



ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCE, SCHOOL
OF PUBLIC HEALTH

**ASSESSMENT OF DROPOUT RATE AND ASSOCIATED FACTORS
FROM COMMUNITY BASED HEALTH INSURANCE AMONG
INFORMAL WORKERS IN GUMBICHU WOREDA, OROMIA REGION,
ETHIOPIA**

BY: - NEGASH KEBITE (BSC)

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEAGUE OF
HEALTH SCIENCE, SCHOOL OF PUBLIC HEALTH, DEPARTMENT OF
HEALTH ECONOMICS AS PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR MASTER'S DEGREE IN HEALTH ECONOMICS.

DECEMBE 2020
ADDIS ABABA, ETHIOPIA



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DECLARATIONS

I, the researcher, Negash Kebite Tefera, I.D No GSR 9166/11, hereby declare that this research report is my original work and that it has not been submitted partially; or in full, by any other person for an award of degree to any other University/Institution.

Full Name: Negash Kebite Tefera, Signature -----Date-----

This research report has been submitted for examination with my approval as University advisor.

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ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCE
SCHOOL OF PUBLIC HEALTH

This is to certify that the thesis prepared by Negash Kebite Tefera, entitled: Assessments of dropout rate and associated factors from community-based health insurance among informal workers in Gumbichu Woreda East Shoa, Zone, Oromia Region. And submitted in fulfillment of the requirements for the Degree of Master of Public Health in Health Economics complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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ACRONYMS

CBHI	Community -Based Health Insurance
EDHS	Ethiopian Demographic and Health Survey
FMOH	Federal Ministry of Health
MOH	Ministry of Health
OOP	Out-of-pocket-payment
SPSS	Statistical Package for Social Science
SSA	Sub-Saharan Africa
UHC	Universal Health Coverage
USAID	United States Agency for International Development
WHO	World Health Organization

ABSTRACT

Background: Ethiopia has introduced community-based health insurance (CBHI) scheme to enhance healthcare services utilization and protect the poor from catastrophic health expenditure in 2011. Previous studies indicate that CBHI support the efforts being made to create access to primary healthcare services, a number of schemes are mostly constrained by low membership uptake, high dropout rate and exclusion of the poor.

Objective: - To assess of dropout rate and associated factors from Community-based health insurance (CBHI) among informal workers in Gumbichu Woreda, East Shoa Zone, Oromia Region.

Methods: Community-based cross-sectional study design was employed. Using interviewer administered questioners to assess factors affecting dropout of CBHI in Gumbichu Woreda. The study participants were selected by using systematic random sampling technique. The sample size required for the study is 624.

Results: The study found that educational statuses of respondents were found to be an associated factor for dropout of CBHI. Households who are illiterate were 2.174 times more likely to drop out from CBHI than those who were secondary education and above, AOR = 2.174, 95% CI (0.906, 4.422). Socio-economic status of households also affect dropout. Household with wealth status of low income were 3.44 times more likely to drop out from the CBHI than those high wealth statuses, AOR = 3.44; 95% CI (1.344, 8.805). Households with middle income group were 1.238 times more likely to drop out than those high-income groups, AOR = 1.238; 95% CI (0.693, 2.213). Perceiving service quality is also reason and positively correlated with members to dropout from their membership ($r=0.297$ at $p=0.00$). Limited scope of illness covered by the scheme and distance from health facility are also reasons and positively correlated with members to dropout from their membership ($r =0.272$ at $p = 0.00$) and ($r = 0.117$ at $p = 0.0015$).

Conclusion: This study brings reasons and factors for dropout of CBHI membership. It is found that education, socio-economic status, limited scope of illness, distance from health facility and quality of healthcare services were correlated with dropout of CBHI.

Keywords: - Community-based health insurance, Dropout, Informal workers, Ethiopia, Gumbichu.

1. INTRODUCTION

1.1 Background

As universal health coverage (UHC) is becoming a priority, there is a need to increase financial accessibility of healthcare services, protecting the population from catastrophic expenditure, and decreasing the risk of extreme poverty. The community-based health insurance (CBHI) scheme provides financial security by dropping out-of-pocket healthcare expenditure and improves cost recovery. However, in low income countries, low enrolment rates hinder the successful development of CBHI schemes. Low enrolment rates cause danger to the sustainability of CBHI schemes not only because they reduce the size of the insurance pool but also because they bear a negative impact on additional enrolment and dropout (1).

Health safety is progressively more being recognized as an essential part of poverty decrease effort. Many lower and middle-income countries (LMICs) have not been able to fulfill equitable healthcare needs of their citizens. They faced challenges in raising adequate funds to finance health service. Consequently; these days, they have been promoting community-based health insurance program (CBHI) as a means of financing healthcare. However, it had not been brought significant impact on the accessibility of healthcare because of the low level of members' enrollment rate. Developing countries account for 84% of the global population from which about 50% and more live below poverty. About 1.3 billion are rural poor informal sector workers that produced 20% of the domestic product. Furthermore, 90% of global disease burden was born by such countries (2).

To access quality of care and overcome catastrophic out-of-pocket expense and also to strength healthcare finance, nations working on community-based health insurance whereby risk pooling and sharing. To reach this, households could be convinced and enrolled in the insurance and also renewed since a crucial aspect of achieving universal health coverage is expand a financial hazard pooling system that cross-subsidization in health scheme, which is health insurance. It is an instrument in achieving universal health coverage. So to expand risk poling, to move towards universal health coverage user out-of- pocket payments must be reduced and level of prepayment must be increased (3).

Universal healthcare coverage (UHC) has been problematic to achieve in many developing countries. The large populations of these countries are dependent on direct out-of-pocket (OOP) expenses, which include payments for medicine and other health services (4). The World Health Organization (WHO) views medical fees as a significant obstacle to healthcare coverage and stated that the only way to reduce direct payments governments are encouraged community-based health insurance (CBHI) as an alternative to user fees (4). Community-based health insurance scheme has designed to insure that sufficient resources are available for members to access effective healthcare (5). Contributions are accumulated and managed to spread the risk of payments for healthcare among all scheme members.

Annually 150 million peoples face catastrophic direct out-of-pocket health expenditure (OPE), from these over 90% occurred in low and middle income countries (LMICs). Most developing countries were promised to achieve universal health coverage (UHC) by minimizing out-of-pocket expenditure (OPE) through risk pooling mechanism established community-based health insurance (CBHIs) for their rural and informal worker segment of citizens (5). Although initial enrollment is important scheme sustainability clearly requires renewal of membership. But low enrolment of peoples in to the CBHIs is common problems for most LMICs. Those studies that dealt with the renewal of CBHI membership revealed that the dropout rate is very high. For instance, in Gujarat and Maharashtra district of India the dropout rate from community-based health insurance (CBHI) was 49% and 67% respectively (6).

Limited benefit packages, exclusion of out-patient services, unhurried claims processing times and the gaps among the amounts claimed and amounts paid out by insurance, low level of knowledge concerning the CBHI schemes, affordability and no-claim in the preceding term were the principal reasons for dropping out of community-based health insurance (CBHI) scheme (6).

In Africa from 900 million peoples would be a member, only 2 million or 0.2% is enrolled. In sub-Saharan countries, exception of Ghana and Rwanda membership ratio is below 10 % (7, 8, 9). In Guinea Conakry, the initial enrollment rate of community-based health insurance (CBHI) in 1998 was 8% but this enrollment rate was declined to 6% a year later in 1999. The main reasons for non-enrollment and dropout were scheme affordability, Poor quality of care and inability to pay the premium (5).

In the Nouns district of Burkina Faso, the enrollment rate was between 5.2% and 6.3% in 2004 to 2006 respectively. However, in 2005 and 2006, the dropout rate was 30.9% and 45.7% respectively (10). The study done in this area shown the reason for dropout were female household head, higher age or lower education of household head, lower range of illness episodes in the past three months, fewer children or elderly in household, poor perceived healthcare quality, less seeking care in the past month definitely effected on dropout, rising the rate (10).

In Senegal, in three CBHI schemes that were established between 1997 and 2001, in 2009 their dropout rate was between 58 and 83%. Awareness of poor quality of health services is known as the most significant determinant of dropout (11).

The Ethiopian healthcare scheme is characterized by high-out-of-pocket spending, increased healthcare desires, incapability to organize more income for health among rural dwellers, and incapability to fully improve costs of care incurred by beneficiaries (12). To reduce high-out-of-pocket expenses and enhance healthcare utilization, the government of Ethiopia launched CBHI. Overall enrollment was 45.5% during December 2012; regionally the uptake was 44%, 35%, 49%, 34% in Oromia, SNNP, Amhara and Tigray respectively since April 2012 (13). CBHI scheme pilot was begun in thirteen districts selected from four main regions (Oromia, SNNPR, Amhara and Tigray) Regional States in the mid-2011 (13). CBHI had scaled up to 509 districts with main intentions of improving quality, financial access, remove/reduce financial burdens on households during illness, mobilizing additional resources for the health sector and reach universal coverage with these objectives still health insurance in Ethiopia is at its infancy stage (40).

The government of Ethiopia started to address the problems of OOPE via CBHI scheme which enrolls parts of the community with informal work in rural and urban areas. The scheme was introduced by Ethiopia's Federal Ministry of Health (FMOH) in collaboration with USAID, Abt Associates and CARE Ethiopia, and is ingredient of the government's broader healthcare financing reform strategy which aims to recover quality and exposure of health services by identifying option healthcare resources (13).

In Ethiopia, the enrollment ratio of 13 first piloted Woreda, in June, 2015 is 48 % (41% payers and 7% fee waiver). And the dropout rate from CBHI stands at 18% reason for dropped out of community-based health insurance (CBHI) were affordability of premiums and expected returns from the insurance (10).

East Shoa Zone of Oromia Regional State is one among CBHI implementing Zones from the Country, and ten of districts are implementing with different coverage. Gumbichu Woreda is one of these CBHI implementing districts which established CBHI scheme in January 2011. Gumbichu is one of the Weredas in the Oromia Region of Ethiopia, Part of the Misraq Shoa Zone; Gumbichu is bordered on the south by Lome Woreda, on the southwest by Ada'a Chukala, on northwest by the Amhara Region. Gumbichu is located to the east direction of the country and 68 KM long from Addis Ababa.

