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Factors associated with Household Satisfaction with Community Based Health Insurance and Policy Implication in Southern Ethiopia: A cross-sectional Study

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Abstract

Ethiopia has been implementing the CBHI program since 2011 in an effort to increase access to healthcare and improve universal health coverage by lowering costs for low-income families. Research on household satisfaction with health care is still lacking. The major objective of this study is to assess the level of household satisfaction with community-based health insurance services and related factors. A multistage sampling procedure was used to select participating families. In each of the selected kebeles, 406 households participating in the CBHI program were selected by simple random sampling according to the population proportional to sample size (PPS). Primary information was collected using a pre-tested questionnaire completed by an interviewer. Bivariate and multivariable logistic regression analysis as well as descriptive statistics were carried out. To identify independent predictors of household satisfaction with the CBHI, p-values <0.05 and 95% confidence intervals were used. The finding of this study showed that, household satisfaction with the CBHI scheme was moderate in Southern Ethiopia. Age, marital status, payment fairness, healthcare coverage, waiting time, service quality, and drug availability were significant predictors of satisfaction with CBHI service. This study recommends that comprehensive health care coverage, e.g., for non-communicable diseases (chemotherapy, kidney disease, diabetes, hypertension, and others) and major surgeries, as well as improvements in overall services and their quality, are critical to increasing satisfaction in the region.

Keywords/Phrases: Community-based health insurance, Household satisfaction, Southern Ethiopia

1 Introduction

1.1 Background

As part of the Sustainable Development Goals, the world community pledged to achieve universal health coverage by 2030. Despite this dedication, half of the world's population still does not have access to basic medical care (Asante, Price, Hayen, Jan, & Wiseman, 2016; Dieleman *et al*., 2018; Kutzin, 2013). Consequently, many individuals are driven into poverty due to the necessity of allocating a significant portion of their household budgets to healthcare (Asante, Price, Hayen, Jan, & Wiseman, 2016; Dieleman *et al*., 2018; Kutzin, 2013).

Designing an adequate health financing system in developing countries, particularly low-income ones, remains challenging and is a topic of intense discussion. According to Mebratie, Sparrow, Yilma, Alemu, and Bedi (2015), this problem is caused by a shortage of financial resources, slow economic growth, limitations on the public sector, and restricted organizational capacity. Healthcare spending

adversely affects the lower socioeconomic sectors of society, leading to dire living conditions for many households. Every year, some 150 million individuals worldwide suffer from financial difficulties, and about 100 million of them—the majority of whom live in developing nations—are forced into poverty as a result of high healthcare costs (Asante *et al*., 2016; Dieleman *et al*., 2018; Kutzin, 2013). In sub-Saharan Africa, where resources are scarce, over 90% of financial difficulties stem from healthcare and its associated impacts (Maeda *et al*., 2014; Xu *et al*., 2007). Between 7% and 13% of households in the Middle East and North Africa experience catastrophic medical costs (Elgazzar *et al*., 2013).

Ethiopia is striving for universal health coverage (UHC), which includes high-quality healthcare that is accessible, cheap, and acceptable to every household (FDRE MoH, 2015/16). Ethiopia has established comprehensive and long-lasting financial risk protection through a community-based health insurance (CBHI) program as it is an essential part of UHC. This initiative aims to promote financial protection, facilitate cost-sharing between the government and citizens, ensure equitable access to healthcare, foster social inclusion, and mobilize domestic resources (Solomon, Hailu, & Tesfaye, 2011).

CBHI, which is based on the ideas of social solidarity and mutual aid, is mainly intended for people who don't have access to public, private, or employer-sponsored health insurance and who live and work in rural or urban informal sectors. It serves as an alternative financing method that is controlled, established, and managed by its members through contributions of a specified amount of money (Chankova, Sulzbach, & Diop, 2008; Tabor, 2005; Uzochukwu *et al*., 2010). In the event of illness, it aims to mitigate unpredictable or high healthcare costs through regular premiums (Guide, 2006).

1.2 Problem Statement

Improved services are necessary for client satisfaction and the long-term viability of the CBHI program since CBHI subscribers demand higher-quality care. Although research on health insurance satisfaction is ongoing, existing studies indicate that satisfaction levels vary by region (Assefa & Mosse, 2011; Devadasan *et al*., 2011; Naseer, Zahidie, & Shaikh, 2012). a research investigation conducted in Nigeria revealed that 42.1% of participants were not happy with their health insurance plan (Devadasan *et al*., 2011). In contrast, 54.7% of satisfaction rate was reported among households enrolled in CBHI in southwest Ethiopia (Mitiku Kebede & Geberetsadik, 2019).

