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DETERMINANTS OF COMMUNITY-BASED HEALTH INSURANCE DROPOUT AMONG HOUSEHOLDS IN TEMBARO DISTRICT, KEMBATA TEMBARO ZONE, SOUTHERN ETHIOPIA.

MPH THESIS REPORT

BY:

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DETERMINANTS OF COMMUNITY-BASED HEALTH INSURANCE DROPOUT AMONG HOUSEHOLDS IN TEMBARO DISTRICT, KEMBATA TEMBARO ZONE, SOUTHERN ETHIOPIA

A Thesis report Submitted to the School Public health, college of Health and Medical Sciences, Haramaya University

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I hereby certify that I have read and evaluated this thesis entitled "Determinants of community-based health insurance dropouts among households in Tembaro District, Kembata Tembaro Zone, Southern Ethiopia" prepared under my guidance by Tekeste Samuel. I recommend that it should be submitted as fulfilling the thesis requirement.

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As a member of the Board of Examiners of the MPH Thesis Open Defense Examination, I certify that I have read and evaluated the Thesis prepared by Tekeste Samuel and examined the candidate. I recommend that the thesis be accepted as fulfilling the Thesis requirement for the degree of Master of Health Service Management.

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BIOGRAPHICAL SKETCH

I was born on March 1988 G.C in Soro, Gimbichu, Hadiya, and Southern Ethiopia. I have completed my elementary school in Ambukuna primary school in 1994 E.C. I have attended my Secondary school in Hossana Yaketit 25/67 School in 1995-1996 E.C. Then I joined Arba Minch health Science College by the year 1997 E.C and graduated with in diploma in 2000 E.C. After five year services I joined Rift Vally University, department of public health in service training to attend bachelor degree of science and in July, 2017 G.C graduated fromRift Vally University with BSc degree in Health Service Management. Finally, in 2012 E.C joined Haramaya University for post graduate study in Master of Public Health by health service management**.**

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ABBREVIATIONS AND ACRONYMS

AOR Adjusted Odd Ratio

CBHI Community Based Health Insurance

CI Confidence Interval

COR Crude Odd Ratio

CSA Central Statistical Agency

EDHS Ethiopia Demographic and Health Survey

EHIA Ethiopian Health Insurance Agency

ETB Ethiopian Birr

FDRE Federal Democratic Republic of Ethiopia

FMOH Federal Ministry of Health

GDP Gross Domestic Product

GTP Growth and Transformation Plan

HH Household

HSTP Health Sector Transformation Plan

LMICs Low and Middle-Income Countries

OOP Out-of-Pocket

PCAPrincipal Component Analysis

SSA Sub Saharan Africa

SNNPR Southern Nations, Nationalities, and People Region

UHC Universal Health Coverage

WHOWorld Health Organization

ABSTRACTS

Background: Poor renewal rate is a key challenge facing the sustainability of community-based health insurance (CBHI) schemes in low-income countries including Ethiopia.It is being scaled up in the Tembaro district since 2016, but a significant dropout was observed. Nevertheless, determinants of dropout with the scheme were not well studied in the area. Therefore, this study aimed to generate evidence on determinants of CBHI dropout among households to enhance health service utilization in the study area.

Objective: To identify determinants of community-based health insurance dropouts among households in Tembaro District, Kembata Tembaro Zone, Southern Ethiopia.

Methods:A population-based case-control study was conducted from December 01-20, 2021 in Tembaro district. A total of 350 households (175 cases (droped out) and 175 controls (renewed)) were included in the study. Face to face interview using structured questionnaire was used for household survey to collect data.Descriptive statistics such as frequencies, mean, and standard deviations were computed. Binary logistic regression analysis was fitted and variables with p-value <0.25 in the bivariable logistic regression were entered into the multivariable logistic regression model. The result of the final model was reported using Odds Ratio (OR) along with 95% confidence intervals (CI). Statistical significance was declared at P-value less than 0.05.

Result: Three hundred fifty (175 cases and 175 controls) were employed in the anlysis. Male-headed households[AOR=2.43; 95% CI: 1.02-5.76],households with no formal education and primary education [AOR= 3.20; 95% C.I: 1.39-7.32] and [AOR= 3.16; 95% C.I: 1.39-7.32],good perceived health status [AOR=2.98, 95% CI: 1.40-6.31], households visited the health facilities ≥7 times a year [AOR=4.45, 95% CI: 2.05-9.67], absence of chronic disease[AOR=3.28; 95% CI: 1.59-6.76]and premiumunaffordable[AOR: 2.37, 95% CI: 1.41-3.98]were significantlyassociated with CBHI-dropout.

Conclusion: Sex of the HH head, educational status, perceived health status, frequency health facility visits, having chronic diseaseand the CBHI affordabilitywereindependent predictors of CBHI-dropout. Inter-sectorial collaboration is needed targeting the quality of care for CBHI patients,challenge adverse selectionand male contribution for better adherence of CBHI.

Keywords: Determinants, Community-based health insurance scheme, Dropout, Household, Tembaro

1.INTRODUCTION

1.1. Background

The drop-out of community-based health insurance membership was defined as the households that had not paid the annually premium may not able to pay the outstanding payments with a penalty charge in order to re-gain membership (Mladovsky, 2014).Globally, different forms of community-based health insurance applying the principle of risk-sharing were organized to provide financial risk protection, especially for people in the poor category to ensure that no one is left behind to access health care services (Adebayo et al., 2015; Sarker et al., 2018). Over two billion people live in developing countries with health systems afflicted by inefficiency, inequitable access, inadequate funding and poor quality of health care services (Eckardt et al., 2019). The World Health Organization (WHO) views medical fees as a significant obstacle to healthcare coverage and utilization and has stated that the only way to reduce reliance on direct payments is for governments to encourage the risk pooling prepayment approach (Mathauer et al., 2017). Community-based health insurance (CBHI) schemes are designed to ensure that sufficient resources are made available for members to access effective health care (Mathauer et al., 2017).

In 2005, WHO stated that globally, about 150 million people face catastrophic health expenditures every year and 100 million falls into poverty after paying for health care (Oo et al., 2015).Increased expenditure caused by the need to cope with injury and illness has been identified as one of the main factors responsible for driving vulnerable households further into poverty (Koehlmoos et al., 2016). In 2011, according to the WHO, low-income and middle-income countries have made little progress in this aspect to cover people in the informal sector particularly poor and vulnerable families who often represent the majority of the population (Tangcharoensathien et al., 2010; Wang et al., 2005). In sub-Saharan Africa (SSA), the successful development of CBHI schemes being severely affected by low enrolment rates(Basaza et al., 2007). In addition, even schemes with relatively high enrolment rates often suffer from substantial fluctuations in membership (Khan et al., 2020).

In June 2011, the Government of Ethiopia launched a pilot Community-Based Health Insurance (CBHI) scheme (Mebratie et al., 2014). The scheme was rolled out in 13 rural districts located in four main regions (Tigray, Amhara, Oromiya, and SNNPR) of the country. After three years of piloting, the government has decided to expand CBHI schemes to 80% of woredas and enroll at least 80% of households by 2020 (FMoH, 2015). In Ethiopia, the dropout figures at the national level are not available, the longitudinal data on which the study is based shows that while there has been an overall increase in scheme enrolment over the 2 years, there is a substantial reduction rate with 18% of households who had enrolled in the first year discontinuing their subscription in the second year (Mebratie et al., 2015). High dropout rates threaten the sustainability of such schemes, even if initial uptake is high (Mladovsky, 2014).

In 2018, SNNPR health bureau annual report, CBHI schemes are expanded in 162 woredas in the region and eight of them are found in KambataTembaro zone, from which Tembaro district is one and it has been implementing CBHI since 2016(SnnprHB, 2018).

1.2. Statement of the problem

In developing countries with health systems affected by inefficiency, inequitable access, inadequate funding, and poor quality of health care services (Eckardt et al., 2019).Approximately, 44 million households (over 150 million people) face financial difficulties due to healthcare expenditure(Adebayo et al., 2015).The study report from Kaski India shows 55.6% were dropouts from health insurance program (Paudel et al., 2019). In Africa, population still rely mostly on out of pocket payments (accounting for 30%-85% of total health spending in the poorest countries), which are associated with a higher probability of incurring very expensive health expenditure and impoverishment(Adebayo et al., 2015).

The study report in Senegal rose between 2000 and 2007, while out-of-pocket expenditure as a proportion of private health expenditure dropped from 91.7 to 78.5% (Tangcharoensathien et al., 2010) and dropped from 80.1 to 77.2% in Kenya (Tangcharoensathien et al., 2010). In the case of the Nouna district scheme in Burkina Faso, enrolment lay between 5.2 and 6.3% in the years 2004 to 2006 with a dropout rate of 30.9% in 2005 and 45.7% in 2006(Dong et al., 2009). In Senegal, for three schemes set up between 1997 and 2001, The study reports that in 2009, scheme dropout rates ranged between 58 and 83% in Senegal(Mladovsky, 2014).

In Ethiopian, according to the Ethiopian Health Insurance Agency (EHIA), stated that 72.3% of CBHI members visited health facilities(Pythagore et al., 2015; Jembere, 2018). However, level of drop-out from CBHIs few studies were conducted.A study done in Ethiopia on dropping out of Ethiopia's community-based health insurance scheme shows that, enrolment lay between 33.9% and 50.2% with a dropout rate of 26.5% in Tigray, 49.5% and 62.7% with a dropout rate of 6.9% in Amhara, 44.2% and 44.5% with a dropout rate of 21.2% in Oromiya and 35.3% and 35.4% in the years 2012 to 2013 with a dropout rate of 21.5% in SNNPR at 2014(Mebratie et al., 2015). According to EHIA the estimate shows that an additional 1% of CBHI member households and 5% of non-members dropped below the threshold poverty as result of OOP payments(Pythagore et al., 2015). A community based cross-sectional studies conducted in Ethiopia in Dera district in 2020 and Manna district Southwest Ethiopia in 2020 in household

dropout from community based health insurance scheme revealed 37.3% and 31.9% respectively(Ashagrie et al., 2020; Eseta et al., 2020).

Furthermore, factors affecting CBHI drop-out were examined in Tehuledere district, Northeast Ethiopia and socio-economic barriers, income, age and sex were reported to be the main determinants(Getachew, 2017). In addition to that the house hold members' age, premium fee affordability, occupation, attitude, and knowledge were reported to be significant predictors in Ethiopia(Getachew, 2017). Another study from Bugna district, Northeast Ethiopia that show; attending formal education, history of illness, household size, awareness about the scheme, and wealth status were factors significantly associated with willingness to renew their membership (Minyihun et al., 2019). According to the research done in Dera District, Northwest Ethiopia shows; Length of enrollment, health facility visit, hospital accessibility, knowledge of CBHI, and official position holders used for decision-making are significantly associated with the CBHI dropout rate(Ashagrie et al.,2020). Another cross-sectional study done in Manna district Southwest Ethiopia shows; poor perceived quality of the health service, failure to provide the promised benefit package were the significant contributing determinants of high dropout(Eseta et al., 2020).

According to recent reports of EHIA shows only 77% of CBHI enrolled households are renewing their membership cards that means 23% of them are dropped out from CBHI membership and there is poor CBHI coverage 28% compared to the target set in HSTP, 80%,. This dropout rate is also increased by 10% in Southern region (SNNPR). Due to this the goal of EHIA that want to make total coverage of CBHI in 2025 is in endanger(Teketel A et al.,2021)

According to Ethiopian health insurance report in the study area, 23,919 households are eligible and expected to be enrolled in community based health insurance (CBHI) in 2016. Out of these households in 2016/17 only 10,383 (41.3%) of them were enrolled. Out of enrolled households, 9,177(38.4%) of them were payers while 1,379 (4.8%) of them were user of fee waivers of scheme. According to the scheme report from 10,383 member households 1,025 were remains only in 2021 (388 new enrolled, 637 renewed and 9,746 dropped).

Community based health insurance (CBHI) scheme has been scaled up in this study area since the end of 2016, but a significant dropout was observed. As far as my knowledge is concerned, few related studies were conducted in Ethiopia. Nevertheless, determinants of dropout with the scheme were not well studied in the area.Therefore, this study aims to generate evidence on determinants of CBHI-dropout among households to enhance health service utilization in the study area.

1.3. Significance of the study

The evidence of the factors that drive households to dropout from CBHI is important to enhance health service utilization in the study area.The result of the study will be communicated to Tembaro district CBHI scheme, Tembaro district Administration Kembata Tembaro Zone Health Department and SNNPR Health Bureau to take informed decision on challenges that were dropout of the CBHI.

In addition, the Tembaro District Health Office andDistrict CBHI Scheme will use the findings of the study tomobilize new membership, tosustain the current members and to allowdropped out members to re-join to the scheme. Moreover, provide base line information for further research and indicate the implications for enhancing affordable healthcare services, public health development, which eventually contributes to improvements in the health status of the community.