According to Ethiopian health insurance report 2015 enrollment rate in Gimbichu Woreda was 67%. Un-published report from Woreda Health Office indicates that: Coverage and renewal rate is not in steps forward. The enrollment rates were 52% in 2018/19. But this enrollment decreased by 15% (CBHI) as the scheme report 2018/19).

Even though the government of Ethiopia endorsed and launched CBHI pilot in some selected Woreda of different region, still its dropout in Gumbichu Woreda remain the main challenge. Socio-economic, demographic as well as scheme related a factor takes a great share for high dropout of CBHI.

1.2 Statement of the Problem

Health problem leads to direct expenditures for medicine, transport and treatment as well as to indirect costs related to a reduction in labor supply and productivity (7). Be deficient in financial security lead to taking away from healthcare and poverty, trapping families in a series of poverty and ill health is the main challenge in low-and middle-income countries (15).

Yearly about 808 million peoples faced catastrophic direct health expenditure at a percentage of 10 income health expenditure ratio. Between peoples with catastrophic direct healthcare expenditures, 100 million were hard-up and over 90% of them had occurred in LMICs. The sum of out-of-pocket expenditure was increased through time in Ethiopia and still one of the barriers to accessing healthcare in the country (2).

Globally, different forms of community-based health insurance applying the principle of risk sharing were organized to provide the financial risk protection, especially for people in the poor category to ensure that no one is left behind with regard to access of healthcare services (1). Many low-and middle-income countries including Ethiopia are faced with the challenge of rising sufficient funds to finance health service in equitable way. Many of these countries are dominated by direct out-of-pocket payments for healthcare financing (3). Out-of-pocket payments for healthcare direct to decreased use of health services and catastrophic health spending. Many households need sufficient financial security and face financial catastrophic (8).

To decrease out-of-pocket payments and get better access to healthcare services most developing countries has introduced community-based health insurance (CBHI) schemes particularly for those in rural community or who work in the informal sector (16).

Current literature indicates the success in the CBHI scheme even in low and middle-income countries. However; low adhesion rate, limited resource mobilization, and poor sustainability have been the challenges to an effective implementation of the CBHI scheme in some sub-Saharan African countries (1). While low renewal rates come into sight to be the norm, an exception is the case of CBHI scheme in Ethiopia which reports a dropout rate of only 18% (17).

Studies in the nation state are limited in identifying demographic and socio-economic determinants of both CBHI members and dropouts. Besides, there is no sufficient evidence in the country that showed the root causes of members' dropout from CBHI schemes. Studies include: CBHI impact on economic welfare in Ethiopia (17) and Socio-cultural determinants of CBHI in Kilite Awulalo District of Tigray, Ethiopia (18) and the impact of community-based health insurance in health service utilization (19).

According to Gumbichu Woreda Health Office report in the study area and based on the scheme database in 2018, 10917 household heads members of community-based health insurance were identified. During August 2018, from the total of 10917 household head's (9377 active members and 1540 were dropouts) from this dropout from community-based health insurance in study area were account 14.11% (20).

Therefore, to resolve the risk to impoverishment, in dropout from CBHI to successfully implement the program in the Woreda, other nearest Woreda and to contribute to achieve the stated goals of HSTP, the evidence on which the program officials base their decision is thin, more over magnitude of the dropout rate from community-based health insurance utilization and associated factors that compose households to dropout from program are unknown that makes sustainability and success of the program in question, thus this study was intended to finding out the dropout rate from CBHI utilization and associated factors among informal workers in Gimbichu Woreda. It is being piloted Woreda, but dropout from CBHI of the scheme has not yet studied. Thus, this study is intended to finding out to assess the dropout rate and associated factors from Community-based health insurance (CBHI) among informal workers in Gumbichu Woreda, East Shoa Zone, Oromia Region.

1.4. Significance of the Study

The significance of this study was to identify community-based health insurance dropout rate and associated factors among informal workers in Gumbichu Woreda.

The result of the study will be communicated to Gumbichu Woreda Administration, Gumbichu Woreda CBHI Scheme and Oromia Health Bureau to take informed decision on challenges that were Dropout rate of the community-based health insurance. In addition, the District CBHI Scheme and Gumbichu Woreda Health Office will use the findings of the study to maintain the existing members, to mobilize new membership and to enable dropped out members to re-enroll to the scheme. In addition, the research will help to the academic community to undertake studies based on the research findings. The study contributes evidence that will serve as input that might help health workers and policy makers on CBHI. In addition, it helps as baseline for other researchers who want to study further on the issue district.

2. LITERATURE REVIEW

2.1 Theoretical Aspects Community Based Health Insurance (CBHI)

Community-based Health Insurance (CBHI) is a general term for voluntary health insurance schemes organized at community level, that are alternatively known as mutual health organizations (or *mutuelles de santé* in French) or micro-insurance schemes. They all share the following characteristics: being run on a not for profit basis, targeting informal sector and applying the basic principles of risk-sharing and members' participation in management (21). In spite of these marvelous characteristics, community-based health insurance (CBHI) could not be well expanded and did not bring significant changes due to the fact that the membership enrollment is still at lower level (8, 9).

The sustainability of community-based health insurance (CBHI) scheme depends on the amount of member the scheme have, the risk profile of the enrolled members, contract on providers, scheme management and level of community participation but lower income countries face challenges to sustain their community-based health insurance (CBHI) schemes due to the schemes serve small proportion of the eligible population with limited financial pool (23). Low enrollment rate reduces the opportunity of cross-subsidization, affect financial sustainability, endanger scheme sustainability and reduce the power to negotiate from health service providers on quality of care. This situation back hinders the enrollment of communities in community-based health insurance (CBHI) schemes (13).

In Africa have 900 million community-based health insurance (CBHI) membership eligible population but only 2 million have enrolled that is 0.2% of the eligible population. The study conducted in 580 community-based health insurance (CBHI) schemes show from which 95% have less than 1000 member only cover 10% of the population. The study carried in sub-Saharan countries also shows except Ghana achieving 34% and Rwanda limited the enrollment rate on 10%. In addition to low membership ratio, the scheme also challenged by fluctuation of membership status (7, 9, 25, 26).

Despite the importance of initial uptake of CBHI, scheme sustainability required membership renewal (26). In spite of low renewal rates in community-based health insurances in low and middle-income countries, few studies have been examined the determinants factors of membership renewal in CBHI schemes.

Studies on renewing membership in three community-based health insurance schemes in India revealed that greater understanding of the scheme has a positive association to remain in the scheme than socio-economic status (16). As the best of our knowledge, there is a single study in Ethiopia that showed that socio-economic condition, a greater perceptive of health insurance and practice with and knowledge of CBHI schemes are linked with inferior dropout in pilot Ethiopia's CBHI (17).

Active participation of members found to be positively correlated with to remain in the scheme, however, perception of poor quality of care negatively associated to remain in the scheme in Ethiopia, Senegal, and Tanzania (17, 4, 23). Whereas, financial factors do not seem to affect dropout (28, 29). Moreover, adverse selection in terms of poor health status was identified as one major factor of membership renewal and non-affordability of premium, limited benefits of the scheme and poor quality of health services induce dropout from insurance system in Ghana (29).

In addition, other studies conducted in India and Ethiopia indicated that majority of the health services are made through out-of-pocket (OOP) payment. In India, 70 percent of total health spending is borne by private sources, 86 percent of which is through OOP spending (16). In Ethiopia the healthcare system is also heavily relied on external aid. According to Ethiopia's seventh national health accounts, 2016/17 "the country overall health sector financing is relied on external donors (35%), households out of pocket Expenditure for health is also high (32 %), and the government share is only 31% of the total health expenditure and 2% goes to private insurance schemes" (14).

In summary, several studies have been conducted to assess determinants of CBHI uptake, the effect of CBHI on the utilization of healthcare services, and the determinant of dropout from CBHI. Findings reveal that mixed factors influence insurance uptake, its effect on healthcare utilization, and renewal of membership. However, studies in East Africa including Ethiopia are limited. Therefore, country specific analysis is essential for policy makers and can contribute to the limited empirical evidence in the region.

2.2. Factors associated with dropout of utilization of CBHI

The study conducted in different countries and region shows CBHI dropout affected by many factors with different significance and measurement (17). An appraisal of the literature suggests that there are four wide sets of factors affecting dropout rate of CBHI enrollment. These are system affordability, the low quality of care that may be accessed throughout the system, the health status of individuals and information failures, which include poor understanding of insurance in general and inadequate information on how to use the insurance scheme (17).

Articles from Ethiopia indicate real renewal rates in April 2013 turned out to be 82%, and, enrollment stood at 48%. Households with higher utilization levels are less likely to dropout but the effects are not statistically important. Household heads with primary education and even those with informal education are less likely to depart the system. Overall, it seems that the size of households are able to afford the system (17).

Other studies conducted in LMIC countries of Africa and far-east regarding factors determines renewal/dropout from CBHI scheme's identifies the subsequent factors, among these single is a quantitative study of a CBHI scheme in Burkina Faso which had been operational for three years and had a dropout rate of 30.9 to 45.7% (31). The study focuses completely on demographic, economic and health associated indicators and finds that female household head, increased age, lower education, fewer illness episodes, fewer children or elderly in a household, poor healthcare quality, less seeking care, higher household spending and shorter distance to the contracted health facility were linked with increased dropout. The additional document is a qualitative study from Guinea-Conakry (1), where CBHI population coverage fell from 8% of the target population to about 6% in the following year. The main reasons for non-enrolment and dropout were poor quality of care and reported incapability to pay the premium. Other article from Senegal stated that Quality of health services was known as the most significant determinant of dropout (31).

2.2.1 Socio-demographic factors

Socio-demographic characteristics affect dropout of CBH. Series of studies conducted in Burkina Faso showed that factors resulting in high-dropout rates are similar to those resulting in low enrollment; female household head, higher age or lower education of a household head, lower range of number of illness episodes in the past three months, fewer children or elderly in a household, poor perceived healthcare quality, less seeking care in the Past month positively effected on dropout and Quality of care is an important factor influencing enrollment and decision to drop out of CBHI (30).

2.2.2 Health and health related factors

Health related factors highly affect dropout of CBHI. Member households were twice as likely to have had an illness, accident or injury, and nearly twice as likely to have a disability, than dropout members. They were more than twice as likely to be situated closer to a health service provider than dropout members (31). More recently, a study in Senegal showed that the more active the mode of participation, episodes of illness the lower was its dropout and, on the other hand, people who dropped out were less inclined to actively participate, to trust management or to endorse the principles of risk-sharing (9). While a negative perception of quality of care increased scheme dropout. Perception of poor quality of health services is known as the most significant determinant of dropout (24).

