

The family size ranges from 1 to 13 with the mean of $4.78 + 2.26(4)$ and 203(52.6 %) of household had family size of 1–4. The majority 211 (54.7 %) of the household had monthly income between 1000 and 5000 ETB with mean of $5204 + 4097(5000)$. 224(58 %) of Households are rural resident. 295(76.4 %) of the respondent's household had any illness in the family in the past six weeks (Table 2).

Table 1
Socio-demographic information of patients attending outpatient department in Bacho Woreda Health facility, 2022.

Characteristics	Category	Frequency	Percent
Age in year	15–35	70	21.54
	36–50	81	24.92
	50–86	106	32.62
Sex	Male	232	60.1
	Female	154	39.9
Highest Educational Attainment	Illiterate	67	17.4
	Reading and writing	37	9.6
	Primary education (Grade 1–6)	105	27.2
	Secondary education	123	31.9
	Vocational training	24	6.2
Residence	Tertiary education	30	7.8
	Urban	159	41.2
	Rural	227	58.8
Marital status	Never married	49	12.7
	Married	244	63.2
	Living together	61	15.8
	Divorced/Separated	16	4.1
	Widowed	16	4.1
Occupation/employment	Employed/self-employed	88	22.8
	Non-employed (above 18 years)	14	3.6
	Student	24	6.2
	Farmer	191	49.5
	Retired	2	0.5
	Merchant	54	14.0
	Housewife	13	3.4

Source: Authors own computation

Table 2

Household characteristics of patients attending outpatient department in Bacho Woreda Health facility, 2022.

Characteristics	Category	Frequency	Percent
Family Size	1–4	203	52.6
	5–8	155	40.2
	>8	28	7.3
Household Monthly Income	1000-5000	211	54.7
	ETB		
	5001-10000	131	33.9
	ETB		
Household place of residence	>10000 ETB	8	2.1
	Urban	161	41.7
	Rural	225	58.3
Any illness in the family in the past six months	No	91	23.6
	Yes	295	76.4

Source: Authors own computation

3.3. CBHI related information

In this study 126 (32.6 %) are community-based health insurance members and the duration since becoming a member varies from 1 month to 90 months with a mean of 24 + 17.38(21). The majority 123 (97.6 %) of them had planned to renew their CBHI membership. Regarding the adequacy of the benefits package, 62(49.2 %) CBHI members consider the benefits package is very adequate. 260(67.4 %) of study participants are not members of CBHI. Regarding the reason for not enrolling, 83(21.9 %) stated didn't know enough about the CBHI scheme and 57(15 %) stated the registration fee and premiums are not affordable (Table 3).

Table 3

CBHI-related information of patients attending outpatient department in Bacho Woreda Health facility, 2022.

Characteristics	Category	Frequency	Percent
Household enrolled in a CBHI scheme N = 386	No	260	67.4
	Yes	126	32.6
Duration since becoming CBHI member N = 126	<12 Months	33	26.2
	13–36 Months	54	42.9
	>36 Months	39	31
Plan to renew your CBHI membership N = 126	No	3	0.8
	Yes	123	31.9
Adequacy of the benefit package N = 126	Very adequate	62	16.1
	Somewhat adequate	45	11.7
	Inadequate	18	4.7
	I do not know	1	0.3
Reason for not enrolling in CBHI N = 260	Illness and injury do not occur frequently in our household	54	14.2 %
	The registration fee and premiums are not affordable	57	15.0 %
	Want to wait in order to confirm the benefits of the scheme from others	25	6.6 %
	We do not know enough about the CBHI scheme	83	21.9 %
	There is limited availability of health services	29	7.7 %
	The quality of health care services is low	32	8.4 %
	The benefit package does not meet our needs	17	4.5 %
	CBHI management staff is not trustworthy	21	5.5 %
	Waiting time to access services is longer for CBHI members	13	3.4 %
	I am fee waiver beneficiary	4	1.1 %
	Government Employee	28	7.4 %
Other	16	4.2 %	

Source: Authors own computation

Fig. 1 present the reason for enrolling in CBHI scheme and frequently mentioned reason to enroll in CBHI was to finance health care 101(51.5 %) followed by illness and/or injury occurs frequently in our household 31(15.8 %).