1.4. Objectives

The objective of the study was to identify the determinants of community-based health insurance (CBHI) dropout among households in Tembaro District, Kembata Tembaro Zone, Southern EthiopiaDecember 01-20, 2021.

2. LITERATUREREVIEW

2.1. Overview of Drop-out from Community-Based Health Insurance

Several studies which were conducted in different parts of the world indicated different levels of household dropout with community based health insurance scheme. The study report from Kaski, in India shows 55.6% were drop outs from health insurance program(Paudel et al., 2019).In the case of the Nouna district scheme in Burkina Faso, enrolment lay between 5.2 and 6.3% in the years 2004 to 2006with a dropout rate of 30.9% in 2005 and 45.7% in 2006(Dong et al., 2009). In Senegal, for three schemes set up between 1997 and 2001, the study reports that in 2009, scheme dropout rates ranged between 58 and 83% in Senegal(Mladovsky, 2014).

The dropping out of Ethiopia's community-basedhealth insurance schemefor 26% of those who dropout, an inability to paythe premium is the main reason for scheme exit(Mebratie, 2015).However, level of drop-out from CBHIs study report shows that, enrolment lay between 33.9% and 50.2% in the years 2012 to 2013 with a dropout rate of 26.5% in Tigray, 49.5% and 62.7% in the years 2012 to 2013 with a dropout rate of 6.9% in Amhara, 44.2% and 44.5% with a dropout rate of 21.2% in Oromiya and 35.3% and 35.4% in the years 2012 to 2013 with a dropout rate of 21.5% in SNNPR at 2014(Mebratie, 2015). In general, dropping out of Ethiopia's community-based health insurance schemedocumented that enrolment after inception increase from 41% to 48% a year later. Of those whoenrolled in the first year only 82% renewed their subscriptions(Mebratie, 2015).A community based cross-sectional studies conducted in Ethiopia in Dera district in 2020 and Manna district Southwest Ethiopia in 2020 in household dropout from community based health insurance scheme revealed 37.3% and 31.9% respectively(Ashagrie et al., 2020; Eseta et al., 2020).These studies clearly showed level of household dropout from community based health insurance scheme varies from place to place and population to population.

2.2. Factors affecting membership drop-out of CBHI

2.2.1. Socio-demographic factors

The determinant factors of high drop-out rate from CBHI schemes in the studies included from Nouna (Burkina Faso) reports as reasons for drop-out may be related to household head and household characteristics (Dong et al., 2009). Factors affecting CBHI dropout were examined in Tehuledere district, Northeast Ethiopia study and socio-economic barriers, income, occupation, age and sex were reported to be the main determinants(Getachew, 2017). Similarly, from Senegal, those who dropped out were poorer(Mladovsky, 2014).A study of the self-employed women's and rural members were dropped out in India(Paudel et al., 2019). Poverty literature also suggests that poor have liquidityconstraints that cause them to remain uninsured even when they may be better offwith insurance(Dror et al., 2016).

Moreover, a study on dropout in social health insurance program and its associated factor shows households headed by females was more dropout fromhealth insurance programat PokharaLekhnath Metropolitan, Kaski, in India(Paudel et al., 2019). Also financial factors was identified as the mostimportant determinant of drop-outhousehold survey in Senegal(Mladovsky, 2014). Greater family size, relatively older age and educated household were less likely to dropout(Eseta et al., 2020). Official position holders used for decision-making are significantly associated with the CBHI dropout rate(Ashagrie et al.,2020)

2.2.2.Knowledge and perception related factors

Poor knowledge about CBHIs are highly influence will insure if they perceive the benefits of insurance (for example, access to better quality care) as high than the cost related to giving up being uninsured (Dror et al., 2016).In addition to that the house hold members' attitude and knowledge were reported to be significant predictors in Ethiopia(Getachew, 2017).Regarding to the individual related factor lack of information was significantly associated with drop-out rate from CBHI at Uganda(Haven et al., 2018), Burkina Faso(Cofie et al., 2013) and Nigeria(Pierre et al., 2012).Trust in insurance can relate to trust in the insurer or trust in the specific insurance product. If there is solidarity in the community or trust in management, it will positively influence individuals' decision to enroll in CBHI(Dror et al., 2016). The finding of this study

showed unaffordable health care costs (in the case of illness) to calculable, regularly paid payment that enhances equity and universal coverage of health care services(Paudel et al., 2019; Dong et al., 2009; Mebratie et al., 2015).Households with poor self-rated health status have higher odds of willingness to renew CBHI membership(Zhang et al., 2008), Ghana (Atinga et al., 2015), and a systematic review by (Mebratie et al., 2013). Perception of poor quality of health services, awareness raising /information dissemination and informaldiscussions/ spontaneously helping, was identified as the mostimportant determinant of drop-outhousehold survey in Senegal(Mladovsky, 2014).Poor perceived quality of the health service toward CBHI members were the significant contributing determinants of high dropout(Eseta et al., 2020).Knowledge of CBHIare significantly associated with the CBHI dropout rate(Ashagrie et al., 2020).

2.2.3. Institutional-related factors

The result of the study shows that distance to health facility and satisfaction with available healthservices were more dropout fromhealth insurance programat Kaski, in India(Paudel et al., 2019). Institutional factors such as the technical arrangements made by the scheme management also influence people perception about the benefit of the scheme(Dror et al., 2016). Concerns institutional related factors which starts from cleanliness, long queues before being seen, and lack of some prescribed medicines and poor quality of health care(Haven et al., 2018).The longterm sustainability of the CBHI schemes will depend greatly on their healthy and transparent working arrangement with providers, invest time and resources on sensitizing health facility personnel(Pythagore et al., 2015).CBHI members often lack the technical capacities to manage an insurance scheme and negotiate with providers for better care(Begashaw et al., 2018). Supply-side factors such as availability and access to good quality primary and secondary health care facilities in the area may attract more members to adhere in the scheme (Dror et al., 2016). Dropping out was negatively associated with the absence of chronic illness in the household(Mulugeta Mekuria, 2018). A study on dropout in social health insurance program was associated with illness in family during last three months was more dropout from health insurance programat Pokhara-Lekhnath Metropolitan, Kaski, in India (Paudel et al., 2019).Health facility visit are significantly associated with the CBHI dropout rate(Ashagrie et al., 2020).

2.2.4. Scheme-related determinant factors

Scheme related factors such as benefit package design, premium and transparency also affects people's decision to enroll & renew their membership. If the scheme is transparent regarding the schemes' rules and processes, requirements that claimants submit documents to prove validity of their claims, relevant to poor people's needs such as inclusion of out-patient care in the benefit package will create trust about the financial management of CBHI and positively affect the willingness to pay for insurance(Dror et al., 2016).Providers' inferior quality of service delivery also does appear as a crucial factor for non-enrolment and an important reason for non-renewal of membership in a CBHI scheme(Dror et al., 2016; Begashaw et al., 2018). Perceived trustworthiness of the scheme management /president; accountability and beinginformed of mechanisms of controlling abuse/fraud were identified as the mostimportant determinant of drop-outhousehold survey in Senegal(Mladovsky, 2014).Household members' premium fee affordability were reported to be significant predictors in Ethiopia(Getachew, 2017).Failure to provide the promised benefit package trust in the scheme had a negative relationship with dropout from the CBHI scheme (Eseta et al., 2020).

2.3. Conceptual framework

The conceptual framework to address the determinants of CBHI dropout among households is adapted by reviewing literature(Dong et al., 2009; Mebratie et al., 2014; Mladovsky, 2014; Dror et al., 2016; Ashagrie et al., 2020; Eseta et al., 2020). According to the framework socio-demographic characteristics, scheme related factor, institution related factors and knowledge and perception related factorswas addressed on this study.

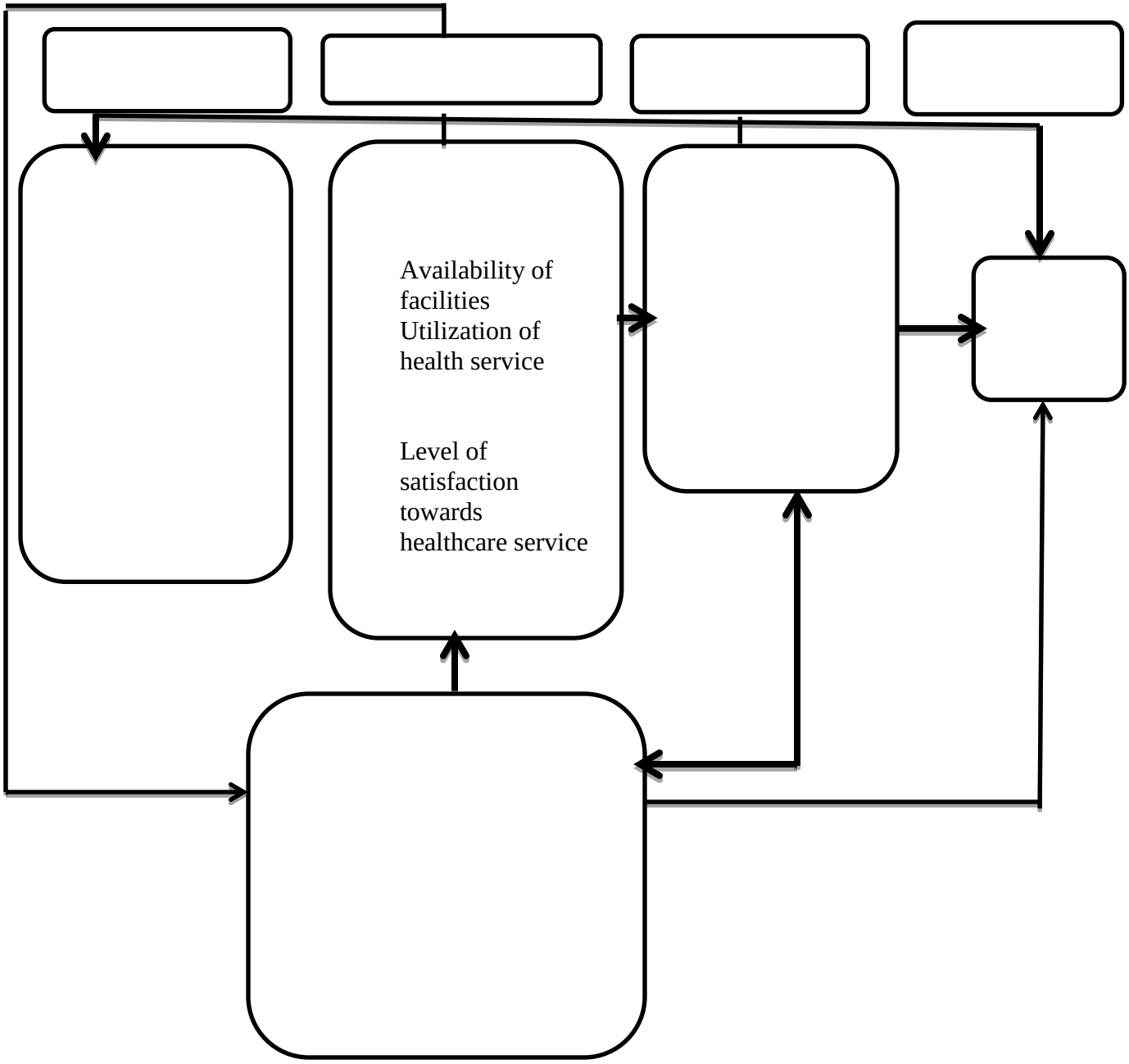

Figure1.**;** A Cconceptual framework shows factors related with CBHI dropout developed (based on review of Literatures).

3. METHODS AND MATERIALS

3.1. Study area and period

The study was conducted in the Tembaro district which is one of 11 districts found in Kembata Tembaro Zone, Southern Ethiopia. The district is located 320 Kms south of Addis Ababa, the capital of Ethiopia, 187Km far from Hawassa, the capital of SNNPR, and situated 60 km south of the Zonal capital, Durame. The district is bordered by the Hadya zone in the North,Omo River in the West, Hadero Tunto Area District in the East, and Wolaita zone in the South. Based on an estimation from the 2007 census report, the district has an estimated total population of 144,277 in 2020/21, 70,696 (49%) males (FDRE CSA, 2017).In Tembaro district there is a total land area of 27,917 Hectares, 20 rural and 4 urban kebeles; 1 primary hospital; 22 health posts, 3 health centers, 1 NGO health center, 2 private clinics, 2 drug stores, and 1 drug vendor in the district. The woreda has 24 kebeles and all have linkage with CBHI. The total household number is about 23,919. According to the report from the district in July 2021 total beneficiaries of CBHI households are 1,025 which is 4.3% (388 new enrolled, 637 renewed and 9,746 dropped) of total households (TWoHO, 2021). The study was conducted from December 01-20, 2021 in Tembaro district, Kembata Tembaro Zone, Southern Ethiopia.