2.2.3 Quality of health service related factors

Quality of healthcare service is one of determinant for dropout of CBHI. Members were three times more likely to account that healthcare admission is a benefit of membership than dropout members. In addition to had a much higher likelihood of reporting that the quality of health service providers was acceptable. Three quarters of members felt that the quality of care of all the providers contracted by the scheme was satisfactory, compared to half of dropout members and rates of active participation ranged between 8% and 48% for dropout members and 20% and 65% for members (11). Members being more likely than dropout members to have heard of the scheme from a family member or friend compared to another basis (11).

The qualitative study revealed that those living far from the facility felt that they faced higher non medical expenses when seeking care (due both to the cost of transport and to the opportunity cost of seeking care) and had therefore come to value community-based health insurance (CBHI) as a tool to relieve them at least of part of the financial burden they faced when sick (32). Since the study identified that people living closer to the facility was also more likely to dropout.

2.2.4 Awareness of CBHI related factors

The other studies also shows high dropout rate has been caused from factors of lack of adequate customer information, lack of understanding of insurance concept and benefit package, lack of trust in insurer, perceived quality of health service, un affordability of contribution, time and frequency of payment, level of education of household, gender of household, religion and exemption service (9, 25, 33, 34). Differently, a senior household spending and a shorter distance to the contracted health facility increased the dropout. The household heads in the dropout group had a significantly lower education than in the non-dropout group. The households in the dropout group also had a significantly higher household size, were more likely to live in the town (10).

The Ethiopian healthcare system is characterized by high out-of-pocket expenditure, increased healthcare needs, inability to mobilize more resources for health among rural dwellers, and inability to fully recover costs of care incurred by beneficiaries. Thus, the country introduced a pilot community-based health insurance (CBHI) scheme in 2011. CBHI uptake was so remarkable in the country in the piloting year which was raised to 41% in one year. However, in the next year 18% of the households which enrolled in the first year withdrawing their payment. Enrollment determinant factors are broadly classified as household characteristics, scheme related factors, social capital, institutional factors, and supply side factors (17).

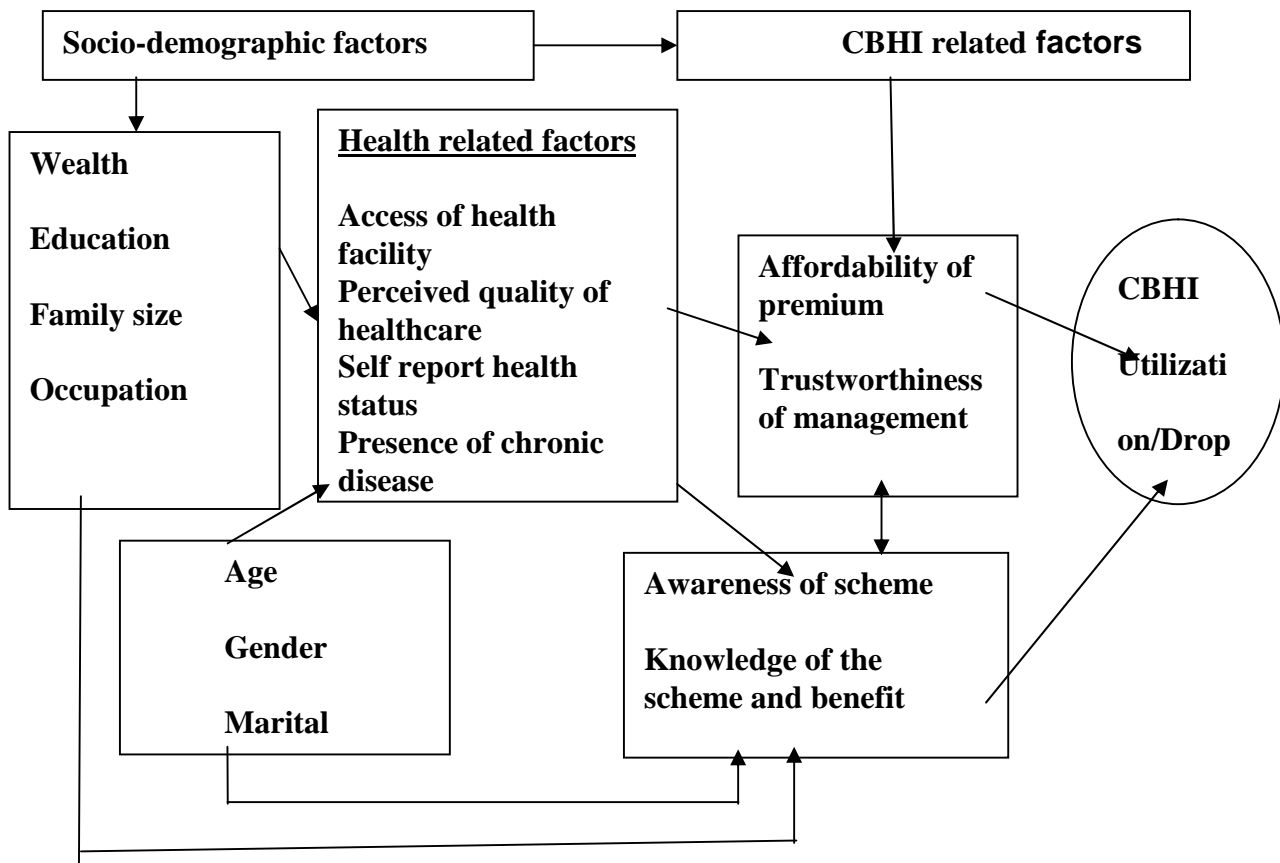


Figure 1: Conceptual framework on CBHI Utilization/Dropout

Theoretical framework on community-based health insurance utilization/Dropout and linked factors among informal workers in Gumbichu Woreda and modified according to the study objectives 2019, adapted from research article (35).

Socio-economic condition, a better sympathetic of health insurance and know-how with and knowledge of the CBHI scheme are linked with lower dropout rates. As there are concerns regarding the quality of care and the treatment meted out to the insured by providers, the overall image is that income from the scheme are devastatingly optimistic (10).

3. OBJECTIVES

3.1 General Objective: To assess the dropout rate and associated factors from Community-based health insurance (CBHI) among informal workers in Gumbichu Woreda, East Shoa Zone, Oromia Region, 2020.

3.2 Specific Objectives:

1. To determine socio-demographic and economic characteristics on dropout rate from community-based health insurance (CBHI) scheme.
2. To determine magnitude of dropout rate from community-based health insurance utilization among informal workers in Gumbichu Woreda; and
3. To identify factors associated with dropout rate from community-based health insurance utilization among informal workers in Gumbichu Woreda.

3.3 Research Questions

The researcher has framed the following research questions to meet the goal of the study:

1. What is the Socio-demographic and economic characteristics of respondents that determine dropout rate from community-based health insurance?
2. What is the magnitude of dropout rate from CBHI among informal sectors in Gumbichu Woreda?
3. What are the associated factors that determine dropout rate from community-based health insurance?

4. METHODS AND MATERIALS

4.1 Study area

The study was conducted in Gumbichu Woreda which is one of piloted Woreda among 13 first piloted Woreda, located in the East Shoa Zone of Oromia Regional State. It is located concerning 68 KM away from Addis Ababa. According to Gumbichu Woreda Health Office report 2020 the total population of this Woreda was 124,581 of whom 63,536 were men and 61,045 were women. Gumbichu Woreda is one of the Woreda among the four District selected from East Shoa Zone to the pilot of CBHI since 2011. The Woreda has 33-kebele and its home for 22,000 households. The Woreda has 33 health posts, 5 health centers, and 7 private clinics.

4.2 Study period

The data collection was conducted during the period Mar 2020 to Apr 2020.

4.3 Study design

Community-based cross-sectional study design was employed using interviewer administered questioners and supplemented by qualitative in-depth interviews. Based on the objectives of the study a mix of quantitative and qualitative research methods was designed.

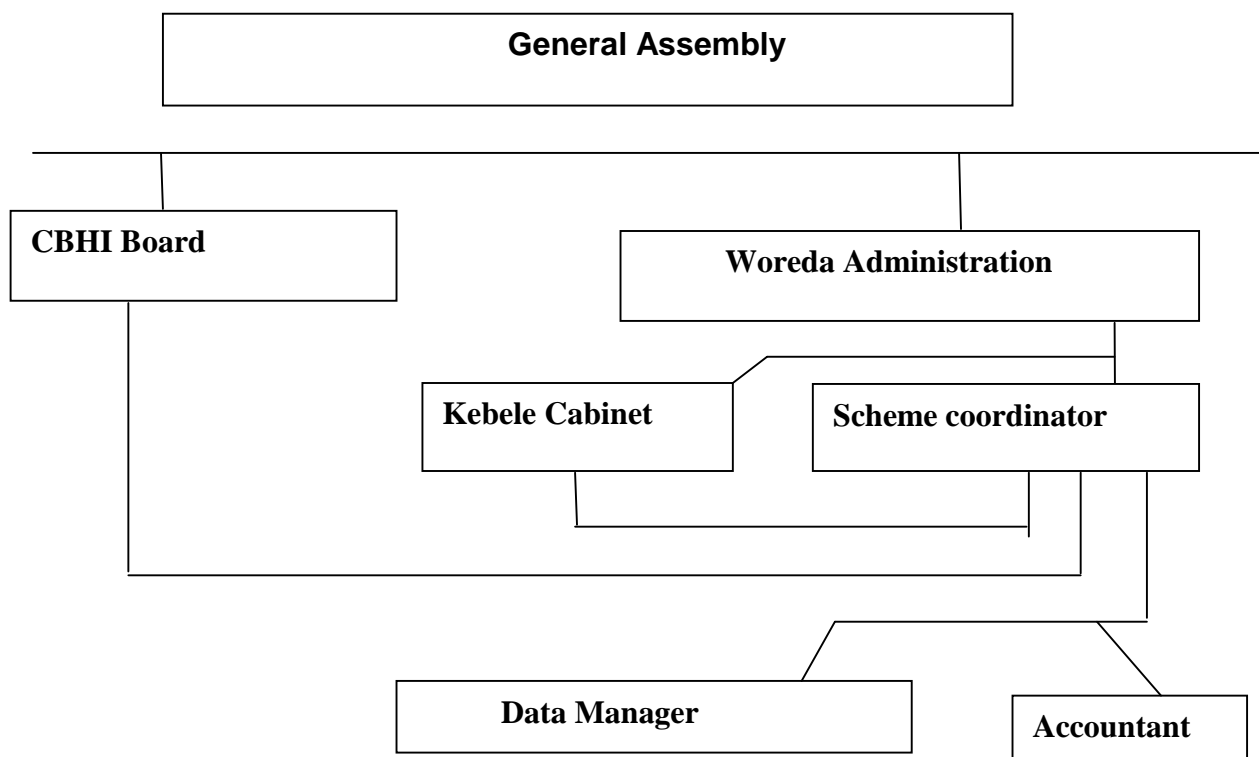


Figure 2: Organ gram of Gumbichu Woreda CBHI Scheme

4.4 Source of study population

All households who were members of community-based health insurance (CBHI) and now dropped out from community-based health insurance (CBHI) after one year of scheme function started and who renewed their subscription for at least one year in Gumbichu Woreda.