3.4. Service utilization by the household members

The study participant household had been using the health facility for 1–240 months with average of 40.57 + 41.5(24). Among the study participant who reported illness in the past six months 257(87.1 %) had visited health facility. Regarding service obtained during the visit 241 (93.8 %) obtained drugs and medical supplies while only 3(1.2 %) obtained surgical procedure. The mean out of pocket cost for all service obtained was 333.65 + 664.4(155). 107(48.4 %) of respondents who paid for service consider the fee they paid for the services was somewhat affordable (Table 4)

3.5. The relation between community-based health insurance scheme and utilization of outpatient care

In this study 202(77.7 %) and 93(73.8 %) of non-CBHI member and CBHI member reported illness in the past 6 months. Among those who reported illness 108(53.5 %) and 79(84.9 %) of non-CBHI member and CBHI member had utilized out patients care for their illness. In order to make sure that the observed differences were not just simply caused by the individual household head or household characteristics, a binary logistic model was estimated.

The bi variate analysis of explanatory variables, including CBHI scheme membership status, with outcome variable of the study was computed. Then, all the independent variables that were significant in the bi variate analysis were taken for multiple logistic analyses. The result of analysis revealed that there is significant association between CBHI participation and outpatient service utilization in which CBHI nonmembers are 76.2 % less likely to utilize outpatient care than their counterpart (AOR; 0.238, 95 % CI; 0.119, 0.473).

In addition to this marital status of never married is significantly associated with OPD service utilization (AOR; 0.097,95 % CI; 0.010, 0.970) as indicated in Table 9.

3.6. Perceived quality of health service

Regarding the availability of prescribed drugs/supplies 67(54.5 %) were able to get prescribed drugs. x(58.9 %) get within the visited health facility while 41(24.4 %) were sent to other facility/drug stores. The reason for being sent to other drug store was unavailability with in the facility visited 40(97.6 %) (Fig. 2).

The satisfaction of respondent with the service they received during their visit was also assessed and 60(47.6 %) and 48(38.1 %) was very satisfied with the overall quality of service and availability of drug/medical supplies, respectively. 49(38.9 %) and 50(39.7 %) of respondents was satisfied with availability of diagnostics and cleanliness of facility (Table 5).

The study also assessed the perception of respondent regarding improvement in service quality after the facility has been contracted by CBHI scheme and it is presented in Table 6. 63(50 %) of respondent says there is improvement in overall quality of service while 34(27 %) say there is no improvement. Regarding improvement in availability of drug and diagnostic facilities 53(42.1 %) and 52(41.3 %) say there is improvement, respectively. 49(38.9 %) of respondents says there is no improvement in cleanliness of the facility. Regarding the waiting time 54(42.9 %) observe improvement and 50(39.7 %) observe improvement in waiting time between service. Also, 47(37.6 %) reported improvement in friendliness of staff (Table —).

The average waiting time before having consultation and between service was assessed and 61 (48.4 %) and 54(42.9 %) reported it is less than 30 min, respectively. The health facility is preferred service points

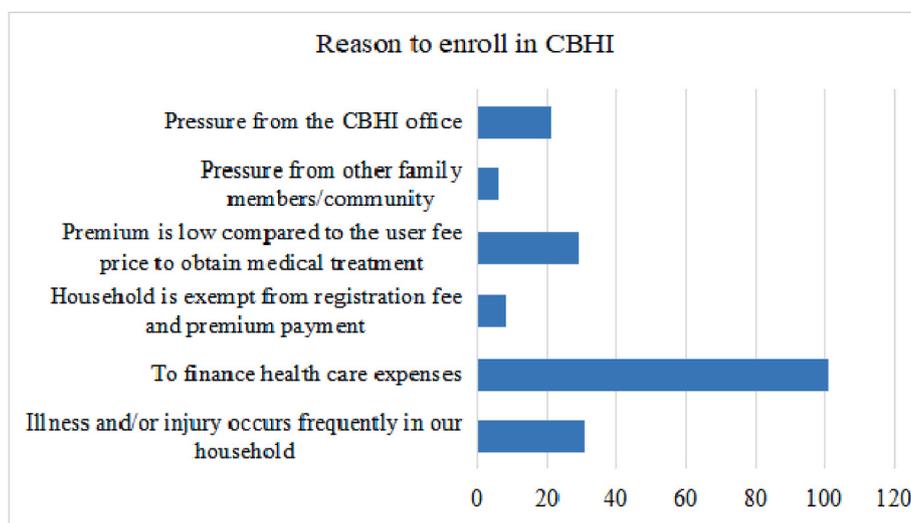


Fig. 1. Reason to enroll in CBHI among patients attending outpatient department in Bacho Woreda Health facility, 2022.