Household healthcare service satisfaction is a multidimensional concept that encompasses clients' perceptions, expectations, and experiences (Naseer *et al*., 2012; Nyandekwe, Nzayirambaho, & Kakoma, 2014). It is influenced by service quality, customer expectations, personal disappointments, and the feelings experienced during service delivery (Al-Abri & Al-Balushi, 2014; Assefa & Mosse, 2011; Devadasan *et al*., 2011). Understanding insured household satisfaction and its influencing factors provides valuable evidence for policy and decision-making (Mohammed, Sambo, & Dong, 2011). Additionally, customer satisfaction studies amplify service users' voices and validate their experiences, contributing to improved healthcare planning (Bekele *et al*., 2008; Kuzma *et al*., 2012).

The primary reasons for dissatisfaction with healthcare services include a lack of medications, long waiting times, discourtesy from facility staff, and inadequate availability of diagnostic services (Bekele *et al*., 2008). Because CBHI members must pay for prescription drugs, diagnostics, and other medical services at non-contracted facilities out of pocket, these problems are especially difficult for them (Nyandekwe *et al*., 2014). This leads to additional costs and increased dissatisfaction among CBHI program members. In order to address these problems and preserve the allure of contracted care, surveys in this field are crucial for evaluating home satisfaction with CBHI and associated community factors.

Studies on Ethiopian households' satisfaction with CBHI services are very scarce (Badacho, Tushune, Ejigu, & Berheto, 2016; Mitiku Kebede & Geberetsadik, 2019). There are methodological and measurement shortcomings, and the research field is still understudied. In order to improve household satisfaction and acceptance of the CBHI program after health service visits in southern Ethiopia, this study aims to measure satisfaction levels, evaluate the factors associated with household satisfaction

with the CBHI scheme, and offer recommendations to policymakers and program designers.

2 Materials and Methods

2.1 Description of the study area

In the southern region of Ethiopia, a cross-sectional community-based survey was carried out between February 2021 and December 2022. The Southern Nations, Nationalities, and Peoples' Region (SNNPR) is one of the regional states of Ethiopia. Kenya (including a small area of Lake Turkana) borders the SNNPR on the south; South Sudan borders it on the west; the Gambela National Regional State borders it on the northwest; the Oromia National Regional State borders it on the north and east; and the Ilemi Triangle, a region that both Kenya and South Sudan claim, borders it on the southwest. There will be 14,929,548 people living in the area, with 7,425,918 men and 7,503,630 women (Central Statistical Authority [CSA], 2007). There are 1,495,557 urban dwellers (10.02%) and 13,433,991 rural persons (89.98%). According to these figures, the SNNPR is the most rural region of Ethiopia. The area is roughly 105,887.18 square kilometers in size, and its population density is 141 persons per square kilometer. The average household size in the 3,110,995 homes in the region is 4.8 people (3.9 people in urban areas and 4.9 people in rural areas).