3.2. Study design

A population-based case-control study design was employed.

3.3. Population

3.3.1. Source population

All households of Tembaro district, Kambata Tembaro Zone ever enrolled in CBHI.

3.3.2. Study population

Cases: sampled community-based health insurance members who did not renew (dropped out) the CBHI from January 01, 2018, to June 30, 2021.

Controls: Sampled community-based health insurance members who have renewed (adherence) to the CBHI.

3.3.3. Study units

Sampled household heads for both cases and controls (they may be females or males).

3.4. Inclusion and exclusion criteria

3.4.1. Inclusion criteria

All randomly selected participants who ever enrolled in the community-based health insurance (CBHI) schemes.

3.4.2. Exclusion criteria

All household heads critically ill that were not able to respond to the interviews and new members (enrolment is less than one year) of community-based health insurance (CBHI) during the time of data collectionwas excluded from the study.

3.5. Sample size determination

3.5.1. Sample size determination

The required sample size is determined using Epi-info version7 statistical software by considering the assumption for double populations' proportion formula: Considering CBHI dropouts as cases and CBHI renewed members as control groups, 95% confidence interval, power 80%, and allocation ratio 1:1 for case and control (Table 1).

$$n_1 = n_2 = \frac{\left(Z\alpha/2\sqrt{2\bar{p}\bar{q}} + Z\beta\sqrt{p_1q_1 + p_2q_2}\right)^2}{\Delta^2}$$

$$\bar{p} = \frac{p1 + p2}{2}$$

Table 1:The estimated sample size for determinants of CBHI dropout among households

Exposure Variables	Proportion among cases	Proportion among controls	OR	Sample size for cases	Sample size for control	Final Sample Size(1.5DE& +10% nonresponse)	Reference
Households **family size (≤5)**	58.3	36	2.48	87	87	288	(Eseta et al., 2020)
Length of CBHI enrolment **(≥4 years)**	32.5	52.4	0.43	106	106	**350**	(Ashagri et al., 2020)

Thus, the sample size of 350 was considered as maximum sample and by adding the design effect of 1.5 to minimize the sampling error of multi-stages in sampling and assuming a 10% non-response rate, the required total sample size is 350 households (175 cases and 175 controls).

3.6. Sampling technique and procedure

A two-stage random sampling technique was employed to select the study participants. First, all the kebeles in the district were stratified into urban and rural kebeles. Then 2 out of 4 urban kebeles and 6 out of 20 rural kebeles were selected using the lottery method. Then, the number of households that were included in the study was determined proportionally in accordance with the total number of households (both CBHI members' dropped out (cases) and members adhered to (controls) the sampling frame of the selected kebeles. The sampling frame (list of all households) for cases and controls was the CBHI member household registration book of respective district CBHI offices. Finally, both cases and controls were selected by simple random sampling from the framed list (by using computer-generated random numbers) in Table 2.

Table 2:-Proportionally allocated sample size for selected kebeles

Resident	Kebeles	Enrolled	Adhered(control)		Dropped(case)	
			Number	Sample	Number	Sample
Urban	Mudula 01	181	20	8	161	10
	Keleta 01	309	18	8	291	18
Rural	Le. Zembara	691	97	41	594	37
	Farsuma	323	85	36	238	15
	Osheto	447	53	23	394	25
	Gaecha	378	58	25	320	20
	Debub ambukuna	403	50	21	353	22
	Belela	488	31	13	457	28
Total	08 kebeles	3220	412HH	175	2808 HH	175

3.7. Data Collection Methods and Tools

3.7.1. Data Collection Tools

A structured questionnaire was adapted and modified in the local context based on reviewing relevant literatures(Dong et al., 2009; Mebratie et al., 2014; Mladovsky, 2014; Pythagore et al., 2015; Ashagrie et al., 2020; Eseta et al, 2020). The questionnaire was prepared initially in English and then translated into the local language (Xambaarsa) and Amharic back to English by another person to check whether the translation is consistent. Then data was collected by the Xambaarsa version. The tool includes four sections: socio-demographic characteristics, knowledge and perception related factors, institutional related factors and scheme related factors variables using structured and interviewer-administered questionnaires.

3.7.2. Data Collectors and Data Collection Procedures

The data were collected by eight Diploma nurses and two BSc in public health as supervisors. Data collection was conducted using face-to-face interviewer-method via home-to-home visits. During data collection, data collectors explained the aims of the study and were take consent

from participants. In case the selected participants were not present, the interviewers were revisiting the households three times. The household head that is not present at the third visit was considered a non-respondent. The collected data were checked by supervisors for completeness, consistency, and clarity throughout the data collection period. Overall supervision had done by the principal investigator.

3.8. Study variables

3.8.1. Dependent variable

- Community- based health insurance (CBHI) dropout status

3.8.2. Independent variables

3.8.2.1. Socioeconomic and demographic variables:-Age, sex, residence, marital status, religion, education status, ethinicity, occupation status, source of income, family size,and wealth index

3.8.2.2. Knowledge and perception related factors: -Knowledge about CBHIs, attitude towards CBHI, perceived quality of service, perceived health statusand cultural belief/practices

3.8.2.3. Institutional-related factors: - Availability of facilities, utilization of health service, chronic disease, health facility visited and level of satisfaction

3.8.2.4. Scheme-related factors: -affordability, benefit-package design and the convenience of the premium collection

3.9. Operational Definition

CBHI-dropout – Households that had not paid the annual premium or are unable to pay the outstanding payments with a penalty charge (mandated by the schemes' rules) to re-gain membership and report themselves as dropped out of the scheme (Mladovsky, 2014).

Cases (dropout) to CBHI: Households who used to have CBHI but were not enrolled (not paid the annually premium) at the time of the survey and registered to CBHIS on the report folderof district CBHI-office in which the PI had used to take a sample during data collection time.

Controls(Adherence) to CBHI: Households that have paid the premium (who regularly renew his or her membership card) CBHI for more than three year and who were still enrolled at the time of the survey and registered to CBHIS on the report folder of district CBHI-office in which the PI had used to take a sample during data collection time.

Attitude towards CBHI Scheme: - Respondents answered a set of questions containing 10 items, which were measured by a 5-point Likert scale from strongly agree to strongly disagree. The assumption of summated scales was employed to examine the overall score, which represents the respondent's position on the scale of favorableness towards CBHI(Kothari, 2004).Accordingly, 10 items have a potential minimum sum score of 10 to a maximum sum score of 50. When the total score of each individual is close to 50 it shows the most favorable attitude and when the score is close to 10 it shows the most unfavorable attitude towards the scheme. Thus, based on this continuum of favorableness it was categorized into unfavorable attitude, which scored between 10 and 29; neutral attitude, which scored 30; and favorable attitude, which scored 31–50.Internal consistency of the variables was checked by Cronbach's alpha result of this variable was .86.

Availability of health facility: - implies the existence of a governmental health facility within a 30-minute walking distance(Eseta et al.,2020).

Benefit package design: - This item was asked as"CBHI scheme covered through out-of-pocket spending at times of sickness sufficientlyand CBHI scheme benefit package design adequate for all health service"If "Yes, adequate" and "No, inadequate"(Mirach, Demissie and Biks, 2019).

The convenience of premium collection: This variable is used to assess the association between the convenience of the premium collection period and membership renewal. Participants were asked on a 5-point Likert scale from strongly agree to strongly disagree question whether the premium collection period was convenient or not. Later, regrouped into three categories as agree, neutral and disagree for numerical significance.

Knowledge about CBHIs - It is used to assess the different dimensions of the knowledge of households about CBHI. Respondents answered 6questions with true and false responses (Only those who fall sick should consider buying CBHI, In the case of HI/ the money back, HI/CBHI

program are like a savings scheme; you will receive interest and CBHI programs you have to pay money (premiums) but do not know whether you will get your money back, In HI/CBHI program you pay money (premiums) for the CBHI to finance your future health care needs, All health care costs was covered by CBHI programs, If you do not make claim any costs through CBHI your premium was returned). Then the questions were aggregated into two factors; those factors were used as a continuous variable in the regression analysis. Internal consistency of the variables was checked by Cronbach's alpha result of this variable was .79.

Perceived health status was the respondent's report about their health status, which was measured on a five-point Likert scale (1= excellent; 5= very poor). After, the data were regrouped into three categories as "good, medium, and poor" for numerical significance.

Perceived quality health service was the extent of the respondent's view on the quality of healthcare delivery; it was measured on a five point Likert scale (1=very low; 5= very high). Later, the data were regrouped into three categories as "poor, medium, good" for numerical significance.

Frequency of health facility visit; episodes of household heads visited to health facility by seeking care for himself or for his family members after being enrolled in CBHI(Teketel A et al.,2021).

Chronic Illness -Disease symptoms have persisted for more than 30 days.

Level of satisfaction towards healthcare service: -This includes the availability of drugs/medical supplies, availability of diagnostic/laboratory services, waiting time to get service, the rapidity of the treatment's results of the health service provider, cleanliness of the facility, satisfaction of service in the nearby facility and satisfaction of overall healthcare services and measured via eight Likert scale type questions. Then the questions were aggregated into three factors score; those factors were used as a continuous variable in the regression analysis. Internal consistency of the variables was checked by Cronbach's alpha result of this variable was .81.

Household wealth status – It is household living status which was constructed using HH asset data composed of different indicators adopted from EDHS 2016 and modified to local and rural

household contexts. It is determined by using the respondent's reported assets, sanitary conditions, housing conditions,dwelling construction,water source, and other important items in the household, and after conducting principal components analysis (PCA) by STATA, the household's wealth were grouped into five classes of wealth. The first quintile was classified as the poorest, whereas the last quintile will be considered the richest (EDHS 2016).

3.10. Data Quality Control

Data collectors and supervisors were trained for two days on the data collection tool by the principal investigator. The training was focused on understanding the meaning of each question, obtaining consent, keeping the confidentiality of the information they gathered, and quality of data collection. The pretest was conducted in 5% (9 cases & 9 control) of the participants at randomly selected kebele (Sigazo kebele), which is different from the study population in the same source population that was done one week before the data collection. If there is any unclear or inconsistency in the tool was modified before actual data collection. Every day after data collection, questionnaires were reviewed and checked for completeness, consistency, and clarity by the supervisors. Overall supervision was done by the principal investigator. Finally, double data entry was done by two data clerks, and the consistency of data was checked by comparing the two separately entered data.

3.11. Data processing and analysis

After data collection, it was checked for completeness and consistency; it was entered and cleaned into EpiData version 3.1 and exported into STATA version 16.0 for analysis. Descriptive statistics were computed to summarize the data about different variables using frequency, percentage, or proportions and descriptive summaries. The bivariate and multivariate binary logistic regression analyses were used to identify the possible factors associated with the outcome variable (CBHI-dropout). Explanatory variableswith bivariate (p-value < 0.25) were entered into multivariate logistic regression using the Backward Stepwise (Likelihood Ratio Test) to control confounding variables. Multi-collinearity was diagnosed by using the variance inflation factor (VIF) and the mean VIF was found to be 1.18 and model fitness was checked by Hosmer-Lemeshow goodness-of-fit and the P-value was found to be 0.9783. The result of the

final model was expressed using Odds Ratio (OR) along with 95% confidence intervals (CI). Statistical significance was declared at P-value less than 0.05.The wealth index was constructed using 19 variables related to ownership of selected household assets using a principal components analysis. Before using PCA was check its assumptions; the components with eigenvalues greater than one were retained to construct wealth index and I.e. Bartlett's Test of Sphericity should be significant, Sampling adequacy with Kaiser-MeyerOlk in measure of sampling adequacy and the results in this measurement accepted if it is >0.5 and Varimax rotation to minimize cross-loading of items on to many factors. Finally, the result was presented in text, tables, and graphs.

3.12. Ethical Considerations.

Ethical approval was obtained from Haramaya University College of Health and Medical Sciences Institutional Health Research Ethics Review Committee (IHRERC). An official letter was written to the Tembaro district health office. A letter was obtained from the office and submitted to all kebeles and the study was carried out. Informed, voluntary, written, and signed consent was obtained from each study participant after explaining the purpose and benefits of the study. The confidentiality of the study participants' was ensured. Furthermore, appropriate infection prevention practices and principles related to COVID-19 were considered during the data collection period. Data collectors were provided information for the CBHI dropout households after the interview has been completed based on the gaps identified as appropriate.

3.13. Disseminationplan

First, the study will be presented and defended to the community of Haramaya University on open public health research defense. Then the finding of the study will be submitted to the Haramaya University, Kambata Tembaro Zone Health Department, and Tembaro district as well as NGOs working on CBHI. Finally, Efforts will be made to publish in peer-reviewed national and international journals.