4.5 Study population

Households who are dropout from community-based health insurance (CBHI) scheme and renewed their subscription for one year in Gumbichu Woreda. Based on the scheme database in 2018, 10917 household heads were identified. According to the regional CBHI by law every household should renew membership annually through paying 245 ETB per year; if not membership status will be considered as dropout. During August, 2018, from the total of 10917 household head's (9377 active members and 1540 were dropouts) from this 1540 household heads were a study target. This figure was the basis for estimating the required sample size.

4.6 Sample Size Determination

Objective 1; The sample size for CBHI coverage was calculated by using single population proportion formula. Study conducted in piloted region of Ethiopia showed that in Oromia magnitude of CBHI coverage was 44% (36).

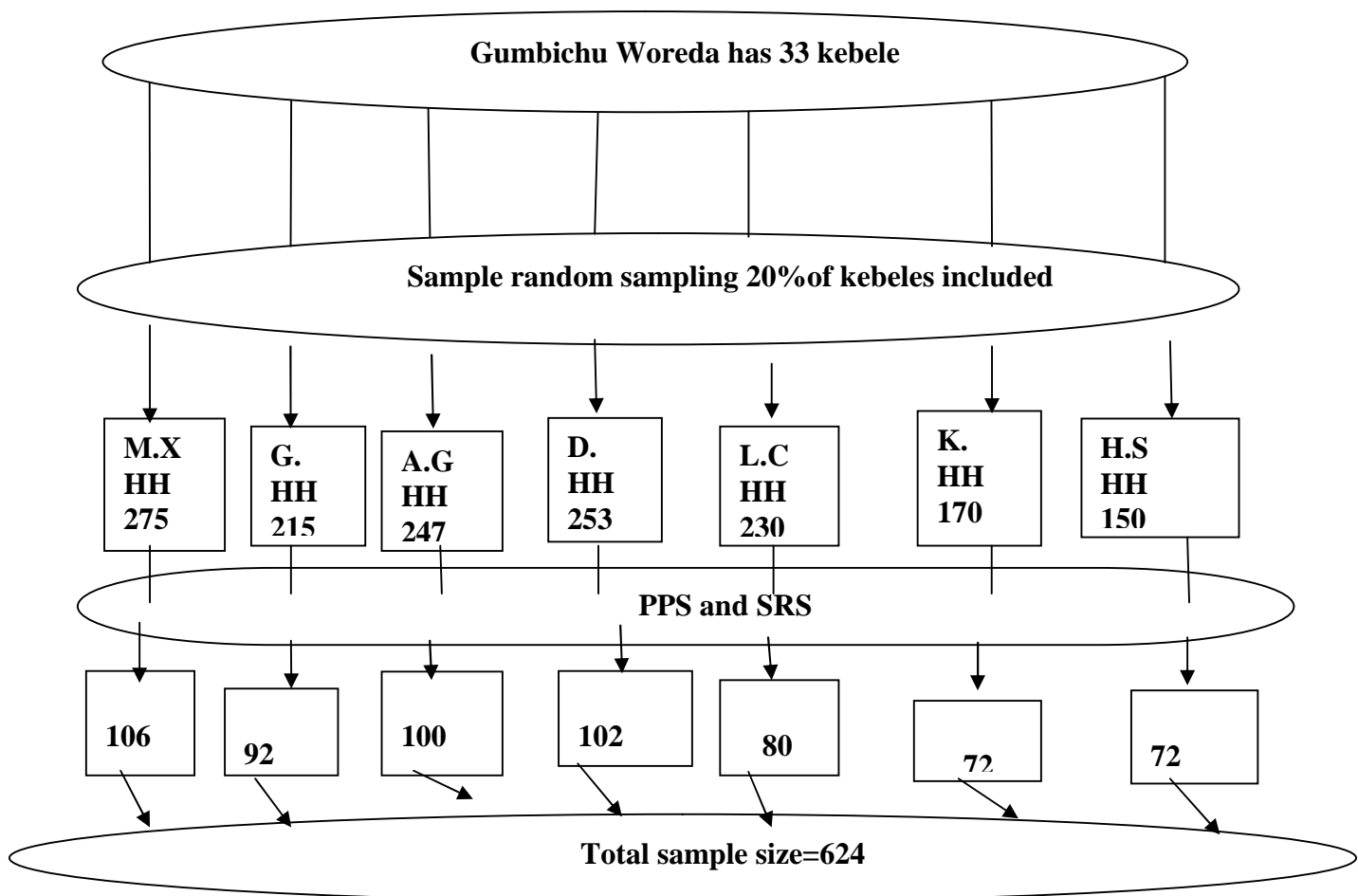
$$n = \frac{[Z_{\alpha/2}]^2 p (q)}{D^2} = \frac{(1.96)^2(0.44) (0.56)}{(0.05)^2} = 378$$

Where n = the desired sample size, p= Assumed CBHI coverage in Oromia, Critical value at 95% confidence level of certainty (1.96), D= margin of error between the sample and population=5%.
By taking 10% non-response rate and design effect 1.5, the total sample size is $(378+38)*1.5 = 624$.

Objective 2: Sample size was determined based on factors associated with CBHI Dropout; Sample size is calculated using statistical Epi Info 7 Stat Calculator computer software program by double population proportion formula at 95% CI with Z = 1.96 and 80% power, 10% nonresponsive rate and 1.5 design effect.

4.7 Sampling technique

In this study multistage sampling method was applied, the Woreda consists of 33 kebeles, for generalizability purpose 20% of the kebeles included (13). First, kebeles from 33 kebeles was selected by simple random sampling method. Then the calculated sample size was proportionally allocated to each selected kebeles based on its number of household's dropout from CBHI. Lastly, lists of the households having household heads with informal work was obtained from Woreda Administration Office (village register) and after getting the lists households (heads with informal work) from each selected kebeles, sample was selected by simple random sampling to get the required sample size.



Key: M.G -Megikso Gora, G. -Girmii, A.G –Adadi Gole, D –Dirre, L.C –Lemlem Cefe, H.S – Habru Seftu , K – Kersa ,SRS- simple random sampling.

Figure 3: Schematic presentation of the sampling method to assess dropout rate and associated factors from community-based health insurance among informal worker in Gumbichu Woreda, 2020.

4.8 Data collection procedures (Instrument, personnel, data quality control)

Data collection instruments

The data collection questionnaire was adapted from Ethiopian Economic Association (EEA) and +EDHS (30, 31). It contained three parts, the first part contains socio-demographic characteristics, the second part questions related to CBHI utilization and the third part contains health and health related variables.

4.9 Data collection methods

The data was collected by interviewer administered pretested structured questionnaire. The questionnaire was at first prepared in English and then translated in to Afan Oromo (local language of the study area) and then rear into English by those capable in the language and was checked for reliability. The data collection was conducted by kebele managers and teachers. A teacher was assigned as supervisors. Preparation was given for data collectors and supervisors for two days on how to approach the study groups and fill the questionnaires. Data collection was carried out by house to house visit and facility investigation.

4.10 Study variable

Dependent variable

Dropout from Community-based health insurance utilization

Independent variables

Socio-demographic factors: Age, household family size, education, occupation, marital status, annual income.

Health related factors: household members self-reported health status, accessibility of health care facility, perceived quality of health care, presence of chronic disease in household members.

CBHI related factors: awareness of the CBHI, knowledge on CBHI, affordability of premium and trustworthiness in scheme management.

4.11 Operational definitions

Dropout: house hold who don't renewed their membership after a year (HHs who discontinue their membership)

Good knowledge: Study groups that scored the mean and above on CBHI knowledge questions.

Poor knowledge: Study groups that scored below the mean on CBHI knowledge questions.

Informal workers: households which live on agriculture, trade, and private micro businesses in rural and urban areas (13).

Benefit package: expected returns from the insurance

Member: households join to CBHI by paying the pre-set contribution and receive the scheme identification card Household: head of the family.

4.12 Data Analysis procedures

The collected data were cleaned, coded and the completeness and consistency of the data was checked then double entered into Epi data late Version 3.2 and data was exported to SPSS version 22.0 for data processing and analysis. Two step (bivariable and multivariable) logistic regressions analysis were done for objective one i.e to determine effects of Socio-demographic and economic characteristics of respondents on dropout respectively while for the second objective descriptive analysis was used and third objective to determine effects of scheme related factor I used Pearson correlation analysis to see its linear associations of dependent variable dropout with scheme related variables; 95% confidence interval and p-value < 0.05 power 80%. The results were presented in the form of tables, figures, and text using frequencies and percentage to describe the study population in relation to relevant variables. The degree of significance and magnitude of bivariate association was assessed using binary logistic regression and its corresponding odds ratio and 95% confidence interval. All independent variables with p-value > 0.25 in bivariate analysis were subjected to fit a multivariable logistic model for dropout/renewed and identify the independent contribution of each variable for the out-come variable. Finally, variables identified as associated ($P < 0.05$) with dropout CBHI through multivariable logistic regressing analysis were reported as predictors of dropout CBHI.