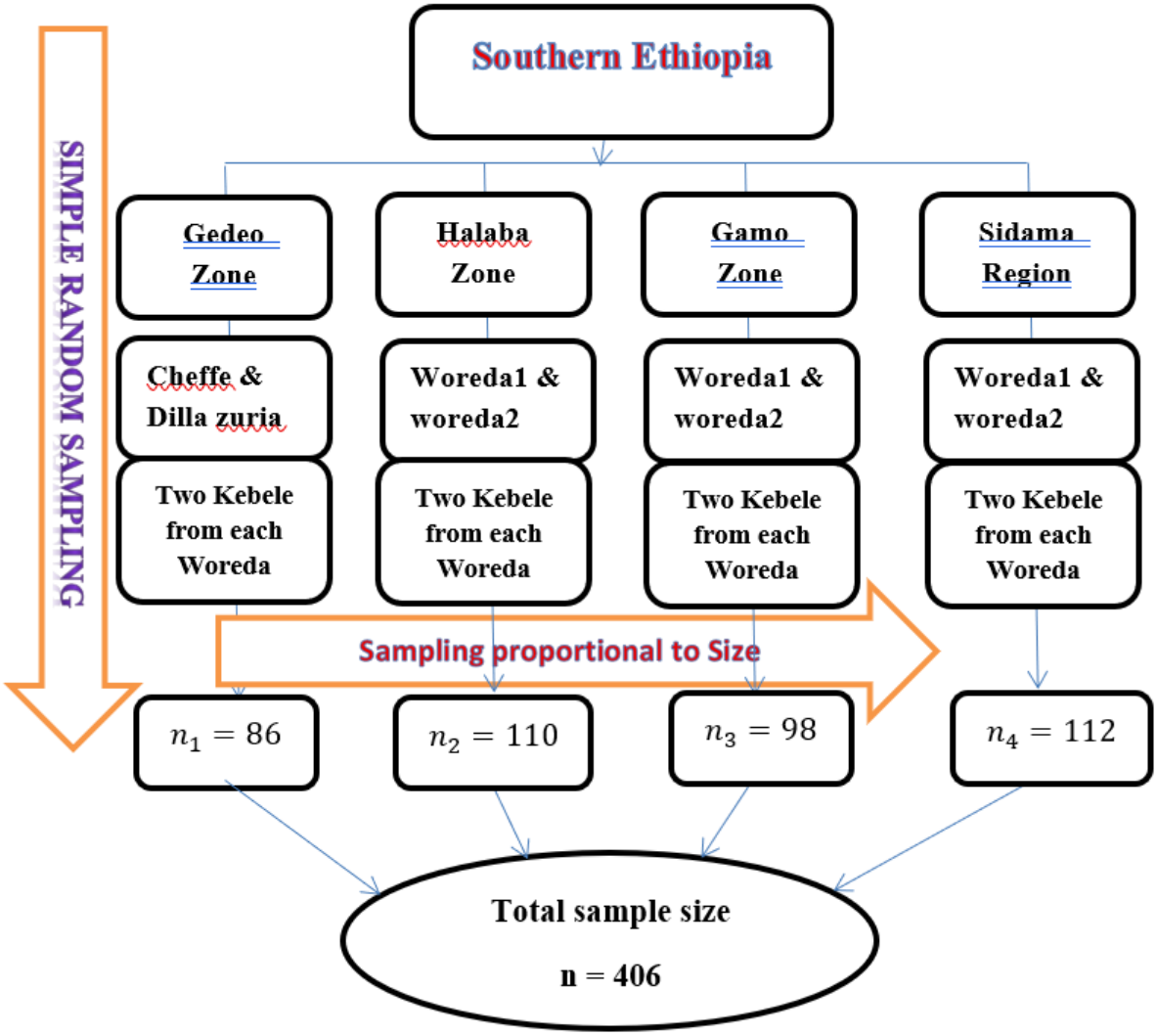

Figure 1. Sampling of study participants in the CBHI program, Southern Ethiopia.
NB. Southern Ethiopia not refer to the region, we used to refer the southern part of Ethiopia

2.2 Study population

The second study area, Sidama, is around 275 kilometers south of Addis Ababa and was named Ethiopia's newest regional state in June 2020. In November 2019, Sidama—which had previously been one of the SNNPR's administrative zones—was officially recognized as Ethiopia's tenth regional state. Sidama is located geographically between latitudes 6°10' and 7°05' north and longitudes 38°21' and 39°11' east. It shares borders with the Gedeo zone and Oromia to the south, the Bilate River to the west, and the Oromia area to the east and south.

The CBHI program has been in place in the region since 2011. There are 3,975 health posts, 731 health clinics, and 79 government hospitals in the area.

All CBHI members who joined or renewed their membership during the study period, as well as those who received medical services, made up the study population. The study eliminated those who had not sought medical attention at least once.

2.3 Sample size determination and sampling techniques

The sample size was calculated using the formula for a single population proportion based on the following assumptions: a respondent satisfaction proportion of 80% from a previous study conducted by other researchers, with a margin of error of 5% at a 95% confidence level. The final sample size was determined to be 406, accounting for a design effect of 1.5 and a non-response rate of 10%.

The participating households were chosen using a multi-stage sampling procedure. Three zones and one region were selected at random to serve as the primary sample units in the first stage. Eight woredas, two from each zone, were chosen at random to serve as secondary sample units in the second stage. From the eight woredas that were picked, 16 kebeles were selected at random for the third stage. The study subjects (households) were chosen using simple random sampling within each specified kebele, adhering to population proportional to sample size (PPS).

2.4 Data collection tools and procedures

A pretested, interviewer-administered questionnaire was used to gather data. The National Health Insurance Agency's CBHI evaluation study in Ethiopia provided the data used to create the survey (Agency, 2015). To collect data, the questionnaire's English version was translated into the local tongue. Five percent of the actual sample size was pretested in two kebeles outside the target area that shared similar sociodemographic traits with the research population. Certain items were added or changed, and any unclear parts were explained, in light of the pretest results. Together, the supervisors and data collectors examined the pretest data to improve comprehension of the data gathering procedure. Five graduate nurses fluent in the local language and two professional nurses with bachelor's degrees in healthcare participated in the data collection. After participants were made aware of the purpose of the study and the importance of their involvement, in-person interviews took place.

Daily checks were performed to ensure that the questionnaires completed by the data collectors were accurate, consistent, and relevant, with oversight from the supervisors and the lead investigator. The next morning, before regular data gathering started, the data collectors received all relevant feedback.

2.5 Ethical Considerations

The Institutional Review Board (IRB) of Dilla University's College of Medicine and Health Sciences granted ethical approval for this study in compliance with the Helsinki Declaration. Additionally, permission letters were acquired from the Zone Health Department, the Woredas Health Department, and the SNNP Regional Health Office. The information was anonymized and all respondent IDs were kept private. Each participant gave verbal informed permission after IRB approval. Literacy levels were taken into account when collecting oral informed consent because the majority of the study group was from a rural location. Participants were still free to decide whether or not to take part in the study.