4. RESULTS

4.1. Socio-demographic and economic characteristics of the participants

A total of 350 (100%) households were interviewed. Among those interviewed 175 were dropout of CBHI (cases) and 175 were adhered to (controls) CBHI. The ages of the respondents ranges from 20 to 80 years and the mean (±SD) age of the cases were 46 years (±11.39) and 45 (±10.76) for the controls. Of the total respondents, the majority, 84% of the cases and 79% of the controls were males. More than four out of five cases,84% and 91% of controls were rural residents. Around three-fifth, 61% of the cases and 51% of controls were Protestant and 59% of cases and 54% of controls were Tembaro in ethnicity.Only 7% of the case and 16% of the control group had college and above education, while more than half 58% of the cases and (46%) of controls never had formal education. More than three-fourths, 88% of cases and 87% of controls were married. More than three-fifth of the cases and controls (62% vs 67%) were farmer in occupation. For around nine out of ten cases and controls, farming was the main source of income. For cases, the mean family size was 5 (SD =±1.30) with a range of 2 to 8 family numbers and for controls, the mean (±SD) of family size was 5 (±1.48) with a range of 2 to 9 family numbers. Regarding wealth status of households, about (18.9%, 19%), (20%, 21%), (18.9%, 20%), (20%. 21.7%), and (22.3%, 17.7%) cases and controls pair were in lowest, second, middle, fourth and fifth wealth quintile, respectively. (Table 3)

Table 3: Socio-demographic and socio-economic status the households at Tembaro district, Kembata Tembaro Zone Southern Ethiopia, 2021.

Variables	**Category**	**Cases (N=175)**	**Control (N=175)**	**p-value**
		N (%)	**N (%)**	
Sex	Male	147(84%)	138(78.9%)	0.050
	Female	28(16%)	37(21.1%)	
Age in years	18-45years	90(51.4%)	96(54.9%)	0.873
	46-60 years	66(37.7%)	68(38.9%)	
	60+ years	19(10.9%)	11(6.3%)	

Residence	Urban	28(16%)	16(9%)	0.401
	Rural	147(84%)	159(91%)	
Marital status	Unmarried	6(3.4%)	3(1.7%)	0.136
	Married	154(88%)	152(86.9%)	
	Divorced	4(2.3%)	7(4%)	
	Widowed	11(6.3%)	13(7.4%)	
Religion	Protestant	107(61.1%)	89(50.9%)	0.671
	Orthodox	31(17.7%)	54(30.9%)	
	Catholic	24(13.7%)	19(10.9%)	
	Muslim	13(7.4%)	13(7.3%)	
Ethnicity	Tembaro	103(58.9%)	94(53.7%)	0.20
	Kembata	25(14.3%)	23(13.1%)	
	Hadiya	31(17.7%)	32(18.3%)	
	Others+	16(9.1%)	26(14.8%)	
Occupation	Farmer	109(62.3%)	118(67.4%)	0.151
	Housewife	25(14.3%)	30(17.1%)	
	Merchant	23(13.1%)	14(8%)	
	Others¶	18(9.7%)	13(7.5%)	
Educational status	No formal education	102(58.3%)	81(46.3%)	0.004**
	Primary cycle(grade 1-8)	33(18.9%)	29(16.6%)	
	Secondary cycle(grade 9-12)	27(15.4%)	37(21.1%)	
	College and above	13(7.4%)	28(16%)	
Source of income	Employment	4(2.3%)	3(1.7%)	0.922
	Trading	10(5.7%)	13(7.4%)	
	Farming	159(90.9%)	157(89.7%)	
	Others*	2(0.57%)	2(1.4%)	
Wealth status of the	Poorest	33(18.9%)	34(19.4%)	0.819

household	Poor	35(20%)	37(21.1%)	
	Medium	33(18.9%)	35(20%)	
	Rich	35(20%)	38(21.7%)	
	Richest	39(22.3%)	31(17.7%)	
Family size	≤ 5	96(54.9%)	71(40.6%)	0.269
	> 5	79(45.1%)	104(59.4%)	

Key =others+ = Donga, Wolayta and Oromo Othes¶=Students and Laborer Others*=pottery

4.2: Knowledge and perception related factors

In the current study, morethan one-fourth 29% of the households of the cases and 38% of control had a favorable attitude toward CBHI. More than half, 53.1% of the cases and 60.6% of controls had a good knowledge toward CBHI. More than three-fourth, 81% of cases and 90% of controls had ever been a member of a social association (debo/equb, Iddir/kire and credit and saving); among this, nearly half, 48.6% of the cases and 50% of controls were a member of Iddir/kire and one quarter, 31% of cases and 23% of controls were a member of credit and saving social associations. Out of the total 350 participants, 30% of cases and 26% of control had currently have some type of outstanding loan; 50.7% of cases and 54% of controls use microfinance as a main source of the loan and more than half 55% of cases and 54% of controls were production the main purpose of loan.Out of the 350 participants, only one-third, 34.3% of cases and 44% of controls reported perceived health status of the household as poor. More than half of 54.3% of cases and 41.7% of controls reported perceived quality health service of the household as poor. (Table 4)

Table 4:Knowledge and perceptionrelated factors the households at Tembaro district, Kembata Tembaro Zone Southern Ethiopia, 2021.

Variables	**Category**	**Cases(N=175)**	**Control (N=175)**	**p-value**
		N (%)	N (%)	
Attitude towards	Unfavorable	71(40.6%)	45(25.7%)	0.123

CBHI	Neutral	53(30.3%)	64(36.6%)	
	Favorable	51(29.1%)	66(37.7%)	
Knowledge about CBHIs	Poor	82(46.9%)	69(39.4%)	0.030*
	Good	93(53.1%)	106(60.6%)	
Ever been member of social association	Yes	142(81.1%)	157(89.7%)	0.128
	No	33(18.9%)	18(10.3%)	
Type of social associations (n=142 vs 157)	Debo	10(7%)	16(10%)	0.318
	Equb	22(15.5%)	27(17.2%)	
	Iddir/kire	69(48.6%)	78(49.7%)	
	Credit and saving	41(28.9%)	36(23%)	
Currently have any outstanding loans	Yes	53(30.3%)	46(26.3%)	0.478
	No	122(69.7%)	129(73.7%)	
Source of loan (n=53 vs 46)	Bank	6(11.3%)	2(4.3%)	0.478
	Microfinance	26(49%)	25(54.3%)	
	Relative	7(13%)	7(15%)	
	Friend/Neighbors	14(26.4%)	12(26%)	
Purpose of loan (n=53 vs 46)	Production	29(54.7%)	25(54.3%)	0.689
	Medical fee	3(5.7%)	4(8.7%)	
	Wedding	9(17%)	8(17.4%)	
	Trade	12(22.6%)	9(19.6%)	
Perceived health status	Good	59(33.7%)	45(25.7%)	0.012*
	Medium	56(32%)	53(30.3%)	
	Poor	60(34.3%)	77(44%)	
Perceived quality of health service	Good	39(22.3%)	51(29.2%)	0.135
	Medium	41(23.4%)	51(29.1%)	
	Poor	95(54.3%)	73(41.7%)	

4.3 Institutional-related factors

More than two-fifth, 43.4% of cases and more than one-third, 34.9% of controls visited health facilities morethan seven times per year. More than one-third, 36% of cases and 34% of the controls have got treatment from public hospitals and health centers respectively. Almost, one-fifth, 17% of cases and more than a quarter, 27% of controls reported a chronic illness like TB, HIV, DM, and CVD. More than two-fifth, 42% of cases and 46% of controls were encountered some type of illness during the past 3 months. Among these, 38% of cases and 41% of controls were sought medical treatment. One-third of 35.4% of the cases and 29.7% of the CBHI adherent households accessed the nearest health facility by traveling less than 30 minutes. An average walking time on foot for cases and controls is 33±67.98SD and 29±15.52 minutes, respectively. Two-fifth of 40% of cases and 26.9% of controls reported level of satisfaction toward healthcare service as poor.(Table5).

Table 5:-Institutional related factor status of the households at Tembaro district, Kembata Tembaro Zone Southern Ethiopia, 2021.

Variables	**Category**	**Cases (N=175)**	**Controls (N=175)**	**P-value**
		N (%)	**N (%)**	
Frequency of health facility visited	1-3 times	48(27.4%)	54(30.9%)	0.000***
	4-6 times	51(29.1%)	60(34.3%)	
	>=7 times	76(43.4%)	61(34.9%)	
Got treatment	Private health Facility	57(31.6%)	59(33.7%)	0.131
	Public health center	55(31.4%)	59(33.7%)	
	Public hospital	63(36%)	57(31.6%)	
Reported chronic disease	No	146(83.4%)	127(72.6%)	0.008**
	Yes	29(16.6%)	48(27.4%)	
Any illness encountered	No	101(57.3%)	93(53.7%)	0.509

during the past 3 months				
	Yes	74(42.3%)	82(46.3%)	
Seek medical treatment for the recent episode	No	109(62.3%)	102(58.9%)	0.244
	Yes	66(37.7%)	73(41.1%)	
Distance from health facility/average travel time in minute to the nearest HF on foot	<30 minute	62(35.4%)	52(29.7%)	0.378
	>=30 minute	113(64.6%)	123(70.3%)	
Level of satisfaction towards healthcare service	Good	53(30.3%)	63(36%)	0.638
	Fair	52(29.7%)	65(37.1%)	
	Poor	70(40%)	47(26.9%)	

4.4. The scheme related factors

More than two-fifth, 45.1% of cases and40% of controls were disagreewith convince of premiem payment interval. Consequently, more than two-fifth, 41% of cases and 46% of controls reported the CBHI management officials are trustworthy. More than three-fifth, 63% of cases and 66% of controls said the CBHI registration fee was affordable and 45.1% of cases and 65.7% of controls reported as the CBHI regular contribution (premium) was affordable. Less than half 45.1% of the cases and more than half 53.1% of controls were considered as the CBHI scheme benefit package design adequate for health service. More than half, 51.4% of cases and 52.6% of controls were participated in CBHI related meetings. Out of 175(cases) study participants more than one-third 33.7% households were dropout in the years of 2021, 32.6% of households reported the quality of health care services is low for CBHI members were reasons for dropout membership from CBHI and More than half 54% of respondant reported not plan to re-join CBHI scheme.Concerning reasons for renewed their membership out of 175(controls) study participants 28% of respondents stated financing unexpected health expenses and three-fouth76% of respondants were planned to renew membership in the future.(Table6).

Table 6: scheme related factors of the households at Tembaro district, Kembata Tembaro Zone Southern Ethiopia, 2021.

Variables	Category	Cases (N=175)	Controls (N=175)	p-value
		N (%)	N (%)	
Convince of premiem payment interval	Agree	56(32%)	70(40%)	0.325
	Neutral	40(22.9%)	35(20%)	
	Disagree	79(45.1%)	70(40%)	
The CBHI management officials are trustworthy	Agree	72(41.1%)	81(46.3%)	0.583
	Neutral	45(25.7%)	51(29.1%)	
	Disagree	58(33.1%)	43(24.6%)	
The CBHI registration fee is affordable	Yes	111(63.4%)	114(65.1%)	0.045*
	No	64(36.6%)	61(34.9%)	
The CBHI regular contribution (premium) is affordable	Yes	79(45.1%)	115(65.7%)	0.000***
	No	96(54.9%)	60(34.3%)	
The CBHI scheme benefit package design adequate for health service	Adequate	79(45.1%)	93(53.1%)	0.939
	Inadequate	96(54.9%)	82(46.9%)	
Participated in CBHI related meetings	Yes	90(51.4%)	92(52.6%)	0.550
	No	85(48.6%)	83(47.4%)	

Variables	Category	Cases (N=175)
Years of dropout from CBHI membership	2018 2019 2020 2021	31(17.71%) 38(21.71%) 47(26.86%) 59(33.71%)
Reasons for drop-out membership from CBHI?	The quality of health care services is low (waiting time, staff attitude, medicine, diagnostics) for CBHI members	57(32.6%)
Plan to re-join	Yes	81(43.3%)
	No	94(53.7%)

Variables	Category	Controls (N=175)
Reasons for renewing membership	To finance unexpected health care expense	49(28%)
Planned to renew membership in the future	Yes	133(76%)
	No	42(24%)

4.5 Determinants of CBHI-dropout

A bivariatelogistic regression analysis was done for a total of 14variablesthey were: sex,age,occupation, educational status, family size, percived health status,frequency of health facility visited,having chronic disease,attitude toward CBHIs, knowledge about CBHIs, ever been member of social association,perceived quality health service, convince of premium payment interval and CBHI affordability had fulfilled a criteria for a p-value <0.25 and were considered as a candidate for the multivariable binary logistic regression model. In multivariable binary logistic regression analysis, sex, educational status,perceived health status,frequency of health facility visited,absence chronic diseaseand the CBHI unaffordabilitywere identified as significant predictors of CBHI-dropout (Table 7).

