

Research Article

Determinants of Household Enrollment in to Community-Based Health Insurance Scheme in Hawassa City, Ethiopia: A Case-Control Study, 2023

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Abstract

Background: Ethiopia has been implementing community-based health insurance (CBHI) since 2011. This innovative financing method aims to improve domestic resource mobilization and sustainable health financing. This study examined the factors influencing CBHI enrollment among households in Hawassa, Ethiopia. **Objective:** To identify the key factors for enrollment in the community-based health insurance scheme in Hawassa city, Ethiopia. **Methods:** A community-based, unmatched 1:3/2 case-control study was conducted from December 1 to December 30, 2023, among 400 households (160 cases and 240 controls). Cases were chosen from households that registered for CBHI and are currently using it. Controls were selected from households that did not register for CBHI membership. Data was gathered using a semi-structured interview-administered questionnaire. We used multivariable logistic regression analysis with SPSS version 26. We considered variables statistically significant at a p-value less than 0.05, with a 95% confidence interval. **Results:** We collected data from 400 respondents (160 cases and 240 controls), achieving a 100% response rate. Participants with secondary education or higher, primary education, and those who can read and write showed statistically significantly higher odds of CBHI enrollment. The adjusted odds ratios (AOR) were 4.825 (95% CI: 1.592, 14.623), 3.900 (95% CI: 1.283, 11.852), and 3.129 (95% CI: 1.046, 9.355), respectively. Family size also had a significant impact, with an AOR of 2.302 (95% CI: 1.439, 3.693). Households with good knowledge of CBHI had higher odds of enrollment (AOR=2.959, 95% CI: 1.597, 5.482). Additionally, a perception of respectful care was notably linked, with an AOR of 1.819 (95% CI: 1.166, 2.835). **Conclusion and recommendation:** Education level, family size, knowledge, and perception of respectful care were significant factors for CBHI enrollment. Therefore, responsible organizations should enhance community education on the benefits of CBHI.

Keywords

Case-Control, CBHI Enrollment, Community-Based, Health Insurance, Ethiopia

1. Introduction

Community-Based Health Insurance (CBHI) is an initiative that necessitates community members to prepay for healthcare

services and to enter into a pledge agreement that ensures the health insurer will cover essential medical services in exchange

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for the premiums contributed to a collective fund that is established, owned, and overseen by the members [1]. Worldwide, out-of-pocket (OOP) expenses for health services continue to pose a significant obstacle to obtaining healthcare, especially in low- and middle-income nations (LMICs). In numerous Sub-Saharan African nations, such as Ethiopia, healthcare systems are predominantly funded through direct payments made at the time of service, resulting in millions lacking financial security and driving families into poverty due to [2].

As part of the healthcare financing strategy in general and the health insurance strategy in particular, the Government of Ethiopia has approved and implemented community-based health insurance (CBHI) programs in 13 pilot districts in Amhara, Oromia, SNNPRS and the Tigray region in 2010/2011 to provide risk protection mechanisms for those working in the rural and informal sectors Evaluation of Community Based Health Insurance Pilot Schemes in Ethiopia: Final Report. Addis Ababa: EHIA [3]. Currently, CBHI is being implemented in all urban and rural areas of the Sidama regional state [4].

In Hawassa City, CBHI enrollment rates differ significantly across sub-cities. Bahel Adarash at 69.7%, followed by Misrak at 64.8%, Menharia at 63.6%, Hawella Tulla at 59.1%, Tabor at 52.2%, and Mehal Ketema at 41.3%. The collection of premiums from new and renewing households is also low, at 38.3% and 58.5%, respectively. Local health authorities have identified several key barriers to enrollment. These include limited awareness, negative views on service quality and premium costs, lack of trust, medicine shortages, staffing problems, and delays in administration [5].

Similarly, the report shows the city's performance in collecting CBHI premiums from new households joining the CBHI scheme is only 38.3% and the renewal of contractual agreements for already existing member households is 58.5%. The report also indicated there were several challenges of CBHI scheme like low service delivery of health professionals to CBHI customers, shortage of medicines, absence of trained professionals assigned for the CBHI, low level of awareness, perception of high amount of premium, poor perception of quality of services and lack of trust are the barriers to join community-based health insurance, not taking their membership ID on time by presenting at the office not fulfilling the requirement during registration which responsible for less enrollment of the insurance. Several empirical studies were conducted based on CBH in Ethiopia [3, 4].

Multiple factors contribute to this low uptake and high dropout rate. These include limited awareness of CBHI benefits, poor knowledge of the scheme, perceived poor quality of care, lack of trust in the scheme management, delays in service, shortage of drugs, disrespectful care by health professionals, and perceived high premiums. Furthermore, socio-demographic variables such as low educational status, small household size, and lack of exposure to health information significantly deter participation [6, 7].

Despite the introduction of community-based health insurance schemes aimed at improving access to healthcare and

reducing out-of-pocket expenses, enrollment rates among households in Hawassa City remain suboptimal. Various factors such as socioeconomic status, awareness, perception of the scheme, and service quality may influence households' decisions to enroll. However, there is limited evidence specifically identifying and quantifying the determinants that affect household enrollment in the CBHI scheme within this context. Understanding these factors is crucial to designing targeted interventions that can enhance enrollment and improve healthcare coverage in Hawassa City.