4.13 Model

community based health insurance(CBHI) involves dichotomous decision renewal of their subscription or dropped out from community based health insurance (CBHI) This situation will result in the outcome variable (variable of interest) to be binary in nature. When the outcome variable is dichotomous, the possible binary regression model is the linear probability model (LPM) in which the binary response variable is regressed on the relevant explanatory variables by using the standard OLS methodology. But linear probability model (LPM) suffers from several estimation problems due to its restrictive fundamental assumption that the probability of something happening increases linearly with the level of the explanatory. This very restrictive assumption can be avoided if we use the logit and probit models (30). Logit models impose the condition that predicted values must be on the unit interval, and produce consistent covariance matrix estimates assuming the distributional assumptions are correct. On the other hand, linear regression models have the disadvantages that predicted values may be less than zero or greater than one, and that the OLS covariance matrix estimate is inconsistent (31). Therefore, this study will use logit model where the dependent variable is the log of the odds ratio, which is a linear function of the predictors. If the data are available at the individual or micro level, nonlinear-in-the-parameter estimating procedures (maximum Likelihood) can be employed to estimate the parameters of predictors.

The logit model can be as:

$$Y = \beta_1 + \beta_i x_i + u_i \dots \dots \dots 1$$

Where:

Y = is a dichotomous dependent variable (have value of 1 and 0)

β_1 = constant

β_i = parameter of X_i predictor

X_i = is i^{th} independent variable in the model

u_i = is the error term

More specifically for this study the above stated model can be written as follows to express CBHI dropped out from CBHI scheme.

$$\text{CBHI dropout} = \beta_1 + \beta_2\text{GHH}_i + \beta_3\text{AG}_i + \beta_4\text{ED} + \beta_5\text{MHH}_i + \beta_6\text{R}_i + \beta_7\text{FS}_i + \beta_8\text{OC}_i + \beta_9\text{YY}_i + \beta_{10}\text{I}_i + \beta_{11}\text{QHS}_i + \beta_{12}\text{DH}_i + \beta_{13}\text{BP}_i + \beta_{14}\text{TP}_i + \beta_{15}\text{CA}_i + u_i \dots\dots\dots 2$$

Where:

CBHI dropout = The outcome variable taking a value of 1 if members of CBHI dropped out from CBHI scheme and 0 other wise.

GHH = Gender of household heads

AG = Age of respondents

ED = Education level of respondents

MHH = Marital status of household heads

R = Religion of household heads

FS = family Size of household heads

OC = Occupation of household heads

YY = Year of enrollment CBHI

QHS = Quality of health service

I = Annual income of household heads

DH = Distance from health facility

BP = Benefit package

TP = Trust of the program

CA =Contribution amount

From the above stated model the probability of dropped out from CBHI scheme is given by the expression $p_i = 1/1+e^{-z_i}$ where $z_i = \beta_0 + \beta_1 x_i$ and the probability of renewal of their subscription is given as $1 - p_i = 1/1+e^{z_i}$. Hence, the log of the odds ratio is the natural log of the two probabilities i.e. $(p_i/1-p_i)$. However, the basic disadvantage of the logit model is the coefficients it is difficult to interpret the coefficients of the estimated model and we dependent our interpretation on the odds of occurrence of an event by estimating the odds ratios.

4.14 Data quality management

To attain data quality, the questioner was pre-tested, the data was checked for completeness, accuracy, and those find missing in addressing important variables like the outcome and other important variables was discarded. The data were stored in a secure place for confidentiality and in time when the data was need for a backup of the data.

4.15 Ethical considerations

The actual data collection was started after ethical clearance letter obtained from the Institutional Review Board of the College of Health Sciences at Addis Ababa University, and support letter was obtained from Oromia Regional Health Bureau and Gumbichu Woreda Health Office. Formal letters of cooperation were taken to each Kebele and verbal consent was obtained from individual participant by explaining the aim of the research. Participants were informed that participation are voluntary, they have full right to refuse from participation or withdraw from the study at any time they want, without losing any of their right not force to stay in study and individual confidentiality is secure.

4.16 Dissemination of results

The final study report is submitted to Gumbichu Woreda Health Office and Oromia Regional Health Bureau, Gumbichu Woreda Administrative Office and the thesis will also be submitted to Addis Ababa University College of Health Sciences, School of Public Health and as hard and soft copy.

5 RESULTS

In this chapter, the main result of the study based on the data obtained throughout household meeting and in detail discussion for CBHI scheme officers and kebele managers are offered, analyzed and interpreted. The data are presented and organized in a chronological order in line with the specific objectives acknowledged under the first chapter of the thesis.

5.1 Socio-demographic and economic characteristics of study population

Important data were collected for the study from the total of 584 respondents which is 93.6% from the planned 624. The mean age of the respondents was 46.5 years, ranging from 22-76 years with standard deviation of 12.83 years. Of the total head of household respondents, majority of the respondents were males 385 (65.9%). About 394 (67.5%) of households were in the age group 41-59 while 70 (12%) of them was 60 and above 60 years. In line with marital status of households majority of the respondents were married constituting 462 (79.1%). The dominant religion was Orthodox 433 (74.1%) followed by Muslim religion followers 87 (14.9%). And also the dominant ethnic group was Oromo, constituting 487 (83.4%).

Regarding to educational status of households 243 (41.6%) of the respondents were illiterate, 146 (25%) of the study participants were informal education, 132 (22.6%) of households were primary education and 63 (10.6%) of households were secondary education and above. Concerning to their occupation 408 (69.9%) of households were farmer, 129 (22.1%) of households were merchants, 47 (8%) of household were daily laborers. Annual income of the respondents was estimated to fall in the range of maximum 202,850 ETB and minimum of ETB 17,500. Secondly it was difficult to collect income data from farmers due to misconception related to tax imposition. Accordingly, the mean income of participant was 39,948.6 ETB and 65 (11.1%) earn less than 20,000 ETB, 422 (72.3%) earn between 21,000--49,000 ETB, 97 (16.6%) were earn above 50,000 and above annual income from crop harvest (Table 1).

Table 1: Socio-demographic and economic characteristics of study population

Independent Variable	Category	Dropout from CBHI		Total Frequency	Total Percent
		Dropout	Renew		
Sex	Male	314 (53.8%)	71 (12.1%)	385	65.9
	Female	122 (20.9%)	77 (13.2%)	199	34.1
Age	22-40	107 (18.3%)	13 (2.2%)	120	20.5
	41-59	271 (46.5%)	122 (21%)	393	67.5
	>60	57 (9.8%)	13 (2.2%)	70	12.0
Marital status	Single	42 (7.2%)	9 (1.5%)	51	8.7
	Married	350 (59.9%)	112 (19.2%)	462	79.1
	Divorce	22 (3.8%)	21 (3.6%)	43	7.4
	Windowed	22 (3.8%)	6 (1.0%)	28	4.8
Religion	Orthodox	338 (57.9%)	95 (16.3%)	433	74.1
	Muslim	62 (10.6%)	25 (4.3%)	87	14.9
	Protestant	26 (4.5%)	20 (3.4%)	46	7.0
	Others	10 (1.7%)	8 (1.4%)	18	3.1
Ethnicity	Oromo	366 (62.7%)	121 (20.6%)	487	83.4
	Amhara	70 (12%)	27 (4.6%)	97	16.6
Education	Illiterate	191 (32.7%)	52 (8.9%)	243	25.0
	Informal education	96 (16.4%)	50 (8.6%)	146	22.6
	primary education	104 (17.8%)	28 (4.8%)	132	10.8
	Secondary education	45 (7.7%)	18 (3.7%)	63	11.4
Annual Income	<20,000	55 (9.4%)	10 (1.7%)	65	11.1
	20,000-49,000	325 (55.7%)	97 (16.6%)	422	72.3
	>50,000	56 (9.6%)	41 (7%)	97	16.6
Family Size	<=5	128 (21.9%)	19 (3.3%)	147	25.2
	>=5	308 (52.7%)	129 (22.1%)	437	74.8
Occupation	Farmer	227 (46.6%)	136 (23.3%)	408	69.9
	Daily laborer	37 (6.3%)	10 (1.7%)	47	8.0
	Merchant	127 (21.7%)	2 (0.3%)	129	22.7
Year of enrollment	<3	95 (16.3%)	29 (5.9%)	124	22.2
	>3	341 (58.4%)	119 (20.4%)	460	78.8

5.2 Magnitude of dropout rate from community-based health insurance among informal workers in Gumbichu Woreda, 2020 (n = 584)

The study was undertaken on dropout from community-based health insurance in Gumbichu Woreda by using community-based cross-sectional method supported by both quantitative and qualitative methods to assess magnitude of dropout from community-based health insurance in study area. Over all out of 584 participant 74.7% dropped from community-based health insurance scheme while 25.3% were renewed their community-based health insurance membership in 2019/2020 (Figure 4).

From the total study participants 314 (53.8%) of households were male and 122 (20.9%) of households were female that were dropped from CBHI scheme. Additionally, 107 (18.3%) of households were in the age group of 22-40 years and 272 (46.6%) of households were in the age group of 41-59 years and 57 (9.8%) of households were above 60 years were dropped from CBHI scheme.

The main aim of community-based health insurance is to help members to meet costs of treatment when the family member fell ill, and this was important because of the uncertainty associated with illnesses and the high costs of treatment. Household head who is members of community-based health insurance (CBHI) whose family members are above 18 years old did not renewed community-based health insurance (CBHI) cards because the program excludes their children of this age group to use the health care service from the contracted health facility (In depth interviewee kebeles manager man age 34).

Concerning to their marital status of households 350 (59.9%) of households were married, 42 (7.2%) of households were single, 22 (3.8%) of households were widowed and 22 (3.8%) of households were divorced from the dropout households. From study participants concerning to their family size 128 (21.9%) of households have five and less than five family members and 308 (52.7%) of households have more than five family size from dropout household members (Table 1).

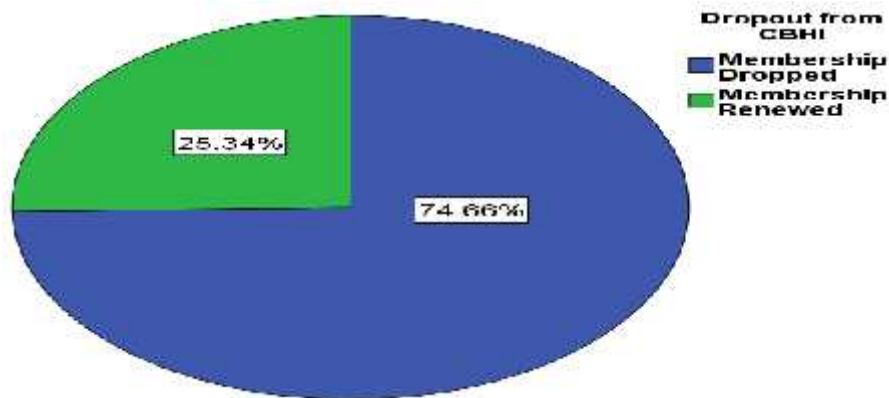


Figure 4: Magnitude of Dropout rate from Community-based health insurance among informal worker in Gumbichu Woreda, 2020 (n =584).