Accordinglly, male-headed households have 2.4 times higher odds of CBHI-dropout as compared to female-headed households [AOR=2.43; 95% CI: 1.02-5.76]. Accordinglly, household heads with no formal educationand primary leve were 3.2 and 3.16timeshigher odds of CBHI-dropout compared to college and above heads [AOR= 3.19; 95% C.I: 1.39-7.32] and [AOR= 3.16; 95% C.I: 1.23-8.12], respectively. Respondents' perceived health status was reported as good were about 3 times higher odds CBHI-dropout with [AOR=2.98, 95% CI: 1.40-6.31] than their counterparts. In addition, households that utilized health facilities more than seven times a year were 4.4 times higher odds to be CBHI-dropout with [AOR=4.44, 95% CI: 2.05-9.67] than their counterparts.Partcipants who not suffered from a chronic disease were about 3.3 times higher odds to be CBHI-dropout compared to household heads from who having chronic disease [AOR=3.28; 95% CI: 1.59-6.76].The respondents who the CBHI regular contribution (premium) is unaffordable were found to be 2.4times higher odds to be CBHI-dropout scheme membership compared to those who CBHI regular contribution (premium) is affordable [AOR: 2.49, 95% CI: 1.41-3.98].(Table 7)

Table 7: Determinants of CBHI-dropout among households Tembaro district, Kembata Tembaro Zone, Southern Ethiopia, 2021(n=350)

Variables	CBHI dropout status		OR(95%CI)	
	Case (n=175)	Control (n=175)	COR	AOR
Sex				
Male	147(84%)	138(78.9%)	1.41(0.82-2.42)	2.43(1.02-5.76)*
Female	28(16%)	37(21.1%)	Ref	Ref
Age in years				
18-45	90(51.4%)	96(54.9%)	Ref	Ref
46-60	66(37.7%)	68(38.9%)	1.03(0.66-1.61)	1.09(0.65-1.86)
60+	19(10.9%)	11(6.3%)	1.84(0.83-4.09)	1.77(0.72-4.35)
Educational status				
No formal education	102(58.3%)	81(46.3%)	2.71(1.32-5.57)	3.19(1.40-7.32)**
Primary(grade 1-8)	33(18.9%)	29(16.6%)	2.45(1.07-5.60)	3.16(1.23-8.12)*
Secondary(grade 9-12)	27(15.4%)	37(21.1%)	1.57(0.69-3.58)	1.76(0.69-4.54)
College and above	13(7.4%)	28(16%)	Ref	Ref
Occupation				
Farmer	109(62.3%	118(67.4%)	Ref	Ref
Housewife	25(14.3%)	30(17.1%)	0.90(0.50-1.63)	1.67(0.66-4.24)
Merchant	23(13.1%)	14(8%)	1.78(0.87-3.63)	1.97(0.86-4.52)
Others	18(9.7%)	13(7.5%)	1.50(0.70-3.20)	1.36(0.57-3.24)
Family size				
≤ 5	96(54.9%)	71(40.6%)	1.78(1.16-2.71)	1.37(0.84-2.22)
> 5	79(45.1%)	104(59.4%)	Ref	Ref
Perceived health status				
Good	59(33.7%)	45(25.7%)	1.68(1.01-2.81)	2.98(1.40-6.31)**
Medium	56(32%)	53(30.3%)	1.36(0.81-2.25)	1.71(0.88-3.31)
Poor	60(34.3%)	77(44%)	Ref	Ref
Frequency of health facility visited in the last one year				

1-3 times	48(27.4%)	54(30.9%)	Ref	Ref
4-6 times	51(29.1%)	60(34.3%)	0.96(0.56-1.64)	1.27(0.66-2.42)
>=7 times	76(43.4%)	61(34.9%)	1.40(0.84-2.34)	4.44(2.05-9.67)***
Chronic diseases				
Yes	29(16.6%)	48(27.4%)	Ref	Ref
No	146(83.4%)	127(72%)	1.90(1.13-3.20)	3.28(1.59-6.76)**
Attitude towards CBHI				
Unfavourable	71(40.6%)	45(25.7%)	1.91(1.13-3.21)	1.69(0.92-3.12)
Neutral	53(30.6%)	64(36.6%)	Ref	Ref
Favourable	51(29.1%)	66(37.7%)	0.93(0.56-1.56)	0.75(0.41-1.38)
Knowledge about CBHIs				
Poor	82(46.9%)	69(39.4%)	Ref	Ref
Good	93(53.1%)	106(60.6%)	1.35(0.89-2.07)	1.42(0.84-2.40)
Ever been member of social association				
Yes	142(81.1%)	157(89.7%)	Ref	Ref
No	33(18.9%)	18(10.3%)	2.03(1.09-3.76)	1.43(0.68-2.99)
Perceived quality health service				
Poor	95(54.3%)	73(41.7%)	1.70(1.01-2.85)	1.87(0.99-3.52)
Medium	41(23.4%)	51(29.1%)	1.05(0.59-1.89)	1.29(0.65-2.56)
Good	39(22.3%)	51(29.2%)	Ref	Ref
Convinience of premium payment interval				
Agree	56(32%)	70(40%)	0.71(0.44-1.14)	0.69(0.39-1.21)
Neutral	40(22.9%)	35(20%)	1.01(0.58-1.77)	1.39(0.72-2.67)
Disagree	79(45.1%)	70(40%)	Ref	Ref
CBHI affordability				
Affordable	79(45.1%)	115(65.7%)	Ref	Ref
Unaffordable	96(54.9%)	60(34.3%)	2.33(1.51-3.59)	2.37(1.41-3.98)**

Note: *P<0.05, **P<0.01, ***P<0.001 was statistically significant on multivariable, Ref= Reference group

5. DISCUSSIONS

The current studywas aimed to identify determinants of community-based health insurance (CBHI) dropout among households in Tembaro district, Kembata Tembaro Zone, Southern Ethiopia.Accordinggly, sex,educational status,perceived health status, frequency health facility visit, having chronic disease, and perceived CBHI affordability were found to be independent predictors of CBHI-dropout.

Male-headed households were more likely to be dropedout from the CBHI schemes than women counterparts. This finding is consistent with findings in India (Panda et al., 2016), Ghana (Boateng et al., 2013) and Ethiopia(Mebratie et al., 2015; ATNAFU, 2018; Ashagrieet al., 2020)and confirms that women are more likely to renew their membership than men.This may be due to the fact that women have a high risk propensity than men and are responsible for family health(Ashagrie et al., 2020). Once more, women represent the greatest users of health care and might have enjoyed special recognition under the insurance scheme. Women, as care-givers for children and other sick members of the household, coupled with their vulnerability and physiological makeup are likely to have positive attitude towards adherence to the CBHI scheme than do their male(Boateng et al,, 2013).

The findingshowed that household heads having no formal education and primary level were 3.2 and 3.16times more likely to dropout from CBHI, respectively.This is concurrent with findings inWestern Ethiopia(Fite et al., 2021) and Burkina Faso(Dong et al., 2009; Cofie et al., 2013).Educated people are the more understanding they have on the benefits packages, working principles, and mechanisms of risk sharing in health insurance (Eseta et al., 2020). In the other words as the educational level increases the knowledge and perception of household head increases towards risk-minimizing strategies which help them to decide renewal into insurance. Additionally, educated household head will have a way for better understanding the effects of illness on health care expenditure, which lead them to join insurance to minimize out of-pocket payments.

Perceived health status is also the determinants of households' decision to dropout or renews their membership, which is an indication of the possibility of adverse selection. Household heads with good perceived health status almost have three times higher odds of CBHI-dropout than those with poor perceived health status. This finding is consistent with the findings of China (Zhang et al., 2008), Ghana (Atinga et al., 2015), and a systematic review by (Mebratie et al., 2013)which reported that self-rated good health status as a negative effect of proxy selection influenced enrollment and renewal of membership in the CBHI. However, this study finding is in difference with a study finding in the Ethiopian Pilot CBHI implementation (Mebratie et al., 2015)which reported self-reported health status is not a reason for dropout from the Ethiopian pilot CBHI. This inconsistency may be due to the difference in the study periods of the two studies, the first was conducted during the pilot period and the current study was conducted nine years after the pilot was implemented. Over time, households may understand the cost of insurance and sick people may choose to remain members to cover their costs rather than healthy ones.

Households that visited health facilities more than seven times per year were 4.4times higher odds to be CBHI-dropout with than their counterparts. This finding is in line with the results of a study conducted in Dera District, Ethiopia(Ashagrie et al., 2020)which showed that the frequency of visits to health facilities increases the client's conflict with the health professional and other support workers, and then their satisfaction may exhaust, then their trust in the health professional and contracted health facility will decrease and they may dropout from CBHI scheme. Also, the study in Bangladesh (Khan et al., 2013) reported clients visited health facilities more frequently have an increasedmedical and treatment costs and the possibility of renewal is increased to reduce the cost (Iqbal M et al., 2017). This might be a better health care provider's compassion, respect and follow-up services for CBHI patients in health facilities in Bangladesh.

This study revealed that household members who were not reported chronic disease were 3.3 times more likely to dropout from CBHI as compared to their counter parts. This study finding is supported by the study conducted in Ethiopia(Mebratie et al., 2015), West Shewa Zone(Mulugeta Mekuria, 2018), India(Panda et al., 2016) and Ghana(Kusi et al., 2015). This

may be because chronic disease requires more health care utilization for its members, especially high-risk individuals living with chronic conditions.

The current study also revealed that unaffordability of CBHI regular contribution was 2.4 times more likely to dropout from CBHI than their counter parts.The result is consistent with reports from southern Rwanda(Mukangendo et al., 2018)and Burkina Faso (Dong et al., 2009). This similarity may be due to non-payment of fees as the main reason for dropping out of the program as reported in a study conducted in Ethiopia (Mebratie et al., 2015). This may be due to the fact that the households who identified lack of funds and inability to pay contributions as important reasons for non-renewal. Due to proportional payment, both the poor and the rich contribute the same amount in premiums.Based on this evidence, it may reflect that the poor household is a financial barrier to financial security and adherence to the CBHI scheme.

6. STRENGTH AND LIMITATION OF THE STUDY

6.1 Strength of the study

The data was collected by trained data collectors who had full information about the objective of the study and the benefit for the participants to creat reminder to renew their CBHI and the benefit of the CBHI for the study participants.

6.2 Limitations of the Study

There might be a potentialthis study assesses history of exposure retrospectively, it may be prone to recall and social desirability bias in the past 12 month health service utilization and socioeconomic status of the participants.

The other limitation of the study was that the study was carried out only a single area study and the sample size is small.

7. CONCLUSION

The study was conducted to identify determinants community based health insurance dropout.The findings as a whole have importance implications to maximaze the adherence of the CBHI membership at Tembaro Woreda, Kembata Tambaro Zone to initiate the scheme renewal timely to address the beneficial. In this study, sex, educational status,perceived health status, frequency health facility visits, having chronic diseaseand the CBHI affordability were found to be independent predictors of community based health insurancedropout.

8. Recommendations

The following recommendations are forwarded based on the findings of the study:

- This study results suggest for CBHI managers, health officials and stakeholders needs to strength inter-sectorial collaboration is needed targeting the quality of care for CBHI patients, challenge adverse selectionand male contribution for better adherence of CBHI.Additionally, differential premiums based on the capacity to pay, group insurance renewal and applying mandatory renewal are crucial to challenge adverse selection for sustainability of the schemes.
- For FMOH, EHIA,SNNPR Health Bureau and Kembata Tembaro Zone should work with woreda health officeCBHI administrators in which they should improve the benefits package to determine and to solve problems before they become major issuse so as to adherance and more members renew in community based health insurance scheme.
- For Tembaro Woreda CBHI office and health providers needs more attention for CBHI users to hinder the dropout from CBHI membership by provide the quality health care service in health facilities and benefits of packages of CBHI scheme.
- The researchers expected to improve by doing further study with prospective study designs by triangulating with qualitative may explore more factors that determinanet CBHI-dropout membership.

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10. ANNEXS

10.1. Informed Voluntary Consent Form for Study Participants

Good morning / afternoon? My name is _____. I am working as the data collector for the study being conducted in this community by Mr. Tekeste Samuel, who is studying Master's Degree at Haramaya University College of Health and Medical Science, School of Public Health. Before we got to our discussion, I will request you to listen carefully to what I am going to read to you about the purpose and general condition of the study and you will tell me whether you agree or disagree to participate in this study at the end. The purpose of this study is to assess determinants of CBHI dropout among households in Tembaro District, Kembata Tembaro Zone, Southern Ethiopia, 2021. The study will be conducted through interviews. The result of the study will inform design to intervention wich will help to improve the CBHI based on the findings. I would like to assure you that privacy will be maintained strictly throught. A code number will identify every participant and no name will be used. Your responses to any of the questions will not be given to anyone else and no reports of the study will ever identify you. If a report of results published, only information about the total group will appear. The interview is voluntary and your participation /non- participation or refusal to respond or stop responding to the questions will have no effect now or in the future on services that you or any member of your family may receive from the service providers. If there are any questions or enquires any time about the study or procedures please contact, principal investigator through Mobile phone: +251-913831136/16670884 or email, tekestesamue@gmail.com, or contact IHRERC through 0254660708 or P.O. Box 235, Harar, Ethiopia.