2. Methods and Materials

2.1. Study Area

The research was carried out in Hawassa city, located in Ethiopia. This city is situated 275 km south of Addis Ababa, the capital of Ethiopia, in the Rift Valley area. The city lies within the latitude of 6° 55' to 7° 6' N, a longitude of 38° 25' to 38° 34' E, and an elevation of 1,708 mean sea level. Hawassa city has 8 sub-cities and is located 272 km south of Addis Ababa, Ethiopia. According to the report of housing and population census (Areru et al., 2020), the projected population of Hawassa city Administration in 2023 was 374,034, out of which 190,757 were males and 183,277 were females [8]. Hawassa City has been among the fastest-growing cities in the country with respect to urbanization and industrial growth, with an average urbanization rate of 6.3% per annum for four consecutive years, which is much greater than the national urbanization rate of 4.1% (Central Statistical Agency). According to the Hawassa City Administration, the city comprises eight sub-cities (seven urban and one suburban) and 32 "Kebeles (the smallest administrative units). According to the projection of the Ethiopian Central Statistical Agency (CSA), the urban population of Hawassa City in 2021 was 471,952, estimated at a 4% growth rate [9].

2.2. Study Design and Period

An unmatched case-control study was employed from December 1-30, 2023.

2.3. Population

2.3.1. Source Population

The source population for the study was all CBHI-insured and non-insured urban households of Hawassa city.

2.3.2. Study Population

The study used two study populations, namely the case and control populations. For cases sampled, CBHI-insured households from the source population, and controls sampled, non-CBHI-insured households from the source population were the study population.

2.3.3. Study Unit

Household heads of CBHI of the study area for both cases and controls were the study unit.

2.4. Eligibility Criteria

2.4.1. Inclusion Criteria

For cases: - were all selected CBHI insured household heads or spouses.

For controls: - were all selected non-CBHI insured household heads or spouses living for more.

2.4.2. Exclusion Criteria

For cases and controls, all heads or spouses of households who were formally employed and members of Social Health Insurance.

2.5. Sampling Method and Procedures

2.5.1. Sample Size Determination

The sample size was determined using case-control studies, as shown below.

$$\text{Sample size} = \frac{r+1}{r} \frac{(p^*)(1-p^*)(Z_{\beta}+Z_{\alpha/2})^2}{(p_1-p_2)^2}$$

r = Ratio of control case, 1 for an equal number of cases and controls

p = average proportion exposed = proportion of exposed case + proportion of control exposed / 2

Z_{β} = standard normal variant for power = 80 it is 0.84

$Z_{\alpha/2}$ = standard normal variant for the level of significance

$P_1 - P_2$ = effect size

So, fix the power of study at 80% and assuming expected proportions in the case group and control group are 0.35 and 0.20, respectively, and want to have an equal number of cases and controls. The sample size per group was 200 for the case and 200 for the control. The total sample size was 400.

2.5.2. Sampling Technique

The study took place in 30% of the 32 kebeles, which amounts to 10 kebeles. We then distributed the sample according to the population size of each kebele. The sampling frame, or the list of all households, for cases was provided by the district CBHI offices, while for controls, it came from the family folder of the respective health posts. In the end, we selected both cases and controls through simple random sampling from the framed list using a computer-generated random number.

2.6. Study Variables

2.6.1. Dependent Variable

Community-based health insurance enrolment status.

2.6.2. Independent Variables

- 1) *Socio-demographic factors of CBHI*: Age, sex, educational status, marital status of HH head, residence, family size, employment, and chronic illness.
- 2) *Health facility factors*: Time when membership payments are made, availability of basic laboratory service, and availability of drug supplies in the health facility.
- 3) *Behavioral factors*: Awareness of the program, knowledge, and attitude toward CBHI management.
- 4) *Perceived compassionate and respectful care at public health facility*: Compassionate care and respectful care. Or not.

2.7. Data Collection Procedures and Quality Assurance

A structured, face-to-face interview questionnaire which was adapted from study will be used to collect data from the study participants [9]. To ensure the quality of data before the actual data collection, pre-testing was done on 5% that was twenty of the total study subjects, in Shashemene town. Wording, organization, and structuring of the questionnaire will be checked and amended accordingly. The data were checked for completeness, accuracy, and clarity by the researcher. Complete questionnaires were submitted and reviewed daily to avoid loss of data by the researcher. Close supervision and daily information exchange, including telephone, was used as a means to correct problems in the course of the data collection. The questionnaires focused on the following areas: 1. Socio-demographic characteristics of households, 2. Socio-economic status of households (HH characteristics for wealth estimation), 3. Individual HH variables (awareness about CBHI, attitude towards CBHI), 4. HH level variables and health service-related variables. Households (both members/cases and non-members/controls) were chosen using simple random sampling (computer-generated random numbers) from the family folder at each kebele health post and the registration book of CBHI members from each sub-city CBHI office (for cases). Health extension workers from each selected kebele served as guides for data collectors to reach each selected household for both cases and controls.