5.3 Factors Associated with Dropout Rate From Community-Based Health Insurance Utilization Among Informal Workers In Gumbichu Woreda, 2020.

5.3.1 Scheme related characteristics of households and Single most important reasons for not renewing CBHI membership

Households who did not renew their CBHI membership were asked to state their reasons why they dropout their CBHI membership. 436 (74.7%) study participants were used health service, 148 (25.3%) study participant were not used health service. Those participants visit health facility were rate service quality based on their own perception, accordingly, 230 (39.4%) rate poor, and 170 (29.1%) of them rate as fair, while the rest rate good and excellent respectively. Out of 436 study participants 260 (60.8%) of households said that we dropout because low level of satisfaction of the scheme members on the available services from contracted providers. Similarly, perceived availability of equipment was rated the same way by respondents as 91 (15.6%), 83 (14.2%), 262 (44.9%) good, fair and poor respectively.

It is also found that availability of medical equipment could also influence healthcare seeking behavior and satisfaction with services offered from health facilities. The contracted health center has limited health care services most of the time have no drug in the pharmacy and un-functional laboratory instruments; so 12 (2.8%) members are dropped from CBHI membership due to lack of availability of medical equipments.

16 (3.7%) of study participants said that we dropout because the contracted health facility is far away from our home. CBHI members whose home is far from the contracted health facility incurred for additional cost of transportation. 29 (6.8%) of study participants were dropped from community-based health insurance (CBHI) because of lack of detail awareness about community-based health insurance work. However, one of the key informants (health professional) stated households who have low awareness on utilization of CBHI dropped out from the scheme.

Members did not have better consciousness about CBHI scheme and their claim to use health care services. CBHI scheme office did not give adequate awareness how, when and where to use services. Members only claim their right without understanding their responsibility. CBHI officials only concerned on increasing members without creating awareness; this brought problem to provide services (male, age- 26 and 3 years work experiences).

46 (15.2%) of study participants were because of illness or injury is not occurs frequently in-house members. While the rest 65 (10.7%) were not renew their membership because of benefit package covered by community-based health insurance scheme is not meet our needs.

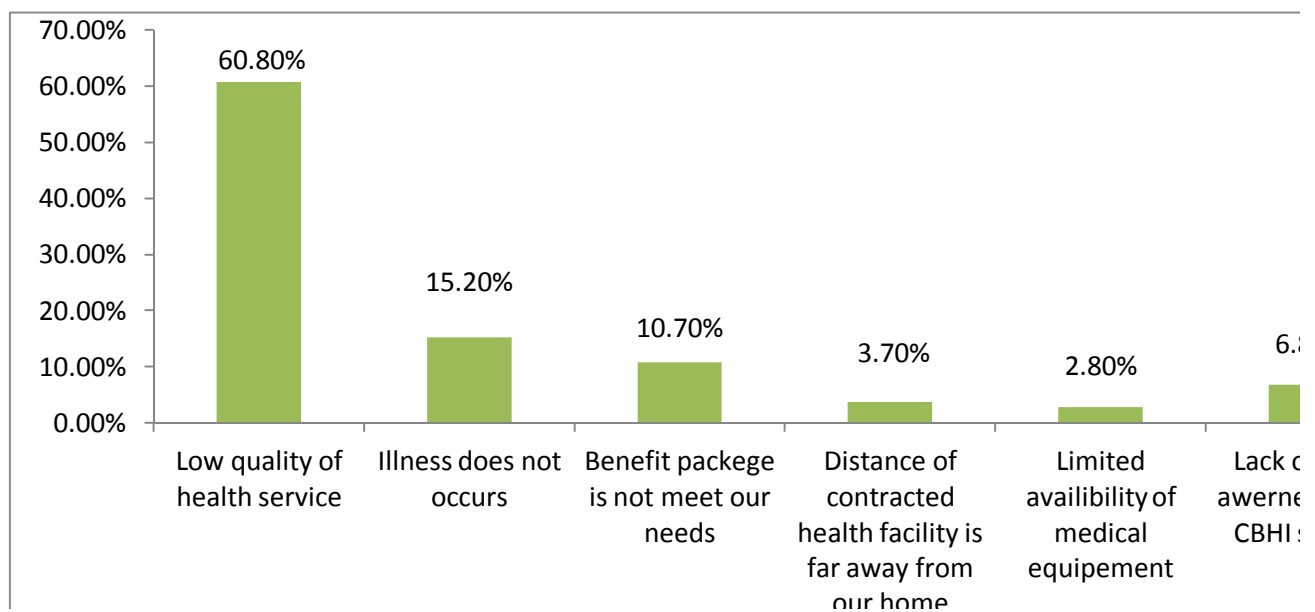


Figure 5: Scheme related and single reason not to renewed CBHI membership

5.3.2 Single most important reasons for renewing CBHI membership

Concerning reasons why households renewed their membership for this year out of 148 study participants 91 (61.48%) of them were due illness or injury occurs frequently in household members, 10 (6.75%) of households said to get health service from contracted health facility, 13 (8.38%) of study participants said to support others health expenditure, 21 (13.55%) of them said due to pressure /advocacy From CBHI/government Office, 9 (5.8%) of them said that due to Premium payment is cheaper than out of pocket Payments to get health care service and 4 (1.95%) is due to other factors.

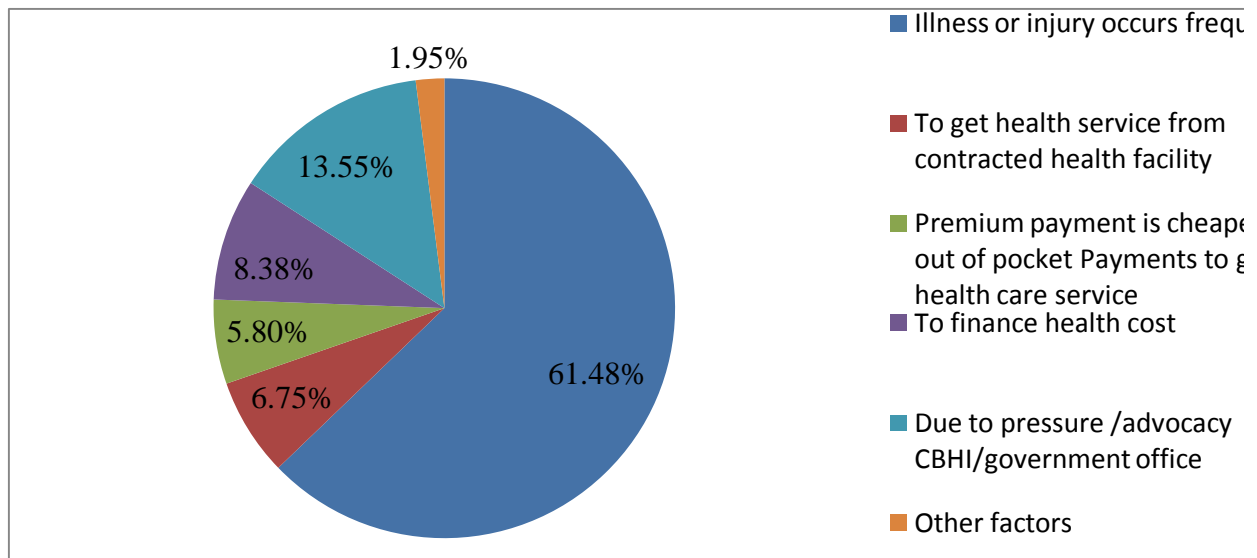


Figure 6 : Single reason for renewing membership

5.4 Bivariate Analysis

The result of bivariate analysis of socio-demographic variables in binary logistic regression showed that sex, age, educational status, wealth status of respondents, types of occupations, family size and years of enrollment were found to be significantly associated with dropout of CBHI. The bivariable logistic regression depicts male household head respondents had about 0.33 times more likely dropout from CBHI than female household head respondents, COR= 0.33; 95% CI (0.206, 0.540). Household heads age group 41-59 [COR:2.419 95% CI:[1.129,5.175)], farmers [COR: 35.497 95% CI:[8.400,149.997)] daily laborer [COR: 15.863 95% CI:[3.146,79.996)], and those who are illiterate [COR:0.46 95% CI:[0.215,0.987)] and having informal education [COR: 2.391 95% CI:[1,001,5.710)], Household heads having small number of family size [COR:0.409 95% CI:[0.221,0.759)], low income (<20,000EBR) [COR: 0.291 95% CI:[0.114,0.714)] and Household heads whose year of enrollment is between 1-3 years [COR: 2.275 95% CI:[1.275, 3.855)] were associated with dropout of CBHI utilization respectively (Table 2).

Table 2: Factors linked with dropout rate from community-based health insurance with informal workers in Gumbichu Woreda, logistic regression analysis, 2020 (n = 584).