Declaration of informed voluntary consent: I have read /was read to me the participant information sheet. I have clearly understood the purpose of research, the procedures, the risks and benefits, issue of confidentiality, rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that I have the right to withdraw from the study at any time or not to answer any question that doesn't want. Therefore, I declare my voluntary consent to participate in this study with my initials (signature).

Name and signature of participant_____ Date_____

Name and signature of data collector_____ Date _____

10.2. English version questionnaire

The questionnaire to assess the determinants of CBHI dropout among households in Tembaro district, KambataTembaro Zone Southern Ethiopia.

Name of data collector---------- Signature----------Date----------

Name of supervisor---------- Signature----------Date----------

Questionnaire code----------

000. Membership status: 1=case/member of CBHI dropout,

2 = control/members of CBHI adhered

001. The role of the participant in the household:

1. Father 2. Mother 3.Spouse 4. Other (Specify) _____

Kebele---------- Gote ----------

Section 1; Socio-demographic and socio-economic characteristics households

Code	Questions/variable	Alternative responses(circle the response)	Skip
101	Sex of respondent	1. Male 2. Female	
102	Age(in complete years)	_____years	
103	Residence	1. Urban 2. Rural	
104	Marital status	1. Unmarried 2. Married 3. Divorced/Separated 4. Widowed	
105	Religion	1. Protestant 2. Orthodox 3. Catholic 4. Muslim 5. Other specify_____	
106	To which ethnic group do you belong?	1. Tembaro 2. Kembata 3. Hadiya 4. Donga 5. Other (specify)_____	
107	What is your occupation?	1.Farmer 2.Housewife 3.Merchant 4.Laborer 5.Student 6.Other(Specify)_____	
108	Education status	1. No formal education, unable to read and write 2. No formal education, able to read & write	

		3. Primary education (1-8 grade) 4. Secondary education (grade 9-12) 5. College and above	
109	What is the main source of income?	1. Employment 2. Trading 3. Farming 4. others, specify_____	
110	What is the total number of people living in your family?	._____	

Wealth index

	Questions and Filters		Response categories	Skip to….
111	Does your household have the following properties?	Functioning radio/tape	0. No 1. Yes	
		Functioning television	0. No 1. Yes	
		Stove (kerosene/electric)	0. No 1. Yes	
		Refrigerator	0. No 1. Yes	
		Bicycle	0. No 1. Yes	
		Motorcycle	0. No 1. Yes	
		Watch (hand /wall)	0. No 1. Yes	
		Mobile/cell-phone/wireless	0. No 1. Yes	
		Sleeping bed	0. No 1. Yes	
		Cotton/sponge/spring mattress?	0. No 1. Yes	
112	What is the main source of drinking water for members of your household?		1. Surface 2. Well 3. Pipe 4. Other specify_____	
113	What is the main source of water used in your household for other purposes such as cooking and hand washing?		1 Surface 2. Well 3. Pipe 4. Other specify___	
114	Do you have toilet facility that you and your HH members usually use?		0. No 1. Yes	If 0→116

115	If yes, what kind of toilet facility do you and your members of household usually use?	1. Bush/field 2. Pit latrine 3. VIP 4. Other specify___	
116	What type of fuel does your household mainly use for cooking?	1. Wood 2. Charcoal 3. Electricity 4. Other specify____	
117	Do you have separate kitchen for cooking?	0. No 1. Yes	
118	To whom the house you are living in belongs to?	1. Rented from gov't 2.Rented from private 3. Gift from parents 4. Own property 5. Other ------	
119	What is the main material of the floor in your house?	1. Earth 2. Cement 3. Other specify	
120	What is the main material of the wall in your house?	1. Mud 2. Mud and Cement 3. Bricks 4. Other specify	
121	What is the type of roof of the house?	1. Corrugated sheet 2. Thatch roof 3.Other (specify)_____	
122	How many rooms in this household are used for sleeping?	Number of rooms ------	
123	Does your household own agricultural land?	0. No 1. Yes	If 0→126
124	If yes to Q713, how many hectares?	_____hectares	
125	If yes to Q713, by what are you cultivating?	1. Hand 2. Oxen 3. Tractor 4. Other___	
126	Average amount of agricultural products collected in one production year in quintal (100kg)	1. Teff _____ 2. Corn _____	

			3. Coffee __ 4. Ginger _____ 5. Other specify____	
127	How many of the following domestic animals does your household have in number?	Cows and oxen together	_____	
		Horses, donkeys and mules together	_____	
		Goats and sheep together	_____	
		Chickens	_____	
128	How much money in Birr from these sources of income does your HH earned in the past 12 months?	Gov't monthly salary	_____	
		Sale of agricultural products	_____	
		Sale of livestock	_____	
		Provision of any services including house rent, land rent, traditional healing, etc.	_____	
		Money received from gov't/ aid	_____	
		Money received from somebody working/living outside Ethiopia	_____	
129	Does any member of your HH have a bank or microfinance saving account?		0. No 1. Yes	

Section 2: Institutional andHealth related questions

201	How do you describe the health status of this household member now?	1.Excellent 2.Very good 3.Good 4.Poor 5.Very Poor	
202	How frequently did you visit health facility per year	_____ times per year	

203	Where do you mostly visit when any of your family members becomes sick?	1.Private Heath Facility 2.Public health Centre 3. Public hospital 4. Self-treatment, 5. Traditional healer 6. Local drug vendor 7. Other (specify)	
204	Reasons for going there?	1.Because of physically accessible 2. Because of fair cost 3. Because of crowding 4. Because of service quality 5. Because of CBHIs 6. Other (specify)	
205	Does any of this household member suffer from a chronic disease?	0. No ------→skip 1. Yes	If 0 →207
206	What was the major cause of illness	1= Tuberculosis (TB) 2= Diabetes Mellitus (DM) 3= cardiovascular disease (CVD) 4= HIV/ADIS 5=Other, specify	
207	Were any of your HH member encountered illness during the past 3 months?	0. No------→skip 1. Yes	If 0 →209
208	What types of illness have your HH member encountered?	1. Fever 2. Hedache 3. Couph 4. Diarrhea 5. Others	
209	Have seek medical treatment for the episode?	0. No 1. Yes	
210	Reasons for not getting treatment?	1. Health facility is too far	

		2. No enough money 3. Disease is self- limiting 4. others (Specify)	
211	Coverage of the healthcare cost?	1.Self 2.Free 3.Community	
212	How much minutes do you take to walk to get nearest health facility from your home?	1. Health center_____ minute 2. Health post_____ minute 3. Public Hospital_____ minute 4. Private clinics_____ minute	
213	Distance in kilometers?	1. Health center_____ kms 2. Health post_____ kms 3. Public Hospital_____ kms 4. Private clinics_____ kms	
214	Have you renewed your membership card? (yes : check card)	0. No 1. Yes	
215	Reasons for renewing?	1.Illness and/or injury occurs frequently in our household 2.Pregnant women in our HH needed health care services 3.Child/children in our HH needed health care services 4.To finance unexpected health care expense 5.Premium is low compared to the user fee 6.Pressure from the CBHI/ kebele officials 7.Pressure from other members/community 8. Other (specify)----------	(For renew members only)
216	Do you have planned to renew in the future?	0. No 1. Yes	(For renew members only)
217	When did you dropout from CBHI membership?	_____	(For drop-out members

			only)
218	Reasons for dropout membership from CBHI?	1.Illness and/or injury does not occur frequently in our household 2. Premiums fee is not affordable 3.Lack of awareness about the detail of how the CBHI works 4.The quality of health care services is low (waiting time, staff attitude, medicine, diagnostics) for CBHI members is not as good as for out of pocket paying patients (non CBHI members) 5. The benefit package does not cover all services of health care (referral, transportation etc.) 6.CBHI management staff is not trustworthy	(For drop-out members only)
219	Do you plan to re-join the CBHI scheme in the future?	0 =No 1=Yes	(For drop-out members only)

Section 3: Knowledge and perception related factors to (knowledge about CBHIs, attitude towards CBHI, perceived quality of service, cultural Belief/Practices)

Knowledge about CBHIs,			
301	Only those who fall sick should consider enrollment in CBHI.	1.True 2. False	
302	Only the very poor who cannot afford to pay for healthcare need to join the schemes.	1.True 2. False	
303	CBHI program are like savings scheme; you will receive interest and get your money back.	1.True 2. False	
304	Under CBHI program, you pay money (premiums) in order for the CBHI to finance your future health care needs?	1.True 2. False	

305	All health care costs were covered by CBHI programs?	1.True 2. False	
306	If you do not make claim any costs through CBHI, your premium was returned.	1.True 2. False	

Cultural Belief/Practices and perceived quality of service

307	Have you ever been member of social association?	0. No------→skip 1. Yes	If 0 → 309
308	Which social association you are/were member?	1. Debo 2.Equb 3. Iddir/kire 4.Credit and saving 5.Religious association	
309	Does your household currently have any outstanding loans?	0. No------→skip 1. Yes	If 0 → 312
310	Source of loan	1.Bank 2.Microfinance 3.Money Lender 4.Relatives 5.Friends/Neighbors 6.Other (specify)----------	
311	Purpose of loan request?	1.Production 2.School fee 3.Medical fee 4.Wedding 5.Holiday 6.Funeral 7.Food 8.Trade 9. Other (specify)----------	
Perceived quality of service			
312	Availability of drugs/medical supplies	1.Very high 2.High 3. Neutral 4. Low 5.Very low	
313	Availability of diagnostic/laboratory services	1. Very high 2. High 3. Neutral 4. Low 5.Very low	
314	Waiting time to get services	1=Excellent 2=Good 3=Fair 4 =Poor	

		5=Very poor	
315	The rapidity of the treatment's results of the health service provider	1=Excellent 2=Good 3=Fair 4=Poor 5=Very poor	
316	Got respect and friendliness from health care providers	1=Excellent 2=Good 3=Fair 4=Poor 5=Very poor	
317	Cleanliness of facility	1=Excellent 2=Good 3=Fair 4=Poor 5=Very poor	
318	Satisfaction of service in the nearby facility	1=Very satisfied 2=Satisfied 3= Neutral 4=Dissatisfied 5=very dissatisfied	
319	Satisfaction of overall healthcare services	1=Very satisfied 2=Satisfied 3= Neutral 4=Dissatisfied 5=very dissatisfied	

Section 4. Attitude towards Community-Based Health Insurance Scheme

No	Items	Level of agreement				
		Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
401	Community based health insurance has the potential on promoting health care seeking behavior from modern health care institutions.					
402	CBHI protects households from unaffordable healthcare expenditures.					