2.6 Household head's overall satisfaction

One outcome variable was household heads' overall satisfaction with the CBHI program. Nine statements on a five-point Likert scale, from "strongly disagree" to "strongly agree," were used to gauge satisfaction. The answers to each of the nine items were used to gauge the degree of satisfaction. The total of these answers produced a minimum value of 9 and a maximum value of 45. This sum was then converted to yield an individual satisfaction score ranging from 0 to 100%, which was used to calculate a percentage average. Responses of 75% or more on the nine satisfaction items were classified as "satisfied," while those scoring less than 75% were classified as "dissatisfied" (Sagaro, Yalew, & Koyira, 2015).

2.7 Data analysis

Data review, cleaning, and entry into SPSS version 21 were completed prior to analysis. The data was assessed using both descriptive and inferential statistics. Household satisfaction with the CBHI scheme was presented using frequency distributions, percentages, and graphs in the descriptive statistics, utilizing both qualitative and quantitative approaches.

The correlation between each explanatory factor and household satisfaction was assessed using the chi-square test. Factors from the bivariate analysis with a p-value of less than 0.15 were included in the final multivariable logistic regression analysis. The Hosmer-Lemeshow statistic and the coefficient of deviation were used to assess the model's fit, and the results showed a good fit (P = 0.102). The variance inflation factor (VIF) test was used to check potential variables for multicollinearity; no multicollinearity was found (all candidate variables had a VIF value of less than 1.7).

The association between home satisfaction and the CBHI scheme variables was examined using binary logistic regression. If a variable's p-value in the final model was less than 0.05, it was deemed to have a statistically significant relationship with household satisfaction. A 95% confidence interval for the odds ratio was used to assess the association's strength.

3 Results

3.1 Socio-demographic characteristics of the respondents

The distribution of CBHI participants based on their demographic and socioeconomic factors is presented in Table 1. This study included 406 households, achieving a response rate of 100%. Among the respondents, 136 (33.5%) were families headed by females, while the remaining 270 (66.5%) were headed by males. The majority of respondents, 143 (35.2%), were between the ages of 40 and 50. Additionally, 68 respondents (16.7%) were under 34 years, 75 (18.5%) were between 35 and 39, and 120 (29.6%) were over 50.

Of the participants, 236 (58.1%) were primarily from rural areas, followed by 81 participants (20.0%) from semi-urban regions and 89 (21.9%) from urban areas. In terms of occupation, 94 respondents (23.2%) were day laborers, while 202 (49.8%) were farmers. The remaining respondents included 63 (15.5%) who were engaged in trade and 47 involved in other occupations.

Regarding education, 125 households (30.8%) had at least a secondary education, while 122 households (30.0%) had no formal education, and 159 households (39.2%) completed primary school. Additionally, over 349 households surveyed (or 86.0%) were married (Table 1).

3.2 Description of household satisfaction with CBHI services

Most respondents (81.3%) agreed or strongly agreed that service providers are professional and well-trained. Approximately 79.8% of respondents felt that the payment is commensurate with the services provided. Additionally, about 76.6% of respondents agreed or strongly agreed that the timing of premium payments is convenient (Table 2).

Table 1. Southern Ethiopian respondents' socio-demographic details, 2022 (n = 406)

Variables	Category	Frequency	Percent	Variables	Category	Frequency	Percent
Gender	Male	270	66.5	Education	no formal education	122	30
	Female	136	33.5		Primary	159	39.2
Age	less than 34	68	16.7		secondary & above	125	30.8
	35-39	120	29.6	Marital status	Single	22	5.4
	40-50	143	35.2		Married	349	86
	greater than 50	75	18.5		Other	35	8.6
Residence	Urban	89	21.9	Payment fairness	Fair	359	88.4
	semi-urban	81	20		Not fair	46	11.3
	Rural	236	58.1	Service availability	Not enough	204	50.2
Occupation	Farmer	202	49.8		Enough	202	49.8
	Merchant	63	15.5	Service quality	Not good	214	52.7
	Daily laborer	94	23.2		Good	192	47.3
	Other	47	11.6	Drug availability	Inadequate	301	74.1
					Adequate	105	25.9

Table 2. Household satisfaction with CBHI services

Characteristics	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
CBHI benefit packages are sufficient to cover your household's medical expenses.	0	38(9.4)	103(25.4)	239(58.9)	26(6.4)
CBHI management is trustworthy	3(0.7)	25(6.2)	95(23.4)	249(61.3)	34(8.4)
Health care services are of good quality.	2(0.5)	22(5.4)	82(20.2)	268(66.0)	32(7.9)
Long waiting time to get the service	6(1.5)	52(12.8)	109(26.8)	194(47.8)	45(11.1)
Timing of premium payment is convenient	1(0.2)	20(4.9)	74(18.2)	206(50.7)	105(25.9)
Availability of drugs	7(1.7)	60(14.8)	123(30.3)	179(44.1)	37(9.1)
The provider makes a good diagnosis	2(0.5)	24(5.9)	80(19.7)	256(63.1)	44(10.8)
The service providers are professionals/well-trained	3(0.7)	10(2.5)	63(15.5)	256(63.1)	74(18.2)
The payment is commensurate with the service provision	10(2.5)	15(3.7)	57(14.0)	188(46.3)	136(33.5)

N.B. Each cell's numbers represent frequencies, and the percentages are enclosed in parentheses.