Independent Variable	Category	Dropout from CBHI		COR (95%CI)	AOR(95%CI)	P-Value
		Dropout	Renew			
Sex	Male	314 (53.8%)	71 (12.1%)	0.33 (0.206, 0.540) ** R	2.996 (1.852, 4.846) ** R	0.00
	Female	122 (20.9%)	77 (13.2%)			R
Age	22-40	107 (18.3%)	13 (2.2%)	1.003 (0.350,2.876)	0.997 (0.348,2.858)	0.924
	41-59	107 (18.3%)	13 (2.2%)	2.419 (1.129,5.175)**	0.402 (0.186,0.866)**	0.230
	>60	57 (9.8%)	13 (2.2%)	R	R	R
Education	Illiterate	191 (32.7%)	52 (8.9%)	0.46 (0.215,0.987)**	2.174 (0.906,4.422) **	0.046
	Informal education	96 (16.4%)	50 (8.6%)	2.391 (1,001,5.710)**	0.418 (0.175,0.999)**	0.050
	primary education	104 (17.8%)	28 (4.8%)	0.519 (0.224,1.205)	1.926 (0.830,4.471)	0.127
	Secondary education	45 (7.7%)	18 (3.7%)	R	R	R
Annual Income	<20,000	55 (9.4%)	10 (1.7%)	0.291 (0.114,0.714)**	3.440 (1.344,8.805)**	0.010
	20,000-49,000	325 (55.7%)	97 (16.6%)	0.808 (0.452,1.444)	1.238 (0.693,2.213)**	0.471
	>50,000	56 (9.6%)	41 (7%)	R	R	R
Family Size	<=5	128 (21.9%)	19 (3.3%)	0.409 (0.221,0.759)**	2.110 (1.090,4.084)**	0.027
	>=5	308 (52.7%)	129 (22.1%)	R	R	R
Occupation	Farmer	227 (46.6%)	136 (23.3%)	35.497 (8.400,149.997)**	0.291 (0.114,0.744)**	0.000
	Daily laborer	37 (6.3%)	10 (1.7%)	15.863 (3.146, 79.996) **	0.74 (0.015, 0.378) **	0.000
	Merchant	127 (21.7%)	2 (0.3%)	R	R	R
Year of enrollment	<3	95 (16.3%)	29 (5.9%)	2.275 (1.275, 3.855)**	0.464 (0.271,0.794)**	0.005
	>3	341 (58.4%)	119 (20.4%)	R	R	R

5.5 Multivariate analysis

In the multivariate logistic regression analysis associated variables was performed to identify independent predictors' for dropout of CBHI. Sex, Age group, Educational status of respondents, Annual income, types of occupations, Family size and years of enrollment were factors associated with dropout of CBHI. Sex of respondents was found to be an associated factor of dropout CBHI. Household heads who are male were 2.996 times more likely to dropout from CBHI than those who are female household heads, AOR = 2.996, 95% CI (1.852, 4.846).

Dropout of households heads whose age group is 41-59 were 0.402 times more likely to dropout from CBHI than households heads whose age is between 24-40 and above 60 AOR = 0.402; 95% CI (0.186,0.866). Households heads with wealth status of low income (<20,000EBR) were 3.44 times more likely to drop out from the CBHI than those medium and high wealth statuses, AOR = 3.44; 95% CI (1.344, 8.805).

Education of respondents was found to be an associated factor of dropout CBHI. Households who are illiterate were 2.174 times more likely to drop out of CBHI than those who were primary and secondary education and above, AOR = 2.174, 95% CI (0.906, 4.422).

Occupation of respondents was found to be an associated factor of dropout CBHI. Household heads whose occupation is farmers and daily laborer were 0.291 and 0.74 times more likely to drop out their membership than those who are merchant, AOR = 0.291, 95% CI (0.114, 0.744) and AOR = 0.74, 95% CI (0.015, 0.378). Those households who were enrolled for 1-3 years were 0.464 times more likely to drop out their CBHI membership than those members enrolled for 3-7 years, AOR = 0.464; 95% CI (0.271,0.794) (Table 2).

5.6 Co relational Statistical Analysis of dropout of CBHI with scheme and facility related characteristics

Pearson correlation tests were used to determine the relationship between list of variables under scheme and facility related and type of study participants (CBHI dropouts). A Pearson's correlation expresses the strength of linkage or co-occurrence between two variables in a single value between -1 and +1. A positive r value expresses a positive relationship between the two variables while a negative r value indicates a negative relationship.

Pearson's correlation coefficient (r) used Cohen's standard to evaluate the strength of the relationships. Accordingly, correlation coefficients between 0.10 and 0.29 represent a small effect size, correlation coefficients between 0.30 and 0.49 represent a moderate effect size, and correlation coefficients above 0.50 indicate a large effect size at the p value 0.05 or 95% confidence interval (37).

To examine relationship between dropout of CBHI, scheme and facility related characteristics such as quality of healthcare service, distance from health facility, Detail awareness about CBHI scheme work, CBHI scheme management trustworthy and Scope of illness covered by the scheme Pearson correlation was employed. As a consequence, the test figures showed that there is statistically important slightly weak positive relationship between dropout of CBHI and those variables.

Low quality of healthcare service is positively correlated with members to dropout from their membership ($r=0.297$ at $p=0.00$). Similarly, to dropout from CBHI, households consider distance of health institution from their home. As distance of health institution far from home increases, people opened for additional transportation and other health related costs like bedroom and food, then increase their interest of dropout from the program. There is slightly weak positive relationship between distance and dropout from CBHI ($r=0.117$ at $p=0.005$). Additionally, for Detail awareness about CBHI scheme work is important factor either to renew or dropout from CBHI. There is also slightly weak positive relationship between dropout of CBHI and Detail awareness about CBHI scheme work ($r=0.135$ at $p=0.001$).

Limited scope of illness covered by CBHI scheme is one challenge in CBHI because members will pay other additional payment for treatments. Limited scope of illness covered by the scheme is positively correlated with members to dropout from their membership ($r=0.272$ at $p=0.00$) and There is also slightly weak positive relationship between dropout of CBHI and scheme management trustworthy ($r = 0.305$, $p = 0.000$).

Table 3: Correlation Statistical Analysis of dropout of CBHI with Scheme and facility related characteristics.

Scheme and facility related characteristics Reasons to dropout	Dropout of CBHI	
	Test statistics Pearson correlation	Significances at p 0.05
Low quality of health service at health facility	r = 0.297	p = 0.000
Distance to access health service	r = 0.117	p = 0.005
Detail awareness about CHHI scheme work	r = 0.135	p =0.001
Scope of illness covered by the scheme is limited	r = 0.272	p = 0.000

6. DISCUSSION

6.1 Demographic Variables and CBHI Dropout

The ultimate goal of this study was to identify factors associated with dropout rate from community-based health insurance utilization among informal workers in Gumbichu Woreda. Series of studies conducted in Burkina Faso shows that factors resulting in high dropout rate are similar to those resulting in low enrollment (38). Sex of respondents was found to be an associated factor of either to dropout of CBHI. Households who are male 2.996 times more likely to dropout from CBHI than those who are female, AOR = 2.996, 95% CI (1.852, 4.846). The finding of this study is opposed with studies conducted on exploratory household survey in Senegal. The study focuses completely on demographic, economic and health related indicators and finds that female household head were linked with increased dropout.

Multivariable logistic regression analysis shows household heads age was considerably linked with dropout from community-based health insurance consumption; so household heads falling in age group of 41-59 years have about 0.402 times more likely to dropout from CBHI utilization. This result is supported by study conducted in Kenya (Kim). But opposing to the findings of study conducted on households of Thehuldere District and Debub Bench District, where respondents' in relatively 26 older age groups were negatively linked with CBHI requirement conventionality and readiness to join CBHI (13). This discrepancy might be due to the fact that older individuals have comparatively weaker immunity and prone to sickness than younger individuals and with anticipated terror of sickness in older ages hence buying health insurance with minimum cost they secure maximum healthcare consumption.

Educational statuses of respondents were found to be an associated factor of either to dropout of CBHI. Households who are illiterate were 2.174 times more likely to dropout from CBHI than those who primary and secondary education and above, AOR = 2.174, 95% CI (0.906, 4.422). The finding of this study is comparable with studies conducted in Nouna, Burkina Faso where the households in dropout group had a significantly lower education than non dropout group (38).

Socio-economic statuses affect households to dropout from CBHI. People get more power to define and use different alternatives if his income is high. If people have enough money or income, they are not interested to renew their membership from the fact that they have the power

and resistance for any occurrence of health shock in the future. Households who were renewed indicate that they are not quite sure about the future and want to protect themselves from unexpected occurrence of health shock at any time. This study found that, households with annual income is less than 20,000 EBR were 3.422 times less likely to drop out from the CBHI than those annual income is between 21,000-49,000,50,000 EBR and above, AOR = 3.440; 95% CI (1.344,8.805). The finding of this study is comparable with studies conducted in Nigeria where wealthy households were less likely to enroll than less wealthy households. But opposite result was conducted in Tanzania (9, 39).

Occupations' of households have associations with dropout of CBHI. Dropout of daily laborer and farmer households were 0.74 and 0.291 times more likely to dropout from CBHI utilization than merchant households, AOR = 0.74; 95% CI (0.015, 0.378) and 0.291; 95% CI (0.114, 0.744). The finding of this study is opposed with studies conducted in Burkina Faso and Ghana where urban dwellers were less likely to join (11, 39).

The finding of this study also revealed that one of the reasons for dropout of CBHI were scope of illness covered by the scheme is limited and members are incurred for additional expenditure for treatment. Limited scope of illness covered by CBHI scheme is one challenge in CBHI because members will pay other additional payment for treatments. Limited scope of illness covered by the scheme is positively correlated with members to dropout from their membership ($r=0.272$ at $p=0.00$). The finding of this study is comparable with studies conducted in India, where limited benefit package were the primary reasons for dropping out of CBHI (17).

Distance from health institution is one of the reasons and is correlated with dropout of CBHI. As distance of health institution far from home increases, people opened for additional transportation and other health related costs like bedroom and food, then increase their interest of dropout from the program. There is slightly weak positive relationship between distance and dropout from CBHI ($r=0.117$ at $p=0.0005$). The finding of this study is comparable with studies conducted in Nigeria and Burkina Faso but opposite result seen in India where the nearest household where dropped out than the far (17, 39, 16).

The findings of this study also showed that the main reasons for dropout of CBHI are quality of healthcare service. Poor healthcare quality (including stock-outs of drugs and medical supplies, poor healthcare, worker attitudes, and long waiting time) was found to be associated with dropout from CBHI. There is also slightly weak positive relationship between dropout of CBHI and quality of healthcare services ($r=0.297$ at $p=0.00$). The finding of this study is comparable with studies conducted in Ethiopia, Burkina Faso, Guinea-Conakry, Senegal where poor healthcare quality increasing the dropout from the scheme (4, 22, 39).

Detail awareness about CBHI scheme work was found to be an associated factor of either to drop out of CBHI. There is also slightly weak positive relationship between dropout of CBHI and quality of healthcare services ($r = 0.135$ at $p=0.00$). The finding of this study is comparable with studies conducted in Ethiopia (17).

8. STRENGTHS AND LIMITATIONS

8.1 Strengths

- Two days training was given for the data collectors.
- Pretest were performed for 30 households that increases the study's validity and reliability
- The study subjects were selected using systematic random sampling technique help to avoid selection bias.
- The mixed method (quantitative and qualitative) data collection enables us to have better information.

8.2 Limitations

- Because of systematic sampling over or under representation may occur.
- Since based on estimation, determination of household income may lack accuracy.