Table 4
Service utilization by the household members of patients attending outpatient department in Bacho Woreda Health facility, 2022.

Characteristics	Category	Frequency	Percent
Duration of health facility use	<12 Months	126	32.6
	12–60 Months	193	50.0
	>60 Months	67	17.4
Number of visits in last six months N = 257	1	70	27.2
	2	92	35.8
	3	71	27.6
	4	24	9.3
	5	14	5.4
Service obtained	Consultation/card	226	87.9
	Diagnosis (lab and other)	224	87.2
	Drugs and medical supplies	241	93.8
	Inpatient services (bed/food)	29	11.3
	Delivery	14	5.4
Affordability of fee paid for service	Surgical procedure	3	1.2
	Affordable	71	18.4
	Somewhat affordable	107	27.7
	Not affordable	43	11.1

Source: Authors own computation

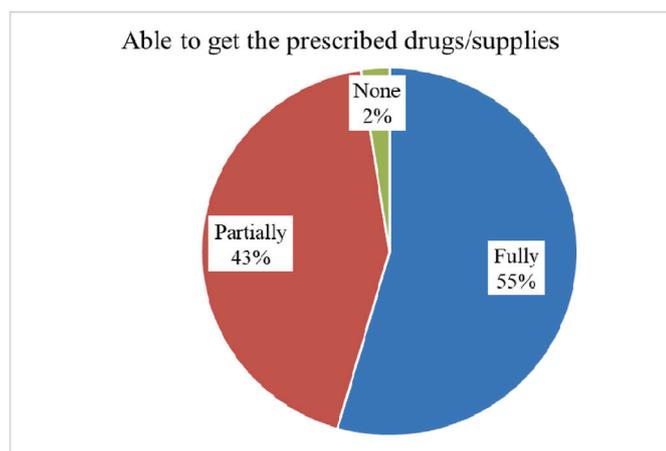


Fig. 2. Ability to get prescribed drugs and supplies among patients attending outpatient department in Bacho Woreda Health Facility, 2022 – this is the pie chart.

for majority 79(62.7 %) of respondents since they are satisfied with service quality while 40(31.7 %) had no other options. 92(73 %) of respondents mentioned that health professionals treat CBHI members and non-CBHI members equally. Regarding the overall quality of health services after the introduction of CBHI in the district 69(54.8 %) say there is improvement in the quality of care (Table 7).

3.7. Factors affecting the incidence of participation in community-based health insurance scheme

The factor associated with CBHI enrollment has been assessed by using Multiple logistic regression. The bi variable logistic of dependent variable or CBHI scheme membership status, with independent variables of the study was estimated and all the independent variables that were significant in the bi variate analysis were taken for multiple logistic regression analysis. The regression revealed that age between 36 and 50 years (AOR; 0.276, 95 % CI; 0.118, 0.643), Male (AOR; 1.705, 95 % CI; 1.048, 2.774), Educational attainment of illiterate (AOR; 4.069, 95 % CI; 1.018, 2.774), read and write (AOR; 7.728, 95 % CI; 1.751, 34.118), Primary education(AOR; 4.2, 95 % CI; 1.072, 17.012), and urban residence(AOR; 0.441, 95 % CI; 0.252, 0.770) are statistically associated participation in CBHI (Table 8).

This table shows that factors that able to affects the incidence of participation in CBHI scheme has been assessed and it reveal that age between 36 and 50 years were 72.4 % less likely to participate in CBHI scheme compared to those who are between 51 and 86 years (AOR; 0.276, 95 % CI; 0.118, 0.643).

4. Discussion

Effect of Community-Based Health Insurance on the use of Health Service and Perceived Quality of care in South West Shoa, Bacho Woreda health facilities. The researcher sought to evaluate whether or not Community based health insurance had an impact on health care utilization. Given the burden of diseases and the resource constraints faced in the world today, this type of evaluation is useful.