2.8. Data Management and Analysis

After collecting the data, it was checked for completeness and consistency. Each entry was coded before data entry. The data was entered and cleaned using EpiData version 4.6. Descriptive statistics summarized the data for various variables using frequency, percentage, or proportions and descriptive

summaries. Binary logistic regression identified variables associated with CBHI enrollment. Variables that showed significance with p-values of 0.2 or less in bivariate logistic regression were chosen for multivariable logistic regression. Finally, adjusted odds ratios with 95% confidence intervals and p-values under 0.05 were used to determine significant independent predictors of CBHI membership.

2.9. Ethical Considerations

The study started after receiving an ethical clearance letter from the Pharma College. We also got a permission letter from the Pharma College Dean's Office and the Head of Registrar. We explained the purpose and benefits of the study to the participants, and we obtained their full cooperation along with both verbal and written consent. We made sure to keep the collected information confidential and private. A permission letter was obtained from the Hawassa City Health Department. The study has no risks and some unique benefits. Finally, after confirming that the study posed no risks and outlining its benefits, we obtained verbal consent from the subjects right before handing out the questionnaire. We respected the respondents' right to refuse to answer any or all questions. A copy of the final paper of the study was given to the Pharma College, Department of Public Health.

2.10. Operational Definitions of Key Terms

- 1) *Attitude*: The attitude of insured and non-insured members towards CBHIS was measured using a 5-point Likert scale. There were 10 items to assess the CBHI benefit packages.
- 2) *Illness experience*: In this study, it was determined by whether the household head or any family member had been ill or in poor health. This included at least one of the following conditions: staying in bed, being restricted from normal activities (such as work or school), being able to perform normal activities but with reduced capacity, or having chronic conditions like diabetes, hypertension, HIV/AIDS, or epilepsy in the three months leading up to the data collection date.
- 3) *CBHI enrollment* refers to agreeing to and using a community-based health insurance plan voluntarily. This includes individuals who have a membership card and regularly renew it. We will assess whether a household is an active member by asking a simple Yes or No question during data collection.
- 4) *Cases or members enrolled in CBHI* are those from the community who have paid the premium and registered with CBHIS. This information is available in the report folder at the health post, contractual health facility, or district CBHI office. The project investigator used these sources to take samples during data collection.
- 5) *Controls/non-members (non-enrolled) to CBHI*: These

are community members who have not paid the premium or registered for CBHIS. They do not appear on the health post or contractual health facility member lists, but they are included in the family folder associated with the sample the PI selected during data collection.

- 6) *Good knowledge*: Respondents who correctly answered six or more out of ten knowledge questions were considered to have good knowledge of CBHI, based on the data collected.
- 7) *Poor knowledge*: Respondents who correctly answered fewer than six out of ten knowledge questions were deemed to have poor knowledge of CBHI, based on the data collected.
- 8) *Attitude*: Assessed using Likert's scale. The questions on the scale had positive and negative responses that ranged from strongly agree, agree, neither agree nor disagree, disagree, to strongly disagree. The scoring system applied to respondents' answers was as follows: strongly agree 5, agree 4, neither agree nor disagree 3, disagree 2, and strongly disagree 1. We summed the responses to obtain a total score for each respondent. We calculated the median score. Those who scored above the median were considered to have a positive attitude, while scores below the median indicated a negative attitude toward CBHI.
- 9) *Compassionate care*: If the respondents scored at the median or higher on compassionate assessment items.
- 10) *Not Compassionate care*: If the respondents scored below the median of compassionate assessment items or questions.
- 11) *Respectful care*: If the respondents scored at the median or above on respectful assessment items or questions.
- 12) *Not respectful care*: If the respondents scored below the median of respectful assessment items or questions. The time of membership was when the premium payment for CBHI membership was collected from the household heads.
- 13) *Perception of own health*: Respondents were asked to rate their health and that of their household members on a 5-point scale: Excellent, very good, good, fair, and poor. The answers were then interpreted at each household level to assess their perceived health status.
- 14) *Household wealth status*: This refers to a household's living conditions. It was created using household asset data made up of various indicators taken from EDHS 2016, which were adjusted to fit the local rural context.

Awareness in this study refers to exposure to CBHI or having information about CBHI. It was measured using yes or no questions, with two items addressing general information and its use. Those who answered "Yes" to all items were considered aware, or informed, while those who answered "No" to any of the items were regarded as not aware, or un-informed, about CBHI.

3. Results

3.1. Socio-Demographic Characteristics of Study Participants on CBHI in 3 Sub-Cities, Hawassa, 2023

Among 400 study participants, a total of 400 households in Hawassa city were included. This consisted of 160 cases and 240 controls across three sub-cities: Menehariya, Hak-dar, and Tabour. The response rate was 100%. The demographic data show that the average age for cases was 41 years (SD: +9.4), while the average age for controls was 39 years (SD: +10.6). Regarding sex, 97 (60.3%) of the cases and 114 (47.5%) of the controls were male households. In terms of marital status, the majority of respondents were married, with 63 (39.7%) of cases and 96 (40%) of controls.