3.3 The degree of contentment with the CBHI program

Prior to evaluating respondents' overall happiness with the CBHI system, we used Cronbach's alpha to assess the internal consistency of the scale items measuring satisfaction. The nine-item scale had a Cronbach's alpha of 0.802. With a 95% confidence range (CI) ranging from 76.1% to 83.9%, the study found that 58.1% of households were pleased with CBHI health services.

3.4 Factors associated with household satisfaction with CBHI service

Multivariable analysis ($P < 0.05$) revealed significant associations between several variables and satisfaction with CBHI services: respondent age, marital status, payment fairness, healthcare coverage, waiting time, perceived quality of service, and availability of drugs (Table 3).

Table 3. A multivariable logistic regression analysis on variables related to the general level of home satisfaction in Southern Ethiopia

Variables	Satisfaction		COR (95% CI)	AOR(95% CI)
	Dissatisfied	Satisfied		
Gender				
Male	106	164	1.375(0.907, 2.085)	0.988 (0.553, 1.767)
Female	64	72	1	1
Household head age				
Less than 34	33	35	0.669(0.344, 1.300)	0.458 (0.186, 1.132)
35-39	62	58	0.590(0.328, 1.060)	0.482 (0.234, 0.993)*
40-50	46	97	1.329(0.743, 2.380)	1.095 (0.549, 2.182)
Greater than 50	29	46	1	1
Residence				
Urban	28	61	1.468(0.875, 2.463)	2.050 (0.937, 4.486)
Semi-urban	47	34	0.487(0.292, 0.813)	1.091 (0.517, 2.303)
Rural	95	141	1	1
CBHI service package awareness				
Aware			7.312(1.581, 33.819)	3.292 (0.537, 20.171)
Not aware			1	1
Payment fairness				
Fair	136	223	4.288(2.186, 8.412)	3.179 (1.480, 6.829)*
Not fair	33	13	1	1
Education				
No formal education	51	71	0.992(0.598, 1.645)	1.014 (0.504, 2.040)
Primary	67	92	0.978(0.608, 1.573)	0.865 (0.481, 1.557)
Secondary and above	52	73	1	1
Marital status				
Single	12	10	1.410(0.477, 4.168)	1.804 (0.444, 7.325)
Married	136	213	2.65(1.292, 5.438)	3.027 (1.194, 7.674)*
Other (divorce/widow)	22	13	1	1
Occupation				
Farmer	74	128	1.174(0.613, 2.246)	1.339 (0.567, 3.164)
Informal sector operator	34	29	0.579(0.269, 1.243)	0.663 (0.269, 1.634)
Daily laborer	43	51	0.805(0.396, 1.637)	0.802 (0.344, 1.870)
Other	19	28	1	1
Health care coverage				
Not enough	92	112	0.387(0.255, 0.587)	0.570 (0.337, 0.964)*
Enough	78	124	1	1
Waiting time				
Waiting less than 30 minutes	61	136	2.430(1.619, 3.647)	1.961 (1.223, 3.146)*
Waiting more than 30 minutes	109	100	1	1
Perceived Service quality				
Not good	121	114	0.378(0.249, 0.575)	0.593 (0.353, 0.997)*
Good	49	122	1	1
Drug availability				
Inadequate	149	151	0.25(0.148, 0.425)	0.277 (0.152, 0.505)*
Adequate	21	85	1	1

Families who agreed with the fairness of CBHI premium payments were three times more likely to be satisfied than those who disapproved, according to the multivariable logistic regression results (AOR = 2.978; 95% CI: (1.394, 6.36)). Furthermore, compared to respondents who were divorced or widowed, married respondents were around three times more likely to be satisfied with CBHI services (AOR = 3.228; 95% CI: (1.279, 8.151)).

The likelihood of satisfaction was 1.96 times higher among those who received treatment within 30 minutes compared to those who waited longer (AOR = 1.961; 95% CI: (1.223, 3.146)). Participants over 50 were more likely to be happy with CBHI services than those between the ages of 35 and 39 (AOR = 0.469; 95% CI: (0.229, 0.962)).

Furthermore, the odds ratio for participants who rated the quality of services as poor was 0.39 (AOR = 0.392; 95% CI: (0.243, 0.632)). Those who believed healthcare coverage was insufficient had an odds ratio of 0.57 (AOR = 0.392; 95% CI: (0.337, 0.964)), and participants who perceived drug availability as inadequate had an odds ratio of 0.25 (AOR = 0.25; 95% CI: (0.14, 0.448)), making them less likely to be satisfied with CBHI services compared to their peers.

3.5 The role of CBHI for the Beneficiaries

Participants were asked seven questions on a five-point Likert scale, ranging from "strongly disagree" to "strongly agree," to assess the role of CBHI in service delivery. The majority of respondents (74.4%) indicated that they agreed or strongly agreed that CBHI reduces the cost of healthcare. Additionally, 60.9% of respondents agreed or strongly agreed regarding the accountability and responsiveness of healthcare providers, while 61.6% felt that CBHI improves the provision of reliable healthcare services. In contrast, 55.4% of respondents were neutral or disagreed about the availability of sufficient drugs (Table 4).