The factor affects the incidence of participation in community-based health insurance scheme has been assessed by this study and it reveal that age between 36 and 50 years were 72.4 % less likely to participate in CBHI scheme compared to those who are between 51 and 86 years (AOR; 0.276, 95 % CI; 0.118, 0.643). This finding is similar with CBHI pilot scheme evaluation in 2015 in which older heads are more likely to enroll in the pilot scheme. This could be due to the fact that older age group had higher incidence of illness compared to the younger.⁸

Table 5

The relation between community-based health insurance scheme and utilization of outpatient care among patients attending outpatient department in Bacho Woreda Health facility, 2022.

Variable	Categories	Utilized OP Health care		Unadjusted OR (95 %CI)	Adjusted OR (95 %CI)	p-value AOR
		No	Yes			
CBHI enrolment	No	94	108	0.24(0.108–0.383)	0.238(0.119–0.473)	0.000*
	Yes	14	79	1	1	
Age	15–35	70	92	0.219(0.081–0.593)	0.380(0.121–1.191)	0.097
	36–50	33	65	0.328(0.117–0.924)	0.401(0.126–1.274)	0.121
	51–86	5	30	1	1	
Highest Educational Attainment	Illiterate	20	37	1.423(0.530–3.821)	0.547(0.161–1.856)	0.333
	Reading and writing	4	22	4.231(1.1–16.272)	2.155(0.453–10.25)	0.335
	Primary education (Grade 1–6)	29	54	1.432(0.560–3.666)	0.917(0.295–2.848)	0.880
	Secondary education	36	54	1.154(0.457–2.913)	0.981(0.339–2.844)	0.972
	Vocational training	9	7	0.598(0.165–2.166)	0.488(0.122–1.954)	0.311
Residence	Tertiary education	10	13	1	1	
	Urban	52	64	0.560 (0.346–0.909)	0.783(0.427–1.435)	0.428
Marital status	Rural	56	123	1	1	
	Never married	21	14	0.074(0.008–0.651)	0.097(0.010–0.970)	0.047*
	Married	52	131	0.280(0.035–2.265)	0.291(0.033–2.547)	0.265
	Living together	26	27	0.115(0.014–0.976)	0.122(0.013–1.129)	0.064
	Divorced/Separated	8	6	0.083(0.008–0.849)	0.099(0.009–1.117)	0.061
	Widowed	1	9	1	1	

Source: Author’s own computation Note: * significant at 5 %

Table 6

Satisfaction with the service quality among patients attending outpatient department in Bacho Woreda Health facility, 2022.

		Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very Dissatisfied
overall quality of service	Frequency	60	36	10	19	1
	Percent	47.6	28.6	7.9	15.1	0.8
Availability of drugs/medical supplies	Frequency	48	41	5	29	3
	Percent	38.1	32.5	4	23	2.4
Availability of diagnostic facilities	Frequency	37	49	13	23	4
	Percent	29.4	38.9	10.3	18.3	3.2
Cleanliness of the facility	Frequency	43	50	13	17	3
	Percent	34.1	39.7	10.3	13.5	2.4
Waiting time	Frequency	43	41	18	21	3
	Percent	34.1	32.5	14.3	16.7	2.4
Waiting time between services	Frequency	41	47	15	20	3
	Percent	32.5	37.3	11.9	15.9	2.4
Friendliness of staff	Frequency	52	39	12	20	3
	Percent	41.3	31	9.5	15.9	2.4
Attentiveness and adequate follow up by the nursing staff	Frequency	52	45	8	16	4
	Percent	41.6	36.0	6.4	12.8	3.2

Table 7

Perception of patients on improvement in service quality since the health facility has been contracted by the CBHI scheme in Bacho Woreda Health facility, 2022.

		Yes	No	Don't observe
overall quality of service	Frequency	63	34	29
	Percent	50	27	23
Availability of drugs/medical supplies	Frequency	53	45	28
	Percent	42.1	35.7	22.2
Availability of diagnostic facilities	Frequency	52	43	31
	Percent	41.3	34.1	24.6
Cleanliness of the facility	Frequency	46	49	31
	Percent	36.5	38.9	24.6
Waiting time	Frequency	54	42	30
	Percent	42.9	33.3	23.8
Waiting time between services	Frequency	50	45	31
	Percent	39.7	35.7	24.6
Friendliness of staff	Frequency	47	46	32
	Percent	37.6	36.8	25.6