403	Premium payment for CBHI scheme is expensive.					
404	CBHI is means of collecting revenue (profit) to the government.					
405	CBHI scheme members receive high quality of services than nonmembers.					
406	Mistreatment of patients by the professionals is common for non-members than members					
407	The management and administration of CBHI scheme are very trusted					
408	CBHI is promoting the health condition of the poor.					
409	Health insurance is good to pool the risk of health expenditures within the sick and the healthy.					
410	Health insurance should be advocated and scale up to improve health condition of rural community					

Section 5: Scheme related factors determinants of CBHI dropout among households

Convenience of premium collection and Affordability			
501	The timing/time interval of premium payment is convenient for my household.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree	
502	The CBHI management officials are trustworthy	1. Strongly disagree 2. Disagree 3. Neutral	

		4. Agree 5. Strongly agree	
503	The CBHI registration fee is affordable for my household.	1. Affordable 2. Not- affordable	
504	The CBHI regular contrition (premium) is affordable for my household.	1. Affordable 2. Not- affordable	
Benefit-package design			
505	CBHI scheme covered through out-of-pocket spending at times of sickness sufficiently?	1. yes 2. No	
506	CBHI scheme benefit package design adequate for all health service	1. yes 2. No	
Scheme Experience			
507	Type of membership	1. Paying membership 2. Subsidized membership	
508	Health institution or facility visited	1. Health center only 2. Hospital only 3. Both health center and hospital	
509	Participated in CBHI related meetings and training	1. Yes 2. No	
510	Length of enrollment	_____ years	

Thank You for Your Time

10.3. Xambaarsa Version Informed Voluntary Consent Form For participant.

Hattigo yoonta! Sumui _____ yemamano.Ke gadi aleen Saamueeli Tekestee hujatano xinaatiyaa nagaasha shiisaanchu ikkikaa'llamiyaa. Issaoont Harmaayi Uniiversteen Gadi fayyimaan lanki digri/maastersa hujateenan yoomaaha ihaniaayan ka xinaatiyaankasin a'nnu malalanteen aagateenata ikko daafiyaa xinaatiyaanasa kaa'llautansa xa'maankinne xa'michehaakkata sila'een fanqashshiteenuta maashimmeen xa'maanki'nne. Gadu hangaffee fayyimma madiiniichch mini annaakkana amaakka doommeen awur qaxahaa beegamaanni mereeroom aphantee daafaakat Xambaaro woredaan; Kembaata Xambaroo Zoonaani; muggenni Tophphe; 2021 maarato wogganet,(M.W). Kaxinaati wona muummexawu X/W/F/X/minihuu X/W/X/minu mexxoomaan maaxeemi kaalato aleen fushshitaa iggidiyaa qagisi dikkishsha assanoha ihan hikkaniichch altiishin ammo rosaanchiyaansin fayyimma kaalato gashshi roshsha aleen lanki digre daggiyaa kaa'llanos.Kanniichehin abbisuhuu quttaatoon gadisi fayyimma qorabancha roshsha haareesiyaa kaa'llano.Xa'michchus lemoodumiichch(20) marri sajjaduma(30) daqiqa aaggiyaa dandanooha ihaniyaan xa'michehasin biri qixxamogiin xa'maam.Xa'michchisi jeechchu fanashshiyaa hasseenubu hakka bifa xa'michehaa awuriyaa hoogo hakka jeechehuhaa urisiyaa danditeenanta.Xawu ikkodaa xa'mmichehuhaakkatanas a'nnu fanqashshiteenaata fanqashshaakka maxeemi kaalato aazeen hanqafantee mini mannaakkt dangitti hikkiminniyaa fushshaatoon aaggeenubuggan assano.Xa'michehus 20 marri 30 daqiiqa xoofiyaa dendeno.Asiteenenta'nne hakkas bifi fanqeshaakketa misxiriin anfaammigaa su'maki'nne hoogo kinnee mehooma caakkisano hakku xawuhuu xaafamunbugga abbisseen daggeenunta'nne hansaam. Xinaati beeqqencha xibbixibbeen annichehisi shene aleen shoohameeha.Xinaatisi beeqemenchu beeqemina hoogi meftus qorabemeehaa.Beeqemiyaa hasena yooda hasseenta saataan fuliyaa denditeenenta.Fenqeshshiyaa hasseenunbu xa'micheha fenqeshshu hoogiyaa denditeenenta.Xinaatisi lubbaami su'mmu Saamueeli Tekesteet silki wollu 0913831136/16670884 ihaniyaan Harimaayi Universite Fayyimena Hakkami Xinaatinna mirimiri sinamigibaari awwani komite silki wollu 0254660708 posti saaxini wollu, Harere deqqiyaa denditeenanta.Beeqemenchis duuhi woreqeta nebbabbeem, xinaatisi shoohu, xinaatisi kaletusii genisii, misixirawinetusii maytaakkesii gegeritee'nne.Hashshoommi xa'mmu xa'mmiyaa dendaamigaa hashshoommi saata xinaatiichis fulu denidaamiga geggerris kulteen'nne hikka daafiyaa xinaatantas beeqemiyaa ekku yeemiiha ihus firmiintae.

Beeqemanchi su’mmahaa firmahaa---------- bare----------

Duuha shisaanchi su’mma----------firima----------bare----------

10.4. Xambaarsa version questionnaire

Gedus hankefee fayyimma mediini woggeesi fushshu/mewaaccu/ baateen hoogo qeyereen hunu caakkisaneno wolu keenaakka xaaccano xinaati naamuna shiisi xa’mmicheha muggeenni Tphphe Kembaata Xembaaro zoonaan Xembaaro wereda.

Duuhas shiisaanchi su’mmu----------firima----------bare----------

Hujis awanaanch su’mmu ---------- firima----------bare----------

000. Hanikafenicha haggaru:

1= Gedus hankefee fayyimma mediini murehha

2= Gedus hankefee fayyimma mediini haresayohha

001. bekemanichu miniazen yosi kobbu 1. Anna 2.Amatta 3.Minanna 4. Wolu yooda

Xa’mmichchis kooddu---------- kebelesi su’mmu---------- nuusu---------

Wona kifila:- Xeqilaalla gedoontas shoohamme xinaatahaa mexxooma xewaakka awujjeegiin.

Codda	Xa’mmichchaakka	Fenqeshshaakka	Mela
101	Meeggoma	1. Goona 2. Meentu	
102	Idimaa	_____ (wiima woggen xaafamun)	
103	Heecheha me’nni	1. Arada 2. Gexera	
104	Gelte haga/mini galtehaga/	1. Mini gelunbwaa/tumbutaa 2. Mini galleehaa/teeta 3. Geltihiireehaa/teeta/Annenna ikki yoorra 4. Mini annu/ama/reeha/retoohaa	
105	Haymaanooti haga	1. Perotestaantaa 2. Ortedokisaa 3. Kaatoolikaa 4. Muusiliinchulta 5. Wollu---------	

106	Hakka minnabokoo?	1. Tembaarutaa 2. Kambaataa 3. Haddiyataa 4. Dongaa 5. Wollu (kulliye)____	
107	Hujjik maahaan?	1. Hogaai gallaanicho 2.minigeshanichuta 3.zezallaanchcho 4.maqqee hujjattanichcho 5.Rossaanichcho 6.Wollu(kulliye)_____	
108	Roshsha	1. Mehaa rosumbuwaa/taa 2. Nebbabuhaa xaafu dandenooha/danditaata 3. Wonaa gerdebbi roshsha xoffeeha/ xooffeeta(1-8 kiffillaa) 4. Laannic gerdebbi roshsha(9-12 kiffillaa) 5. Dippilooma/hoogo hikkanniichch aliin	
109	Deqqeenori wonaa bu'lleechchu	1.Woma/woma ihunbu dirijjit qixira 2. Zezelu 3. Uulla huji 4. Wolu yooda caakkisemun	
110	Mini menni wollu	Wollooin----------	
Appii xammichakataa			

Coda	Xa'mmichchaakka		Fenqeshshaakka	Mela
111	Qomiikkee mini manni aphphu(aphphaaka)metiichch aliin malaa assiyaa dendeesano	Hujjattanno Iraadoona/zaammarranchu	1. Yooe 2. yooeba	
		Hujjattanno Televizhiina	1. Yooe 2. yooeba	
		Maabiraata/laammibin hujjatanno chochittaa	1. Yooe 2. yooeba	
		Firijs	1. Yooe 2. yooeba	
		Biskleeta	1. Yooe 2. yooeba	
		Motoribiskileeta	1. Yooe 2. yooeba	
		Jeechu kuullaanichu	1. Yooe 2. yooeba	
		Siillikkaa	1. Yooe 2. yooeba	

		Ossoo maannatti	1. Yooe 2. yooeba	
		Ossoo enniddebberru	1. Yooe 2. yooeba	
112	Minus minammogu agganno wooau		1.ellea'a 2. Leegga'a 3. boobee`a 4. wollu yooda (kulliyyee)__	
113	Minus minammogukaalakeenowooau		1. Ellea'a 2. Leegga'a 3. boobee`a 4. wollu yooda (kulliyyee)	
114	Minnisi maanuu shumaa minu yoosi?		1. Yooe 2. yooeba	2 ekkodda 106 higgi
115	Minnisi maanuu haatiigoomu shumaa minu yoosi?		1. daarigg azzeni 2. roosha 3. iffisaanichchu yooha ikki fooshu yoobaa'e 4. wollu yooda (kulliyyee	
116	Minnisi maanuu haatiigoomu wassa shoollannmoohu maahinnet?		1. haaqin 2. kaassalliin 3. Maabiraata 4. wollu yooda (kulliyyee	
117	Echa sholeno kushinu yokenido?		1. Yooe 2. yooeba	
118	He`aenenita minnu ayeni?		1.Wommich arigichitenina 2.Mainichi arigichitenita 3. minimanichi ragaenita 4. gagikine 5. wolu yooda--	
119	minnisi gaaxuu haatigomaala		1. buuchcha 2. cimminituu/haaqqa 3. wollu yooda (kulliyyee)__	

120	Minnisi Goodu mahiin hujjatamee?		1. Orriichcha 2. Orriichchin cimminitoon 3. bilooketta 4. wollu yooda (kulliyyee)__	
121	Minnusi efisamihu hatigoma?		1. auwwanin 2. korikoron 3. wollu yooda (kulliyyee)	
122	Meau osso kifilu yokine?		Kifilaka wolusi ------	
123	Hogo aulati yokinenido?		1. `aa 2. yooba	2 ekkodda →126
124	Wolo 123 `aa ekeda meao hekitara?		_____kekitara	
125	Wolo 123 `aa ekeda mahini hujatenonita?		1. Anigan 2. boran 3. Kamelin 4. wollu yooda (kulliyyee)	
126	wogan hawanika domiyin(100 faresula) gimitin dakitenani		1. Xaaffaa-------- 2. Baaddala-------- 3. Bunnaa--------- 4. jaanijibelaa-------- 5. wollu yooda (kulliyyee)	
127	Minisi menniyaa yoohu Mini fetila	Boora Sa'a mexxedda	_____	
		Buula Harruuchchu Faashshu mexedda	_____	
		Hoolchu Fellaa mexxeda	_____	
		Attabaa	_____	
128	Minikine mani wogge daqqu hawanika ehanno?	Wommich agganaan dakeenno	_____	
		Hoggo laalichchu hirrichch daqqennor	_____	
		Gizzi hirrachch	_____	
		Minichi, uollachi, roshsha	_____	

		hakimich wolorich deqenoru		
		Womichichi/erridatichi dakeno womasha	_____	
		Hada badoni heano manichi	_____	
129	Minikine manichi banik tee`m fayinance dabitaru yosando?		1. `aa 2. yooba	

Laanniki kifila:- fayyimmaan aphphant yoo xa'mchaakkata

201	Teesu ka jeechchoon minimanni gu'mi fayyimmagu ma awudano?	1. Higa abbish bareda 2. Abbish bareeda 3. Bareeda 4. Bareedaba 5. Bareedumbuwaa	
202	Wooggani Mee ae koodaa hakkemenita	_____ wooggani	
203	Miniichchikiine mannu moosano jeechehu kakka'ne hakkamanteenawunta?	1. Gagi fayyimma taquaamaan 2. Womi fayyimma taquaamaan 3. Mangistti hosipitaalaan 4. Gaga gagiin hakkamu 5. Aalo hikkiminni ma'ni mariin 6. Amba yoo zabbi qu'mitta mariin	
204	Martoosi ma'ni doo'ritoo gajaaju	1. Fayyimma taquaamu onxani ikko daafiyaa 2. Fayyimma taquaami hikkinui wocis aaga ikko daafiyaa 3. Fayyimma taquaamus worafu bataunbusiiha ikko daafiyaa 4. Fulano fayyimma kaalatus laalchaamu ikko daafiyaa 5. gadus hanqafee fayyimma madiina gajaajin 6. Wolu yooda caakksamun.	