Table 4. Respondents' responses about the role of CBHI implementation in southern Ethiopia

Characteristics	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Improved health care access	5(1.2)	39(9.6)	117(28.8)	227(55.9)	18(4.4)
Improved the provision of consistent and timely health care services	5(1.2)	46(11.3)	105(25.9)	235(57.9)	15(3.7)
Improved the availability of health equipment	17(4.2)	42(10.3)	112(27.6)	217(53.4)	18(4.4)
Improved the provision of reliable health care services	9(2.2)	26(6.4)	108(26.6)	241(59.4)	22(5.4)
Raises the accountability and responsiveness of health care service providers	4(1.0)	52(12.8)	103(25.4)	207(51)	40(9.9)
Provides sufficient drugs	26(6.4)	76(18.7)	149(36.7)	136(33.5)	19(4.7)
Reduces expense of health care service	7(1.7)	29(7.1)	68(16.7)	151(37.2)	151(37.2)

N.B. The numbers in each cell are frequencies and the percentages are in parentheses.

4 Discussions

This study aimed to identify factors associated with household satisfaction with the CBHI program. We found that 58.1% of the 406 CBHI members surveyed were satisfied with the program. This result is slightly higher than satisfaction levels reported in Ethiopia's Anilemo district (54.1%) (Addise, Alemayehu, Assefa, & Erkalo, 2021) and Sheko district (54.8%) (Mitiku Kebede & Geberetsadik, 2019). However, our findings are lower than those of previous studies in Ethiopia (Badacho *et al*., 2016; Hailie, Hassen, & Temesgen, 2021).

The discrepancies may be attributed to differences in the definition of satisfaction, the characteristics of study participants, the location, and the time periods of the studies. In some regions, higher satisfaction levels in earlier studies might be linked to the ini-

tial phase of the program and subsequent improvements in the quality of health services. Additionally, some studies were conducted in healthcare facilities, particularly hospitals, which may have influenced participants' experiences with the CBHI program.

4.1 Socio-demography

In this study, age (Addise *et al*., 2021; Badacho *et al*., 2016; Jadoo, Puteh, Ahmed, & Jawdat, 2012; Mohammed *et al*., 2011) and marital status (Jadoo *et al*., 2012; Mohammed *et al*., 2011) were found to be associated with satisfaction with the CBHI program. Households with older heads were more satisfied with care compared to those with younger heads. This may be attributed to the fact that older individuals are generally more likely to experience health issues; as they age, their likelihood of needing healthcare increases, making them more inclined to utilize health services without incurring out-of-pocket expenses for each service.

Several studies have indicated that member satisfaction with health insurance is significantly related to socio-demographic variables such as gender (Jadoo *et al*., 2012), occupation (Badacho *et al*., 2016), and educational status (Jadoo *et al*., 2012). However, this study found that other variables—such as gender, residence, education, and occupation—were not significant predictors of satisfaction. This finding aligns with studies on satisfaction with national health insurance in Ethiopia (Badacho *et al*., 2016) and India (Devadasan *et al*., 2011).

4.2 Waiting time

In this study, we found that respondents who experienced a shorter time between registration and their physician visit were more satisfied than those who faced longer waits. This finding is consistent with previous studies (Molyneux, Hutchison, Chuma, & Gilson, 2007; Robyn *et al*., 2013; Sagaro *et al*., 2015). Thus, prolonged waiting times before a doctor consultation negatively affect customer satisfaction.

4.3 Payment fairness

According to Molyneux *et al*. (2007), participants who agreed with the premium amount were more likely to be satisfied than those who disagreed.

4.4 Health care coverage

The survey also found that individuals were more likely to be satisfied if they agreed with the healthcare coverage than if they disagreed. This is consistent with findings from research carried out in Senegal, Ethiopia, and the Lao People's Democratic Republic (Bodhisane & Pongpanich, 2019; Demissie & Gutema Negeri, 2020; Mebratie *et al*., 2015). A lack of services—such as treatment for noncommunicable diseases (e.g., chemotherapy, kidney disease, diabetes, hypertension) and major surgeries—may negatively impact respondent satisfaction in many developing countries.

4.5 Perceived Service quality

Satisfaction was higher among participants who agreed with the quality of services than among those who disagreed. This result is in line with earlier research from Bangladesh, Ethiopia, and Uganda (Badacho *et al*., 2016; Mitiku Kebede & Geberetsadik, 2019; Nshakira-Rukundo, Mussa, Nshakira, Gerber, & Von Braun, 2019; Sarker *et al*., 2018). The availability of reagents, laboratory services, medical personnel, and equipment, as well as the general quality of health services, may all be related to this relationship.