The Male respondents were 70 % more likely to enroll in the CBHI scheme compared to their counterparts (AOR; 1.705, 95 % CI; 1.048, 2.774) which is in contradiction with the CBHI scheme evaluation in which females are more likely to enroll in the CBHI scheme.⁸

The respondents with educational attainment of illiterate are 4 times

more likely to join CBHI scheme compared to those with Tertiary education (AOR; 4.069, 95 % CI; 1.018, 2.774). Also, those who are able to read and write are 8 times more likely (AOR; 7.728, 95 % CI; 1.751, 34.118) and those with Primary education are 4 times more likely (AOR; 4.2, 95 % CI; 1.072, 17.012) to enroll in CBHI scheme than those with Tertiary education. This could be due to the fact that educated individual are usually engaged in formal sector work which is not actually targets of CBHI scheme.

The urban residents are 56 % less likely to enroll in CBHI scheme than rural residents (AOR; 0.441, 95 % CI; 0.252, 0.770).

Based on the finding of the study nonmembers of community-based health insurance appear to utilize less health care than the members of CBHI. The regression finding also indicated that non-member of CBHI scheme is 72.6 % less likely to utilized outpatients’ services for the illness they encounter. This finding is consistent with study conducted in Ghana in which the introduction of the NHIS, has led to a drastic increase in health service utilization and outpatient healthcare services utilization²⁷ and it is consistent with other study conducted in Senegal and the results, higher probability of using hospitalization service than nonmembers and pay substantially less when need care.¹⁴

This could be due to the fact that being a member in the scheme lead to decrement in household cost for illness which intern enhances the utilization. The evidence shows that even in terms of frequency, Members of CBHI are highly utilize their health care and are more likely to

Table 8
Perceived quality of service among patients attending outpatient department in Bacho Woreda Health facility, 2022.

Characteristics	Category	Frequency	Percent
Waiting time before consolation	<30 min	61	48.4
	30–60 min	23	18.3
	1–3 h	27	21.4
	3–6 h	5	4.0
	6 h and more	10	7.9
Waiting time between services	<30 min	54	42.9
	30–60 min	42	33.3
	1–3 h	17	13.5
	3–6 h	4	3.2
	6 h and more	9	7.1
The health facility preferred service point for future health care needs	Yes, because I am satisfied with the service quality	79	62.7
	Yes, because I do not have another option	40	31.7
	No	7	5.6
Health professionals treat CBHI members and non-CBHI members equally overall quality of health services from the facility after the introduction of CBHI in the district	Yes	92	73.0
	No	19	15.1
	No Comment	15	11.9
	Quality of care deteriorates and it gets worse after CBHI introduction	6	4.8
	It is the same and no change	40	31.7
	Quality of care improved after CBHI introduction	69	54.8
	I do not know	11	8.7

attend health care providers even for simple sickness.

The main goal of community-based health insurance is to increase access to and enhance the quality of health care services. Its goal is to replace out-of-pocket health-care payments and provide financial insurance against excessive health-care expenditures at the point of service.

The study assessed the perception of respondent regarding improvement in service quality after the facility has been contracted by CBHI scheme and the result showed 50 % respondent says there is improvement in overall quality of service while 27 % say there is no improvement. Regarding improvement in availability of drug and diagnostic facilities 42.1 % and 41.3 %) say there is improvement, respectively. Regarding to cleanliness of the facility 38.9 % of respondents says there is no improvement. Regarding the waiting time 42.9 % observe improvement and 39.7 % observe improvement in

Table 9
Factors affecting the incidence of participation in community-based health insurance scheme among patients attending outpatient department in Bacho Woreda Health facility, 2022.