Regarding monthly income, 83 (39.7%) cases and 115 (47.9%) controls were the majority ones whose incomes were between 5 to 10 thousands. Regarding the educational status, 63 (39.7%) cases and 96 (40%) controls attended primary school, while 6 (3.5%) cases and 22 (9.5%) controls were those who cannot read or write. According to employment, 63 (39.7%) of cases and 85 (35.4%) of controls were self-employed and merchants, respectively. According to family member 106 (66%) of cases and 115 (48%) of controls have greater than five family members. According to residence/subcity, 60 (29.3%) cases and 88 (36.7%) controls were from Hakdar, which is the majority among others. 56 (35%) cases were enrolled within 3 3-year duration, which was the highest. The majority cases, 90 (47%) and controls, 133 (54%) had not any chronic disease previously (Table 1).

Table 1. Socio-demographic characteristics of Study participants in 3 sub-cities, Hawassa, 2023.

Variable and Category	Cases (N=160)	Control (N=240)
Age		
<24	10 (6.2%)	40 (16.7%)
25–54	120 (75%)	132 (55%)
55–64	26 (16.2%)	56 (23.3%)
65 and above	4 (2.6%)	12 (5%)
sex		
Male	97 (60.3%)	114 (47.5%)
female	54 (34%)	126 (52.5%)
Marital status		
Single	40 (29.3%)	54 (22.5%)

Variable and Category	Cases (N=160)	Control (N=240)
Married	63 (39.7%)	96 (40%)
Divorced	44 (27.5%)	68 (28%)
widowed	13 (3.5%)	22 (9.5%)
Monthly income		
<1000 birr	6 (3.5%)	25 (22.5%)
2001-5000 birr	47 (29.3%)	86 (40%)
5001-10,000 birr	83 (39.7%)	115 (47.9%)
>10,000 birr	24 (27.5%)	14 (9.5%)
Educational status		
Colleague and above	47 (29.3%)	54 (22.5%)
Primary school	63 (39.7%)	96 (40%)
write and read	44 (27.5%)	68 (28%)
Cannot read or write	6 (3.5%)	22 (9.5%)
Employment		
Self employed	63 (39.7%)	65 (27.1%)
NGO	6 (3.5%)	22 (9.5%)
Merchant	44 (27.5%)	85 (35.4%)
Farmer	47 (29.3%)	68 (28%)
Residence		
Tabour	46 (3.5%)	80 (33.3%)
Menhariya	54 (27.5%)	72 (30%)
Hak dar	60 (29.3%)	88 (36.7%)
Duration in CBHI		
3-6 months	30 (18.75%)	
6-12 months	32 (20%)	
1-3 years	56 (35%)	
>3 years	42 (26.25%)	
Family size		
>5	106 (66%)	115 (48%)
<=5	54 (34%)	125 (52%)
Chronic illness		
Yes	70 (53%)	107 (30%)
No	90 (47%)	133 (54%)

3.2. Knowledge Assessing Characteristics of Respondents in 3 Sub-Cities, Hawassa, 2023

Knowledge of respondents about CBHI was evaluated based on the following variables. A participant's response was added up to classify them as having good or poor knowledge of community-based health insurance (Table 2).

Table 2. Knowledge assessing items for participants in 3 sub-cities, Hawassa city, 2023.

Variable	Response	Cases	Controls
Are you aware of the benefits of CBHI?	Yes	122 (75%)	140 (58.3%)
	No	38 (25%)	100 (41.7%)
Do you think that the CBHI scheme will cover the health care services gained by the formally employed and non-employed households once they join the CBHI scheme?	Yes	125 (78%)	146 (60%)
	No	35 (22%)	94 (40%)
Do you think that both the rich and the poor will receive proper healthcare of the same quality when becoming a member of the CBHI scheme?	Yes	104 (65%)	152 (63.3%)
	No	56 (35%)	88 (34.7%)
Do you think that the quality of healthcare services will be almost the same throughout the whole country once the country implements the community-based health insurance?	Yes	115 (71.8%)	136 (56.6%)
	No	45 (28.2%)	104 (43.4%)
Do you have an idea that you will receive services from the referred contracted higher health facilities with no out-of-pocket expenses when your health needs a specialized health care setup?	Yes	118 (73.75%)	151 (62.9%)
	No	42 (26.25%)	89 (37.1%)
Do you know that the community-based health insurance covers the cost of pharmaceutical care and diagnostic tests for referred cases?	Yes	140 (87.5%)	145 (60.4%)
	No	20 (12.5%)	95 (39.6%)
Do you know that the community-based health insurance scheme excludes treatment abroad, kidney dialysis/treatments, artificial teeth, and plastic surgery?	Yes	110 (68.7%)	141 (58.75%)
	No	50 (31.3%)	99 (47.25%)
Do you know that the community-based health insurance scheme pays for the services received from only governmental health institutions?	Yes	125 (78%)	148 (60.8%)
	No	30 (22%)	92 (39.2%)
Do you know that CBHI allows people to have equal/fair access to skilled health professionals?	Yes	116 (72.55%)	156 (65%)
	No	44 (27.5%)	84 (35%)

When the data were computed for assessing knowledge, 75% of participants in the CBHI group and 60% of controls showed good knowledge of CBHI. Meanwhile, 25% of cases and 46% of controls displayed poor knowledge of CBHI (Table 7).