4.6 Drug availability

The likelihood of satisfaction was higher for those who received sufficient medication than for those who did not. This result is consistent with research from Bangladesh (Sarker *et al*., 2018) and Ethiopia's Anilemo district (Addise *et al*., 2021). This could be due to the fact that participants who did not acquire their prescription drugs at public health facilities were forced to pay more at private pharmacies, which resulted in discontent and a lower level of satisfaction with the CBHI program as a whole.

5 Conclusion

According to this study, 58.1% of households in southern Ethiopia were generally satisfied with the CBHI program. Respondent age, marital status, payment equity, healthcare coverage, waiting time, perceived service quality, and medicine availability were all significant determinants of satisfaction.

In addition to improving the general quality of services, comprehensive healthcare coverage for major procedures and non-communicable diseases (such as chemotherapy, kidney disease, diabetes, and hypertension) is crucial for raising satisfaction in the area.

Policy Recommendations

A study on household satisfaction with the Community-Based Health Insurance (CBHI) program in southern Ethiopia indicates that the program has to be improved through a number of policy changes:

- Expand Healthcare Coverage: The study suggests that policymakers should broaden the CBHI benefit package to include comprehensive services, particularly for major surgeries and non-communicable diseases. Currently, limited coverage for these conditions negatively impacts member satisfaction.
- Boost Service Quality and Drug Access: Enhancing the overall quality of healthcare services and ensuring that essential medications are readily available at health facilities is critical. The research identified that a lack of medications and poor service quality are major causes of dissatisfaction, often forcing members to pay out-of-pocket at private pharmacies.
- Minimize Waiting Times: Long waiting periods for services are a primary source of dissatisfaction. Policies should focus on streamlining patient registration and consultations to reduce the time patients spend waiting to see a doctor.
- Promote Fair and Transparent Payments: The study found that the fairness of payment is a significant factor in member satisfaction. Policies should aim to establish premium payment structures that are transparent and perceived as fair in relation to the services provided.

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Conflict of interest

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References

Ababa, A., & Commission, P. C. (2008). Summary and statistical report of the 2007 population and housing census. population size by age and sex.

Addise, T., Alemayehu, T., Assefa, N., & Erkalo, D. (2021). The magnitude of satisfaction and associated factors among household heads who visited health facilities with community-based health insurance scheme in Anilemo District, Hadiya Zone, southern Ethiopia. *Risk management and healthcare policy*, 145-154.

Agency, E. H. I. (2015). Evaluation of community-based health insurance pilot schemes in Ethiopia. Final Report. 2015 May.

Al-Abri, R., & Al-Balushi, A. (2014). Patient satisfaction survey as a tool towards quality improvement. *Oman medical journal*, 29(1), 3.

Asante, A., Price, J., Hayen, A., Jan, S., & Wiseman, V. (2016). Equity in health care financing in low-and middle-income countries: a systematic review of evidence from studies using benefit and financing incidence analyses. *PloS one*, 11(4), e0152866.

Assefa, F., & Mosse, A. (2011). Assessment of clients' satisfaction with health service deliveries at Jimma University specialized hospital. *Ethiopian journal of health sciences*, 21(2), 101-110.

Badacho, A. S., Tushune, K., Ejigu, Y., & Berheto, T. M. (2016). Household satisfaction with a community-based health insurance scheme in Ethiopia. *BMC research notes*, 9, 1-10.

Bekele, A., Taye, G., Mekonnen, Y., Girma, W., Degefu, A., Mekonnen, A., & Dejene, A. (2008). Levels of outpatient satisfaction at selected health facilities in six regions of Ethiopia. *Ethiopian Journal of Health Development*, 22(1), 42-48.

Bodhisane, S., & Pongpanich, S. (2019). The impact of National Health Insurance upon accessibility of health services and financial protection from catastrophic health expenditure: a case study of Savannakhet province, the Lao People's Democratic Republic. *Health research policy and systems*, 17, 1-14.

Central Statistical Authority (CSA). (2007). Summary and statistical report of the 2007 population and housing census results. Addis Ababa, Ethiopia.

Chankova, S., Sulzbach, S., & Diop, F. (2008). Impact of mutual health organizations: evidence from West Africa. *Health policy and planning*, 23(4), 264-276.

Demissie, B., & Gutema Negeri, K. (2020). Effect of community-based health insurance on utilization of outpatient health care services in Southern Ethiopia: a comparative cross-sectional study. *Risk management and healthcare policy*, 141-153.

Devadasan, N., Criel, B., Van Damme, W., Lefevre, P., Manoharan, S., & Van der Stuyft, P. (2011). Community health insurance schemes & patient satisfaction-evidence from India. *Indian Journal of Medical Research*, 133(1), 40-49.

Dieleman, J. L., Sadat, N., Chang, A. Y., Fullman, N., Abbafati, C., Acharya, P., Alizadeh-Navaei, R. (2018). Trends in future health financing and coverage: future health spending and universal health coverage in 188 countries, 2016–40. *The Lancet*, 391(10132), 1783-1798.