Variable	Categories	CBHI enrolment		Unadjusted OR (95 %CI)	Adjusted OR (95 %CI)	p-value AOR
		No	Yes			
Age	15–35	154	65	0.367(0.189–0.714)	0.492(0.217–1.115)	0.089
	36–50	86	38	0.384(0.189–0.782)	0.276(0.118–0.643)	0.003*
	51–86	20	23	1	1	
Sex	Male	147	85	1.594(1.020–2.490)	1.705(1.048–2.774)	0.032*
	Female	113	41	1	1	
Highest Educational Attainment	Illiterate	38	29	6.868(1.896–24.88)	4.069(1.018–16.264)	0.047*
	Reading and writing	17	20	10.588(2.73–41.12)	7.728(1.751–34.118)	0.007*
	Primary education (Grade 1–6)	64	41	5.766(1.64–20.23)	4.270(1.072–17.012)	0.040*
	Secondary education	94	29	2.777(0.785–9.82)	2.201(0.572–8.471)	0.251
	Vocational training	20	4	1.800(0.36–8.96)	1.939(0.369–10.190)	0.434
Residence	Tertiary education	27	3	1	1	
	Urban	130	29	0.299(0.185–0.484)	0.441(0.252–0.770)	0.004*
Family size	Rural	130	97	1	1	
	1–4	147	56	0.44(0.197–0.982)	0.602(0.246–1.476)	0.268
	5–8	98	57	0.671(0.298–1.511)	0.834(0.350–1.986)	0.681
	>8	15	13	1	1	

Source: Author own computation Note: * significant at <0.05

waiting time between services. On the other hand, the reported improvement in friendliness of staff is 37.6 %. This study finding is consistent with the study conducted in south Wollo North East part of Ethiopia.⁹

The health facility is preferred service points for majority 62.7 % of respondents since they are satisfied with service quality while 31.7 % had no other options. As a number of respondents mentioned that 73 % health professionals treat CBHI members and non-CBHI members equally. Regarding the overall quality of health services after the introduction of CBHI in the district 54.8 % say there is improvement in the quality of care. This finding is consistent with study conducted, on community based health insurance improve access and overall quality of service in South Wollo, North east part of Ethiopia.⁹

FGD responds regarding to perceived quality of care with different indicators like waiting time, availability of employment, attitude and motivation of staffs, availability of drugs/supplies, availability of diagnostic facilities, cleanliness of facilities and referral system. They responded as “Regarding to waiting time members FGD said waiting time should be improved because we burn our time in health facility to get services and employment availability is not enough specially in health center to give us services on time. In case of staff attitudes and motivation they responded me differently. Some staff gave services with respect and empathy. Others attitudes should be improved. Availability of diagnostics facility is somehow good. But, ultrasound should be available. Shortages of medicine are a problem and Government should intervene to the problems. We are sent to private pharmacy to buy drugs. Some essential medicines are available at the facilities all the time. Facility cleanliness is improved. Regarding to referral system, they told me that referral system is in place and it is good.”

5. Conclusion

This study revealed that People have general concepts about community based health insurance, but most of them are unclear about detail concept and procedure of Community based health insurance. The study conducted shows as the Members of CBHI are highly utilized their health care and are more likely to attend health care providers even for simple sickness. The study assessed the perception of respondent regarding improvement in service quality after the facility has been contracted by CBHI scheme and the result showed half of the respondents say there is improvement in overall quality of service. Community based health insurance is not only increases utilization, but also finds out the prevalence and top diseases in the community which helps policy makers in improving quality health services.

5.1. Recommendations

Based on the findings, the following recommendations are made to the Ministry of Health and Regional Health Bureaus, particularly the Oromia Regional Health Bureau. CBHI schemes are a critical step toward improving access to healthcare for the poor; however, broader coverage and effective scaling-up are essential to maximize their poverty-reducing potential. The Oromia Regional Health Bureau should strengthen efforts to improve service utilization by addressing barriers and enhancing the implementation of CBHI.

Health facilities should consistently monitor and improve service delivery by ensuring facility preparedness, maintaining professional ethics among providers, and securing essential medical supplies and diagnostic services. The health sector should also invest in sustainable health financing strategies that not only promote CBHI membership but also ensure equitable and quality healthcare for all.

5.2. Future research directions

Further research is needed to explore the long-term impact of CBHI on health outcomes and financial protection. Longitudinal or quasi-experimental studies could provide stronger causal evidence, while in-depth qualitative research could uncover community perceptions and implementation challenges across different regions.

Author contributions

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed on the journal to which the article will be submitted; gave final approval of the version to be published; and agreed to be accountable for all aspects of the work.

Disclosure

The authors declared as there is no conflicts of interest.

Ethical approval statement

Ethical clearance was obtained from the Institutional Review Board of Addis Ababa University, School of Public Health, and a support letter was obtained from selected health facilities. The purpose and importance of the study were explained to the participants. Data was collected only after full informed verbal consent was obtained. Confidentiality of

the information was maintained by excluding names as identifiers in the questionnaire and by ensuring privacy during data collection.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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