205	Miniki’ne manniichch egrree moosu moosano mannu yoo?	0.Yooba (higgiyye) 1.`aa	0 ekkodaa 207 higgiyye
206	Moosis gejjaju	1. tibbita 2= suukkari moosu 3= woozzan moosu 4= aeddissa 5= Wolu yooda caakksamun	
207	Higgoo saso agannaakka aazeen miniki’ne manni aazeen moosu ekkee? (xidammo mannu yoo)?	0.Yooba (higgiyye) 1.`aa	0 ekkodaa 209 higgiyye
208	Miniki’ne manni aazeen hattigomu moosu xidammo	1. Ebba 2. Demumi 3. Kuchhenna 4. Godebeaa affushu 5. Wolu yooda	
209	Marteentada hikkiminnas daggiteenta?	1. Daqiniba(hakkamamimiba) 0. `aa	
210	Hikkiminnas daqqitunbuuha ikkoda gajaajjus mahaan?	1. fayyimma minus abba qeera ikko daafiyaa 2. ihano womaashu hooggo dafiyaa 3.moosuus gaagin agguraano daafiyaa	
211	Hikkiminuisi womaashshu baatammo woggoo	1. gagiin 2. xallanka 3. hibratasabintas	
212	Onxane yoo fayyimma taquwaama miniichchikine iillisyaa hawanka daqiqa aaqqano?	1. fayyimma mini--------- daqiqa 2. fayyimma kella--------- daqiqa 3. womi hospiitaala------- daqiqa 4. gagi kiliniikka---------daqiqa	
213	Kee’rimas kilomeetriin hawanka ihano?	1. fayyimma mini---------kilomeetr 2. fayyimma kella-------- kilomeetr 3. womi hospiitaala------- kilomeetr 4. gagi kiliniikka---------- kilometer	
214	Gedus hanqeffee fayyimma mediini beenqencha matawoqi kaarda haareeseenta?	0. Haareesinba 1. Haareeshsheem(kaardus xuudemun)	

215	Gedus hanqeffee fayyimma mediini beenqenchooma haareesi gejaajus	1. Mineeta'nne annannu annennu xidatii dengituhuu ihano daafiyaa. 2. Mineenta'nne hikkiminni kaaletu hasissaase maqeelut meentichut yoo daafiyaa. 3. Mineenta'nne hikkiminni kaaletu hasisaasaa oosut yo daafiyaa 4. Qorabemunbu hikkiminna woci/fushshu/gemba yumunbugga ka'mamiyaa. 5. Fushsheenosiru/mawaacus qome baatenaachch qewu ikko daafiyaa. 6. Beeqemaannich awwansaaniichch/gedus hanqeffee fayyimamediin geshshaanniichch ikko maqeesiin. 7. Wolo beeqemaaniinchch hooggoambssg gedu maqeeshiyaan 8. Wolu yooda caakksamun.	(beenqenchooma haareeso kenne xella)
216	Kannichch zakkin beeqenchoomakki haareesi malu yookke?	1. Yooeba 2. Yooe	(beenqenchooma haareeso kenne xella)
217	Gedus hanqeffee fayyimma mediini beeqencha muroo haakeddat?	_____	(beeqencha muritoo kenne xaale)
218	Gedus hanqeffee fayyimma mediini beeqencha muriyaa gejaajjuskinne mehaan	1. Mineenta'nne annannu annannu xidatii gembtuhuu yoebai daafiyaa 2. Fushsheenno gizzus maqe 3. Gedus hanqeffee fayyimma mediini huje aleen ihano zaiccu hooggoe daafiyaa 4. Gedus hanqeffe fayyimma kaalatus mediiniintas assamano fayyimma kaalatus hiwankankas ikko daafiyaayeent./direeha ikko daafiyaateet	(beeqencha muritoo kenne xaale)

		5. Gedus hanqeffee fayyimma mediini kaalato maiqefaakka hikkiminni hasena'nne wiinshitumbutta ikko daafiyaateet 6. Gedus hanqeffee fayyimma mediini geshshisoqemaannu/hujetaanu amma'nnecnubusara ikko daafiyaa.	
219	Kannichch zakkin beeqenchoomakki haareesi malu yookke?	1. Yooeba 2. Yooe	(beeqencha muritoo kenne xaale)

Sakki kiffila:Gedus hanqefee fayyimaa mediini zeison gedisi zaiccu, roshata, kalatto yoyimata ammonishi xiddishata ma awudenondo ularansitaa xa'mmichehaakka.

Gedus hanqefee fayyimaa mediini zeison gedisi zaiccu ma awudenondo ularansitaa xa'mmichehaakka.			
301	Gedus hanqefee fayyimma mediini beeqemaannu ihu hassisanssaahu moosiyaa dendaam yit meltaa keenuwaa xalla	1. Gerita 2. Geriteba	
302	Gedus hanqefee fayyimma mediinua wona womaashcha baattunta asseenno jeechchu womaashshus fanqelusi hoogusii degantiba	1. Gerita 2. Geriteba	
303	Gedus hanqefee fayyimma mediinua awwansaantu wolo minji tequwaamaakkega womaashshakki qaloon fanqeshenoga at meltan?	1. Gerita 2. Geriteba	
304	Gedus hanqefee fayyimma mediinua beeqemaanchu ikkoomiihu tequwaamus awwanni yoo jeechchi fayyimma hasenai wiinshuntaineet.	1. Gerita 2. Geriteba	
305	Fayyimma abooyyi gu'mmunku wocci/fushshu/ wiima wiimiin gedus hanqefee fayyimma mediiniin iffisamano	1. Gerita 2. Geriteba	
306	Gedus hanqefee fayyimma mediini awansaatoon makaaletuhaa deqqitumbuha ikkoda gizus	1. Gerita 2. Geriteba	

	fanqelanokkiyaa.		

Roshaan appaamii yoorra/roshatta

307	Yoonit hegeggon hakka mexxedoomman ekki dagganinido?	0.ehhunibaa 1.aa`a	(0 ekkodaa 309 higgiyye)
308	Haakaa mexxedomman yonitta?	1.allonni 2.minijakon 3.iddirraan 4.wommashshi minijakon 5.mabarran	
309	Kassatan bebbu yokkinenido?	0.yobbaa 1.yoee`	(0 ekkodaa 311 higgiyye)
310	Hannochchi leachchitentaa	1. Bannika 2. kawoo lee`sanchichi minichchi 3. Womasha lee`sanchchi 4. elanchchi 5.yabichchi 6.wollu yoddaa----------	
311	Benissi gejajju?	1.wixxata 2.roshaminn batennata 3. hakamame 4.boloche 5.baa`lle 6. Onnatta 7. Echata 8. zazalota 9. wollu yoddaa----------	
Fayyimma xujoggin zaechchu			
312	Zabbu/hikimin oddata lallu	1. Abbish abbaa 2. abbaa 3. Mahaa ihanoba 4. kotaa 5. abba kotaa	
313	Maremeri/labboratore hujjee lellu	1. Abbish abbaa 2. abbaa 3. Mahaa ihanoba 4. kotaa 5. abba kotaa	
314	Kaleetu deqqenno jechchu	1=abishii wooyaa 2=wooyaa 3= mehaa ehhannoba 4=nuguulla 5= abishii nuguulaa	
315	Fayyimma kalattu asita lubama haggerru	1=abishii wooyaa 2=wooyaa 3= mehaa ehhannoba 4=nuguulla	

		5= abishii nuguulaa	
316	Fayyimma kalattu asita abinitaa etassa xujjogin	1=abishii wooyaa 2=wooyaa 3= mehaa ehhannoba 4=nuguulla 5= abishii nuguulaa	
317	Fayyimma minni muchurima	1=abishii wooyaa 2=wooyaa 3= mehaa ehhannoba 4=nuguulla 5= abishii nuguulaa	
318	Hegeggon yoo fayyimma minni assamano bajigguta	1=abishii chulassano 2= chulassano 3=madeggo 4= chulassuboo 5= abishii chulassuboo	
319	Hundaka fayyimma kallatu woyimmas	1=abishii chulassano 2= chulassano 3=madeggo 4= chulassuboo 5= abishii chulassuboo	

Shollik kifila:- Gedus hanqefee fayyimma mediini alleen yoo xuudisha

Coodda	Xa'mmichchaakka	Ammannechchi geerriddebaa				
		Abbish iitamaam (5)	Iittamaam (4)	. Mahaaniba(3)	Ittamanba (2)	Miqan ittamaanba (1)
401	Gedus hanqefee fayyimma mediini haarroo fayyimma qoorrabaniichchan haasii roosha le`issee maakoo yoosi					
402	Gedus hanqefee fayyimma mediini beeqemaanchu illuunibu fayyimma fuullaanno womaashshus koorraabanno					
403	Gedus hanqefee fayyimma mediini beeqemaanchu baatteenno womaashshus ittiisaa					
404	Gedus hanqefee fayyimma mediini deequu (qaalu)					

	woommee shihiisee wookkahha					
405	Gedus hanqefee fayyimma mediini beeqemaanchu eekkoohu beeqemaanchu eehhuubu anniichch qqaawwu kaallattu daakkano					
406	Haakkammanittarraa diichchu luubbamman illoo beeqemaanchu eekkoo hanniichch beeqemaanchu iihuunibuu hanniichch roossameehaa					
407	Gedus hanqefee fayyimma mediini gaashshi alleen ammaanattu yooeba					
408	Gedus hanqefee fayyimma mediini xuudaannoohu buuxii fayyimma dooreeteet xaallii					
409	fayyimma mediini moossanninna fayyaa maanne xuumma					
410	Hooggaai geellanni fayyimma doorrattu xuudannogiin fayyimma mediini deeggiisisse abbishshi haarra ehhuu haasisaanoos					

Onitik kifila: Gedus hanqefee fayyimaa mediini huje azen apaniti yoo xamichaketa

Abalinete fusheno womashu hunidanika danidamanonido xudano xemichaketa			
501	Abalinete fusheno womashu bateno jechu hunidanika makenanido?	1. mikani etemamiba 2.etemamiba 3. mehaehanoba 4.etemami 5.abishi etemami	
502	Gedus hanqefee fayyimaa mediini azeni hujata menaketi amnanitehanido?	1. mikani etemamiba 2.etemamiba 3. mehaehanoba 4.etemami 5.abishi etemami	
503	Abalinete mazgabame fusheno womashu hunidanika danidamanonido?	1. likemma 2. likemma ehumubo	
504	Abalinete fusheno womashu hunidanika danidamanonido?	1. likemma 2. likemma ehumubo	
Gedus hanqefee fayyimaa mediini hanikaferu			

505	Gedus hanqefee fayyimaa mediini asano kalatuti mosi jechu woluwochi xemumubonido?	1. `aa 2. Ehumubo	
506	Gedus hanqefee fayyimaa mediini hanikaforu fayyimaa kalatota ekehanido?	1. `aa 2. Ehumubo	
Gedus hanqefee fayyimaa mediini daakemaa rooshsha xudannoggin			
507	Beeqqanchaan haagarru ma`awuudanno	1. Baattaniichcho 2. Buuxichchi buuxichcho	
508	Haaka fayyimaa minen hakkemeniteta	1. fayyimma mini 2. womi hospiitaala 3. lemmoniin	
509	Gedus hanqefee fayyimaa mediini ya`ahaa beqaniten daggenaninido	1. Gerita 2. Geriteba	
510	Gedus hanqefee fayyimaa mediini hanqefeemu meeo wogga ikke	_____wogga	

Egennoommi jeechchiyaas galaxxaam

10.5. Curriculum Vitae (CV) of Principal Investigator

1. Personal Information

Full Name: TEKESTE SAMUEL SHIGUTE

Sex: Male

Place of birth: Tembaro, SNNPR, Ethiopia

Date of birth: March 10/1988 G.C

Marital status: Married

Nationality: Ethiopian

Contact address: Mobile: +251-913831136.

E-mail: tekestesamue@gmail.com

2. Educational Background

Primary school(1-8)	Ambukuna primary school
Secondary(High) school(9-10)	Yekatit 25/67 Hossana
Diploma(level v)	Arba Minch college of health science
Higher Education(BSC) degree	Rift valley University
Higher Education(MPH)	Haramaya University

3. Language Skill

Language	Speaking	Writing	Reading	Listening
English	Very good	very good	Very good	Very good
Amharic	Very good	Very good	Very good	Very good
Hadiyigna	Good	Good	Good	Good
Kembategna	Good	Good	Good	Good
Xambaaregna	Excellent	Excellent	Excellent	Excellent

4. Qualification

1. Level V Diploma in public nurse from Arba Minch college of health science
2. BSC Degree in Health service management from Rift vally university
3. MPH Degree candidate in Haramaya University

5. Training On

1. “Health Management Information System”(HMIS)
2. “Injection Safety and Sharps Waste Management”(ISSWM)
3. “Training on Supportive Supervision”
4. “Integrated Refresher Training”(IRT)
5. “Health Extension Worker TOT”
6. “Provide Initiative HIV counseling and Testing”(PIHCT)
7. “FP/HIV Integration”
8. “District Health Management Team Training”(DHMTT)
9. “GPS Basic Training and participation in GPS data collection”
10. “Recommendation Paper in facilitating Community Health Information System”(CHIS)

6. Work Experience

Twelve (12) years of experience as a health professional in Tembaro Woreda health center and health office SNNPR, Ethiopia. (From 03/04/2000 E.C until 21/01/2012 E.C)

7. Hobbies

1. Reading academic books and Fictions
2. Attending religious programs
3. Helping people

8. Reference

1. Mr. Tadesse Mekuria Tembaro Woreda Head, Health Office, +251916672407
2. Mr. Bogale Zeleke Tembaro Woreda Vice Head, Health office, +251910339403

10.6. Approval sheet

HARAMAYA UNIVERSITY POSTGRADUATE PROGRAM DIRECTORATE

Determinants of community-based health insurance (CBHI) dropout among households in Tembaro District, Kembata Tembaro Zone, Southern Ethiopia.

Submitted by:

_____ _____ _____

Name of student Signature Date

Approved by:

1. _____ _____ _____

Major Advisor Signature Date

2. _____ _____ _____

Name of Co-Advisor Signature Date

3. _____ _____ _____

Name of Chairman, DGCSignature Date

4. _____ _____

Name of Dean, SGS Signature Date

5. _____ _____ Name of Chairman, CGS

Signature Date