3.3. Health Facility Factors in 3 Sub-Cities, Hawassa, 2023

Table 3. Health facility factors participants in 3 sub-cities, Hawassa city, 2023.

Variable	Category	Case (n=160)	Controls (n=240)
Distance from the health facility	< 1Km	92 (65.7%)	133 (55.4%)
	> 1Km	68 (34.3%)	107 (44.6%)
Waiting for a long time to get a service after reaching the health facility	Yes	90 (56.25%)	107 (50.4%)
	No	70 (43.75%)	133 (49.6%)
The time of membership registration is appropriate	Yes	75 (53.5%)	118 (49%)
	No	85 (46.5%)	122 (51%)

Variable	Category	Case (n=160)	Controls (n=240)
Getting the drug prescribed from the public health facility	Yes	92 (56.25%)	123 (50.4%)
	No	68 (43.75%)	117 (49.6%)
Getting the laboratory service requested by the health professionals from the public health facility	Yes	89 (63.6%)	131 (54.5%)
	No	61 (36.4%)	109 (45.5%)

Ninety-two (56%) and 123 (50.4%) of the cases and controls, respectively, perceive that they get the drug prescribed from the public health facility. Seventy-five (53.5%) of the cases and 118 (49%) controls HHs, respectively, reported that the time of membership is appropriate (Table 3).

3.4. Attitude Assessing Characteristics of Respondents in 3 Sub-Cities, Hawassa, 2023

A Likert scale was used to assess how respondents feel about community-based health insurance (CBHI). We prepared nine statements related to CBHI to evaluate their atti-

tudes. Respondents showed strong agreement for a positive attitude at one end of the scale and strong disagreement for a negative attitude at the other end. Each respondent's score was calculated by adding up their responses. A score of one (1) indicated the least favorable attitude, while a score of five (5) indicated the most favorable attitude, resulting in a total score that reflected their view of the scheme. The scoring system used was: strongly agree 5, agree 4, neither agree nor disagree 3, disagree 2, and strongly disagree 1. We calculated the median score. Those who scored above the median were seen as having a positive attitude, while scores below the median indicated a negative attitude toward CBHI (Table 4).

Table 4. Attitudes assessing items participants in 3 sub-cities, Hawassa city, 2023.

Variable	Response	Cases N (5%)	Controls N (%)
Do you think that CBHI benefit packages are adequate to meet the health care needs of insured households?	Strongly Disagree	12 (8%)	34 (14%)
	Disagree	18 (10%)	3 (1.3%)
	Neutral	53 (33.3%)	120 (50%)
	Agree	58 (36.2%)	87 (36.3%)
	Strongly agree	19 (11.8%)	6 (2.4%)
Do you think the CBHI management is trustworthy?	Strongly Disagree	13 (8.1%)	35 (14.6%)
	Disagree	17 (10.6%)	4 (1.4%)
	Neutral	52 (33%)	120 (50%)
	Agree	58 (36.2%)	86 (36.2%)
	Strongly agree	20 (12%)	5 (2%)
Do you believe that the quality of health care services is good (waiting time, availability of drugs, diagnostics)?	Strongly Disagree	13 (8.1%)	35 (14.6%)
	Disagree	18 (11%)	3 (1.2%)
	Neutral	53 (33.1%)	120 (50%)
	Agree	57 (36%)	87 (36.2%)
	Strongly agree	19 (11.8%)	5 (2%)
Have you felt stigmatized because of your relative's Mental illness?	Strongly Disagree	10 (6.25%)	35 (14.6%)
	Disagree	15 (9.1%)	3 (1.2%)
	Neutral	53 (33.1%)	110 (45.6%)
	Agree	62 (38.75%)	87 (36.2%)
	Strongly agree	19 (11.8%)	15 (9.4%)