Elgazzar, H., Arfa, C., Salti, N., Majbouri, M., Salehi-Isfahani, D., Raad, F., Mataria, A. (2013). Who pays? Out-of-pocket health spending and equity implications in the Middle East and North Africa. *Health, Nutrition and Population (HNP) discussion paper*;.

Federal Democratic Republic of Ethiopia Ministry of Health. Ethiopian health accounts household health service utilization and expenditure survey 2015/2016; 2017.

Guide, A. P. s. (2006). Health Financing Revisited.

Hailie, M. T., Hassen, S. L., & Temesgen, M. M. (2021). Client satisfaction on community based health insurance scheme and associated factors at Boru Meda Hospital, Northeast, Ethiopia: institutional based cross-sectional study. *BMC health services research*, 21, 1-8.

Jadoo, S. A. A., Puteh, S. E. W., Ahmed, Z., & Jawdat, A. (2012). Level of patients' satisfaction toward national health insurance in Istanbul city (Turkey). *World Applied Sciences Journal*, 17(8), 976-985.

Kutzin, J. (2013). Health financing for universal coverage and health system performance: concepts and implications for policy. *Bulletin of the World Health Organization*, 91, 602-611.

Kuzma, J., Solomom, J., Masono, A., Manari, B., Hopping, J., Pasum, E., . . . Tenge, P. (2012). Assessment of patients' satisfaction with rural health services. *Contemporary PNG Studies*, 17, 60-67.

Maeda, A., Araujo, E., Cashin, C., Harris, J., Ikegami, N., & Reich, M. R. (2014). Universal Health Coverage for Inclusive and Sustainable Development: A Synthesis of 11 Country Case Studies [Une couverture sanitaire universelle pour un développement durable inclusive: Une synthèse de 11 études de cas pays]. *World Bank Publications-Books*.

Mebratie, A. D., Sparrow, R., Yilma, Z., Alemu, G., & Bedi, A. S. (2015). Dropping out of Ethiopia's community-based health insurance scheme. *Health policy and planning*, 30(10), 1296-1306.

Mitiku Kebede, K., & Geberetsadik, S. M. (2019). Household satisfaction with community-based health insurance scheme and associated factors in piloted Sheko district; Southwest Ethiopia. *PloS one*, 14(5), e0216411.

Mohammed, S., Sambo, M. N., & Dong, H. (2011). Understanding client satisfaction with a health insurance scheme in Nigeria: factors and enrollees experiences. *Health research policy and systems*, 9, 1-8.

Molyneux, C., Hutchison, B., Chuma, J., & Gilson, L. (2007). The role of community-based organizations in household ability to pay for health care in Kilifi District, Kenya. *Health policy and planning*, 22(6), 381-392.

Naseer, M., Zahidie, A., & Shaikh, B. T. (2012). Determinants of patient's satisfaction with health care system in Pakistan: a critical review. *Pakistan Journal of Public Health*, 2(2), 52.

Nshakira-Rukundo, E., Mussa, E. C., Nshakira, N., Gerber, N., & Von Braun, J. (2019). Determinants of enrolment and renewing of community-based health insurance in households with under-5 children in rural south-western Uganda. *International journal of health policy and management*, 8(10), 593.

Nyandekwe, M., Nzayirambaho, M., & Kakoma, J. B. (2014). Universal health coverage in Rwanda: dream or reality. *The Pan African Medical Journal*, 17.

Robyn, P. J., Bärnighausen, T., Souares, A., Savadogo, G., Bicaba, B., Sié, A., & Sauerborn, R. (2013). Does enrollment status in community-based insurance lead to poorer quality of care? Evidence from Burkina Faso. *International journal for equity in health*, 12, 1-13.

Sagaro, G. G., Yalew, A. W., & Koyira, M. M. (2015). Patients' satisfaction and associated factors among outpatient Department at Wolaita Sodo University Teaching Hospital, Southern Ethiopia: a cross sectional study. *Sci J Clin Med*, 4(5), 109-116.

Sarker, A. R., Sultana, M., Ahmed, S., Mahumud, R. A., Morton, A., & Khan, J. A. (2018). Clients' experience and satisfaction of utilizing healthcare services in a community based health insurance program in Bangladesh. *International journal of environmental research and public health*, 15(8), 1637.

Solomon, F., Hailu, Z., & Tesfaye, D. (2011). Ethiopia's community-based health insurance: a step on the road to universal health coverage. *Health Financ Gov*, 12.

Tabor, S. R. (2005). Community-based health insurance and social protection policy. *World Bank, Washington: Social Protection Discussion Paper Series*.

Uzochukwu, B., Onwujekwe, O., Eze, S., Ezuma, N., Obikeze, E., & Onoka, C. (2010). Implementing community based health insurance in Anambra State, Nigeria. *CREHS policy brief*.

Xu, K., Evans, D. B., Carrin, G., Aguilar-Rivera, A. M., Musgrove, P., & Evans, T. (2007). Protecting households from catastrophic health spending. *Health affairs*, 26(4), 972-983.