Variable	Response	Cases N (5%)	Controls N (%)
Do you think CBHI has the potential to promote healthcare-seeking behavior from modern healthcare institutions?	Strongly Disagree	13 (8.1%)	35 (14.6%)
	Disagree	17 (10.6%)	3 (1.2%)
	Neutral	53 (33.3%)	120 (50%)
	Agree	58 (36.2%)	87 (36.2%)
	Strongly agree	19 (11.8%)	5 (2.%)
Do you think CBHI has the potential to promote healthcare-seeking behavior from modern healthcare institutions?	Strongly Disagree	13 (8.1%)	35 (14.6%)
	Disagree	17 (10.6%)	13 (5.4%)
	Neutral	53 (33.3%)	120 (50%)
	Agree	58 (36.2%)	77 (32%)
	Strongly agree	19 (11.8%)	5 (2.%)
Do you think CBHI protects from unaffordable healthcare expenditures?	Strongly Disagree	16 (8.1%)	45 (18.7%)
	Disagree	17 (10.6%)	3 (1.2%)
	Neutral	53 (33.3%)	100 (41.6%)
	Agree	58 (36.2%)	87 (36.2%)
	Strongly agree	21 (8%)	15 (6.3%)
Do you think Premium payment for the CBHI scheme is Inexpensive?	Strongly Disagree	13 (8.1%)	35 (14.6%)
	Disagree	16 (10%)	3 (1.2%)
	Neutral	53 (33.3%)	120 (50%)
	Agree	58 (36.2%)	87 (36.2%)
	Strongly agree	20 (12.5.%)	5 (2.%)
Do you think CBHI is not only to promote the health condition of the poor?	Strongly Disagree	13 (8.1%)	35 (14.6%)
	Disagree	20 (12.5%)	3 (1.2%)
	Neutral	50 (31.3%)	120 (50%)
	Agree	58 (36.2%)	87 (36.2%)
	Strongly agree	20 (12.5%)	5 (2.%)
Do you think CBHI is not a means of collecting revenue (profit) for the government?	Strongly Disagree	13 (8.1%)	35 (14.6%)
	Disagree	17 (10.6%)	3 (1.2%)
	Neutral	53 (33.3%)	120 (50%)
	Agree	58 (36.2%)	87 (36.2%)
	Strongly agree	19 (11.8%)	10 (2.%)
Do you think CBHI is trusted to establish equity of service for all households?	Strongly Disagree	13 (8.1%)	10 (4.2%)
	Disagree	17 (10.6%)	23 (9.3%)
	Neutral	43 (26.4%)	100 (41.6%)
	Agree	68 (42.2%)	87 (36.6%)
	Strongly agree	19 (13%)	20 (8.3%)

Finally, the computed data reveal that 92 (56.25%) of cases and 123 (50.4%) of controls have a positive (Favorable) atti-

tude toward CBHI. But 68 (43.75%) of cases and 117 (49.6%) have a negative attitude toward CBHI. The majority of the

controls have a positive attitude, and 117 (49.6%) of them have a negative attitude toward CBHI (Table 7).

3.5. Service Provider's Compassion on CBHI in 3 Sub-Cities, Hawassa, 2023

Table 5. Service provider's compassion assessment items participants in 3 sub-cities, Hawassa city, 2023.

Variable	Response	Case (n=160)	Control (n=240)
At a public health facility, does the healthcare provider properly introduce himself/herself and their status?	Compassionate	98 (61.25%)	126 (52.5%)
	Not compassionate	62 (38.75%)	114 (47.5%)
At a public health facility, does the health care provider call the client by name?	Compassionate	95 (59.4%)	117 (48.75%)
	Not compassionate	65 (40.6%)	123 (51.25%)
At a public health facility, does the healthcare provider actively listen to what the client says?	Compassionate	98 (63.9%)	120 (50%)
	Not compassionate	62 (36.1%)	120 (50%)
At a public health facility, does the healthcare provider show love and tolerance?	Compassionate	90 (56%)	126 (52.5%)
	Not compassionate	70 (44%)	114 (47.5%)
At a public health facility, does the health care provider try to understand the clients' needs?	Compassionate	120 (75%)	125 (52%)
	Not compassionate	40 (25%)	115 (48%)
At a public health facility, does the healthcare provider actively understand the patient's emotions?	Compassionate	98 (63.9%)	126 (52.5%)
	Not compassionate	62 (36.1%)	114 (47.5%)
At a public health facility, does the healthcare provider show relational communication?	Compassionate	95 (59.4%)	126 (52.5%)
	Not compassionate	65 (40.6%)	114 (47.5%)
At a public health facility, do the healthcare providers use supportive words?	Compassionate	99 (64%)	110 (45.8%)
	Not compassionate	61 (35%)	130 (54.2%)

Standard checklist from the national compassionate and respectful care (CRC) training guideline, designed to evaluate how compassionate health workers are perceived. Eight statements were selected to gauge community opinions about the health workforce. Scores at the median or higher were categorized as perceived compassionate, while scores below the median were classified as perceived not compassionate (Table 5).

According to the data collected on perception, 98 (61.25%) of cases and 117 (48.75%) controls perceive that the health workforce is compassionate. Whereas 62 (38.75%) of cases and 123 (51.25%) of controls perceived health care workforces as not compassionate, respectively (Table 7).

3.6. Items to Assess Respect of Health Work Force to Community on CBHI in 3 Sub-Cities, Hawassa, 2023

Standard checklist from the national CRC training guideline to assess how health workers respect the client. Ten statements evaluated how the communities feel about the health workforce. Respondents who scored at or above the median on the respectful assessment items or questions were categorized as perceiving respectful care, while those who scored below the median were categorized as perceiving non-respectful care (Table 6).

Table 6. Service providers' Respect assessment items participants in 3 sub-cities, Hawassa city, 2023.

Variable	Response	Case (n=160)	Control (n=240)
Does the service provider greet the CBHI member client respectfully?	Yes	116 (72.5%)	120 (50%)

Variable	Response	Case (n=160)	Control (n=240)
Does the service provider obtain consent before examination and procedures from CBHI members?	No	44 (27.5%)	120 (50%)
	Yes	120 (75%)	130 (54%)
Does the service provider ensure the confidentiality of the CBHI member patient?	No	40 (25%)	110 (46%)
	Yes	100 (62.5%)	100 (42%)
Does the service provider maintain privacy for CBHI members while providing clinical care?	No	60 (37.5%)	140 (58%)
	Yes	110 (68.75%)	125 (52%)
Does the service provider verbally abuse patients?	No	50 (31.25%)	115 (48%)
	Yes	110 (68.75%)	129 (53.75%)
Does the service provider treat CBHI member patients equally without discrimination?	No	50 (31.25%)	111 (46.25%)
	Yes	110 (68.75%)	125 (52%)
Does the service provider respond promptly and professionally when CBHI member patients ask for help?	No	50 (31.25%)	115 (48%)
	Yes	117 (73%)	117 (48.75%)
Do the service providers physically abuse CBHI member clients?	No	43 (27%)	123 (51.25%)
	Yes	110 (68.75%)	120 (50%)
Do the guards receive CBHI member patients and families with respect?	No	50 (31.25%)	120 (50%)
	Yes	80 (50%)	125 (52%)
Does the record officer treat CBHI member patients and families with respect?	No	80 (50%)	115 (48%)
	Yes	110 (68.75%)	130 (54.2%)
	No	50 (31.25%)	110 (45.8%)

The study revealed that 110 (68.75%) of cases, and 125 (52%) controls perceived work force as respectful. Whereas 50 (31.25%) of cases and 115 (48%) controls perceived that health care workers do not show respect (Table 7).

3.7. Perception of Compassionate and Respectful Care, Knowledge and Attitude on Quality of Health Service

On bi-variable analysis, perception of compassion and respect, knowledge, and attitude of study participants are selected for multivariable analysis at p -value < 0.25 and 95% CI (Table 7).

Table 7. Perception of care and behavioral factors among participants in 3 sub-cities, Hawassa city, 2023.

Variable	Category	Case (n=160)	Control (n=240)
Perceived compassionate care	Compassionate	98 (61.25%)	117 (48.75%)
	Not compassionate	62 (38.75%)	123 (51.25%)
Perceived respectful care	Respectful	110 (68.75%)	125 (52%)
	Not respectful	50 (31.25%)	115 (48%)
Knowledge on CBHI	Good	120 (75%)	146 (60%)
	Poor	40 (25%)	96 (40%)
Attitude toward CBHI	Positive	90 (56.25%)	121 (50.4%)
	Negative	70 (43.75%)	119 (49.6%)

3.8. Factors Associated with Community-Based Health Insurance Enrollment of the Households of 3 Selected Sub-Cities, Hawassa, 2023

Educational status, family size, knowledge of community-based health insurance, and perception of respect were factors significantly associated with determinants of enrollment in the community-based health insurance program among households in 3 sub-cities, Hawassa city, 2024. The study participants who had secondary and above, primary education, and those who can read and write were 4.8, 3.9, and 3 times more likely to have community-based health insurance enrollment compared to those who cannot read and

write, respectively [(95%CI: 1.592, 14.623), (95%CI: 1.283, 11.852), and (95%CI: 1.046, 9.355)].

In this study, the study participants who had a larger family (≥ 5) were 2.3 times more likely to be enrolled in CBHI compared to those who had a smaller family size (<5) [AOR=2.302 (95% CI: 1.439, 3.693)]. The higher probability of CBHI enrollment was observed among household heads who have good knowledge [AOR=2.959 (95% 1.597, 5.482)] compared to those who had poor knowledge. Another finding in this study was that the study participants who perceived respectful care were 1.8 times more likely to be registered in CBHI compared to those who had not perceived respectful care [AOR=1.819 (95% CI: 1.166, 2.835)].

Table 8. Multivariable analysis of independent factors of CBHI enrollment at 3 selected sub cities, Hawassa, 2023.

Variable and response	Cases (160)	Controls (240)	COR	AOR	P-value
Educational status					
Colleague and above	47 (29%)	54 (22%)	3.191 [1.193, 8.535]	4.825 [1.592, 14.623]	0.005
Primary school	63 (40%)	96 (40%)	2.406 [0.924, 6.266]	3.900 [1.283, 11.852]	0.016
Write and read	44 (27%)	68 (28%)	2.373 [0.892, 6.316]	3.129 [1.046, 9.355]	0.04
Cannot read or write	6 (4%)	22 (10%)	1	1	
Family size					
>5	106 (66%)	115 (48%)	2.134 [1.410, 3.228]	2.302 [1.439, 3.693]	0.001
≤ 5	54 (34%)	125 (52%)	1	1	
Chronic illness					
Yes	70 (53%)	107 (30%)	0.966 [0.256, 1.861]	0.761 [0.191, 1.591]	0.082
No	90 (47%)	133 (70%)	1	1	
Knowledge to ward CBHI					
Good	120 (75%)	146 (60%)	1.932 [1.242, 3.005]	2.959 [1.597, 5.482]	0.001
Poor	40 (25%)	96 (40%)	1	1	
Attitude toward CBHI					
Positive	90 (56.25%)	121 (50.4%)	1.307 [0.875, 1.954]	1.041 [0.593, 1.830]	0.888
Negative	70 (43.75%)	119 (49.6%)	1	1	
Drug obtained from P.H.F					
Yes	92 (56.25%)	123 (50.4%)	1.286 [0.775, 1.854]	1.184 [0.493, 1.330]	0.564
No	68 (43.75%)	117 (49.6%)	1	1	
Perception of Compassion					
Compassionate	98 (61.25%)	117 (49%)	1.661 [1.010, 3.619]	1.420 [0.904, 3.986]	0.084
Not compassionate	62 (38.75%)	123 (51%)	1	1	
Perception of respect					
Respectful	110 (68.75%)	125 (52%)	2.024 [1.331, 3.079]	1.819 [1.166, 2.835]	0.008

Variable and response	Cases (160)	Controls (240)	COR	AOR	P-value
Not respectful	50 (31.25%)	115 (48%)	1	1	

4. Discussion

This study revealed that the educational status of household heads, family size, knowledge, and the HH head's perception of Respectful care were independent determinants for the community-based health insurance enrollment in Hawassa City, in the selected 3 sub-cities.

This study revealed that having secondary school and above, primary education, and those who read and write have a positive association with CBHI enrollment. This finding is consistent with the study conducted in western Ethiopia [10], East Wollega (Oromia Regional State) [11], and Senegal [12]. The likelihood of attending secondary and above, primary education, and those who can read and write were 4.8, 3.9, and 3 times more likely to be enrolled in CBHI than the study participants who cannot read and write, respectively. This could be because those who are educated can understand the CBHI scheme principle and benefit properly.

In this study, family size is an interesting variable (associated factor) that the results of the multiple logistic regression analysis revealed that respondents with larger families (greater than or equal to five) were 2.3 times more likely to be enrolled for community-based health insurance than respondents with smaller households. This result agrees with the study done on determinants of willingness to pay for community-based health insurance scheme among households in rural community of southern Ethiopia [13, 14], willingness to pay for community-based health insurance among households in the rural community of Fogera District, North [15], a study done in Tanzania that the determinants of community health fund membership [16] and Nigeria (Edostate) by Oriakhi et al. [17], where the willingness to pay of the rural community was influenced by household size. This might be a result of the high financial burden faced by large households when seeking health care services.

In this study, the knowledge of household heads is strongly linked to enrollment in community-based health insurance (CBHI). Having a good understanding of CBHI increases the likelihood of enrollment three times compared to having poor knowledge. This finding is consistent with studies done in North East and North West Ethiopia [11]. This may be because people with good knowledge can ask for details about the package benefits, get convinced, and choose to enroll in CBHI. The views of household heads on respectful care were found to significantly affect enrollment in the CBHI scheme. Community members see the health workforce as respectful; those who perceive it as respectful are 1.8 times more likely to enroll than those who see it as

disrespectful. Similarly, a study conducted in Ghana shows that perceptions related to providers influence enrollment in health insurance [18]. This could be because the more the community feels that health care providers are respectful, the more likely they are to enroll in the CBHI scheme to use public health care services.

5. Strengths and Limitations of the Study

5.1. Strengths

This study included a systematic description of community-based health insurance enrollment and non-enrollment among households in Hawassa City. The study only involved one center, so its conclusion might not apply to other contexts. As a result, it offers background information that will support and increase awareness of and interest in the field of study.

5.2. Limitations of the Study

This research is not free of limitations: -recall bias, since some of the data were collected through interviewing the respondents.

6. Conclusion and Recommendations

6.1. Conclusion

The study identified key factors that influence CBHI enrollment. Educational level, knowledge, family size, and perception of respectful care significantly affected CBHI enrollment status.

6.2. Recommendations

According to the above findings, the responsible bodies, especially the Hawassa city health department, health offices, and health facilities, should:

- 1) Assess how health workers provide respectful care on a regular basis.
- 2) Help the community understand the CBHI benefit package.
- 3) Improve the community's knowledge of the CBHI benefit package through regular community discussions.
- 4) Evaluate the health workforce's respectful care and its effect on drawing the community to enroll in CBHI.
- 5) Prepare and share information about CBHI enrollment,

especially targeting uneducated heads of households, based on their understanding.

- 6) Focus on encouraging enrollment in the insurance program for those with smaller families.
- 7) Offer personalized education for the community about the CBHI benefit package.
- 8) Confirm the health care workforce's provision of respectful care and take appropriate action.

Abbreviations

AOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crude Odds Ratio
CBHI	Community-Based Health Insurance
OPP	Out-of-Pocket Payment
SPSS	Statistical Package for Social Science
SHI	Social Health Insurance
SNRS	Sidama National Regional State

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Author Contributions

Mulugeta Edao Shate: Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration.

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Data and Materials Availability

We described all the relevant information in the manuscript, but the refined dataset can be obtained from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflicts of interest.

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