9 CONCLUSIONS

The study was conducted to assess factor associated with dropout rate of community-based health insurance among informal workers in Gumbichu Woreda. The findings of the study indicated that, factor associated dropout rate of community-based health insurance were level of education, socio-economic status of households, types of occupation and years of enrollment. In this study the reasons that induce CBHI members to dropout their membership were mainly due to low quality of health service at health facility followed by the narrowness of the scope of illness covered by the scheme and the contracted health facilities that will provide treatment are very far from the place where respondents were living. This situation forced them to dropout their membership and also these reasons were correlated with dropout of CBHI. On the other hand, CBHI members were encouraged to renew their membership mainly to avoid any potential catastrophic health expenditure because the premium they paid for CBHI is much lower than the expected healthcare expenditure.

10 RECOMMENDATIONS

The overall practice of the insurance in the studied Woreda is good but the Woreda should work on solving problems that are facing the CBHI. It should work with the agreed government Hospital in order to improve the attitude of health employs in making the health service better to the insurance members, government Officials should be committed (Woreda, Zonal, Regional Health Bureau and Federal Ministry of Health).

Based on processed data and conclusions reached, the researcher has suggested the following recommendations:

- 1) The study found out that service quality matters in CBHI membership dropout. Households with perception of excellent service quality were found to renew their CBHI membership contract better than those with perception of poor service quality. The recommendation is that concerned bodies work on improvement of service quality.
- 2) It was found out that a significant number of participants did not know the concept of CBHI scheme. This suggests the need for further awareness creation of concept of the scheme and insurance by the concerned bodies.
- 3) The study found out that list name of CBHI members dropout document is not well organized at Woreda Health Office. The recommendation is that concerned bodies make more efforts to solve this issue as much as possible.
- 4) Referral linkage with Hospital should need much improvement and finally CBHI committee members and other stakeholders should work moreover; these committee members should try to do a lot to encourage members to extend their enrollment as the more they enrolled for more years, the probability to dropout will decline.
- 5) Finally, these findings may not represent the whole CBHI schemes found in the country and in the region. So that the researcher recommend that, the need of further investigation on these and other factors associated with CBHI members dropout.

11. REFERENCES

1. Mukangendo M, Nzayrambaho M, Hitimana R, Yamurage Y. Factors Contributing to Low Adherence to Community-Based Health Insurance in Rural Nyanza District, Southern Rwanda. *Journal of Environmental and Public Health*. 2018; Retrieved from <https://doi.org/10.1155/2018/2624591>.
2. Getasew Taddese, Dasta Dabalkie Atnafu, Asmamaw Ketamaw, Yibeltal Alemu. Determinants of enrollment decision in the community-based health insurance, North West Ethiopia: a case-control study. *Global Health*. 2020 Jan; 6, 4 (2020). <https://doi.org/10.1186/s12992-019-0535>.
3. Pielemeier H. Community-Base Health Insurance: An Evolutionary Approach to Achieving Universal Coverage in Low-Income Country. *Life Science*. 2012; 6:320
4. Jutting JP. Does Community-based Health Insurance Schemes Improve Poor People's Access to Health care? Evidence from Rural Senegal. *World Development*. 2004; 32(2):273-88.
5. Noubiap JJN, Joke WAY, Obama JMN, Bigna JJR. Community-based health insurance knowledge, concern, preferences, and financial planning for health care among informal sector workers in a health district of Douala, Cameroon. *The pan Africa Medical Journal*. 2013; 16:17.
6. Fechter K. Trust, Community-based Health Insurance and Enrollment Rates. Thesis 2012.
7. Adebayo EFUO, Wiysonge CS, Stren EA, Lamont KT, Ataguba JE. A systematic review of factors that affect uptake of community-based health insurance in low-income and middle-income countries. 2015; 15: 543.
8. Mach J, Kuwawenaruwa A, Makawia S, Mtei G, Borghi J. Determinants of Community health fund membership in Tanzania: a mixed methods analysis. *BMC Health Serv Res*. 2014; 14(1):538.
9. Mladovsky P. Why do people drop out of community-based health insurance findings from an exploratory household survey in Senegal? *Social Science and Medicine*. 2014; 107:78-88.

10. Anagaw D, Mebratie RS, Zelalem Yilma, Getnet Alemu, Arjun S. Bedi. Dropping out of Ethiopia's Community Based Health Insurance scheme. International Institute of Social Studies, Erasmus University Rotterdam. 2014.
11. Roger A. Atingal GAARBK-L. Factors influencing the decision to drop out of health insurance enrollment among Urban slum dwellers in Ghana. *Tropical Medicine and International Health*. 2015; 20:312-21.
12. Mariam DH. Exploring alternatives for financing health care in Ethiopia. *Ethiopia J Health Dev*. 2015 ;(3):153-163.
13. Belay Negash, Yadete Dessie, Tasfaye Gobena. Community-Based Health Insurance Utilization and Associated Factors in Gida Ayana Distirict, Oromia Region, West Ethiopia. *East Africa J Health and Biomedical Science*. 2019 Nov; 3(2):13-22.
14. Federal Ministry of Health .Ethiopia Seventh Health Accounts 2016/17. Addis Ababa, Ethiopia. Health Improvement program; 2019 Sep: Available at <https://www.hfgproject.org>.
15. Tsega Hagos Mirach, Getu Debalkie Demissie, Gashaw Andagie Bikes. Determinants of Community-based health insurance implementation in West Gojjam Zone, Northwest Ethiopia: Community-based cross-sectional Study design. *BMC Health Service Research*. 2019 Aug; (2019) 19:544.
16. Predeep Panda AC, Wameq Raza, Arjun Bedi. Renewing Membership in three Community-based health insurance Scheme in rural India. 2015.
17. Mebratie A,D, Sparrow R, Yilma Z, Alemu G, Bedi A. S. Dropping Out of Ethiopia's community-based health insurance scheme. *Health policy and planning*. 2015; 30 (10):1296-1306.
18. Haileselasie, H. Socio-cultural Determinants of community-based Health Insurance: the case of Kilte Awelaelo District, Tigray Regional State. 2015.
19. Tasfay, G. The impact of community based health insurance in health service Utilization in Tigray. 2015; Retrieved from <https://text.123doc.org/document/4071572>.
20. Gumbichu Woreda Health Office. Un-published annual report. 2019/20.

21. Basaza R, Criel B, Van der Stuyft P. Low enrolment in Ugandan Community Health Insurance Schemes: underlying causes and policy implications. BMC Service Research. 2007: Retrieved from <https://doi.org/10.1186/1472-6963-7-105>.
22. Jütting JP. Do Community-based Health Insurance Schemes Improve Poor People's Access to Health Care? Evidence from Rural Senegal. World Development. 2004; 32(2):273-88.
23. Macha J, Kuwawenaruwa A, Makawia S, Mtei G, Borghi J. Determinants of community health fund membership in Tanzania: a mixed methods analysis. BMC Health Serv Res.2014; 14(1):[Internet].[cited2019Mar22].Availablefrom: <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-014-0538-9>.
24. Debebe Z, Mebratie A, Sparrow R, Dekker M, Alemu G, Bedi AS. Impact of Ethiopia's Community-Based Health Insurance on household economic welfare. International Institute of Social Studies of Erasmus University (ISS), 2014 2014/Aug/8. Report No.
25. Oberländer L. Community-based Health Insurance and Household Welfare Empirical Evidence from Burkina Faso. Thesis 2013.
26. Donfouet HPP, Mahieu P-A. Community-based health insurance and social capital: a review. Health Economics Review. 2012; 2:5.
27. Spaan E, Mathijssen J, Tromp N, McBain F, ten Have A, Baltussen R. The impact of health insurance in Africa and Asia: a systematic review. Bull World Health Organ. 2012; 90:685–692.
28. Panda, P., Dror, I.H., Koehlmoos, T.P., Hossain, S.A.S., John, D., Khan, JAM, Dror, D.M. Factors affecting uptake of voluntary and community-based health Insurance schemes in low-and middle income countries: A systematic Review. 2016; 27.
<https://doi.org/10.1371/journal.pone.0160479>
29. Kusi A, Enemark U, Hansen KS, Asante FA. Refusal to enroll in Ghana's National Health Insurance Scheme: is affordability the problem? IntJ Equity Health. 2015; 14(1):2.
30. Hengjin Dong, Manuela, De Allegri Devendra, Gnawali, Aurélia Souares Rainer Sauerborn. Drop-out analysis of community-based health insurance membership at Nouna, Burkina Faso. Health policy. 2009 Dec; 92:174-179.

31. Vialle-Valentin CE, Ross-Degnan D, Ntaganira J, Wagner AK. Medicines coverage and community-based health insurance in low-income countries. *Health Research Policy and Systems*. 2008; 6(1):11.
32. Hengiin, Manuela De Allegri, Devebdra Gnawal, Aurellia Sourares. Dropout Analysis of Community-Based Health Insurance Membership at Nouna, Burkina Faso. *Research Gate*. 2009 May; 92(2-3): 174-9.
33. Ozawa S, Grewal S, Bridges JFP. Household Size and the Decision to Purchase Health Insurance in Cambodia: Results of a Discrete-Choice Experiment with Scale Adjustment. *Applied Health Economics and Health Policy*. 2016; 14:195-204.
34. Odememi ISA. Community Based Health Insurance programs and National Health Insurance Scheme of Nigeria: Challenges to uptake and Integration *International Journal for Equity in Health*. 2014.
35. Dror DM, Hossain SA, Majumdar A, Perez Koehlmoos TL, John D, Panda PK. What factors affect voluntary uptake of community-based health insurance schemes in low and middle-income countries? A systematic review and meta-analysis. 2016; 11 (8):e0160479.
36. Mebratie, A. D, Sparrow, R., Alemu, G., Bedi, A. S, Yilma Z. Enrollment in Ethiopia's Community-Based Health Insurance Scheme. *World Development*. 2015; 74:58- 76.
37. Cohen, J. *Statistical power analysis for the behavior sciences*. 1998; (2nd ed.). St. Paul, MN: West Publishing Company.
38. Dong HDA, M. Gnawali, D.Souares, A. Sauerborn, R. Drop-out analysis of community-based health insurance membership at Nouna, Burkina Faso. *Health Policy*. 2009; 92(2-3):174-179.
39. Sathian DB. Reporting dichotomous data using Logistic Regression in Medical Research: The scenario in developing countries. *Nepal Journal of Epidemiology*. 2011:111-113.
40. Ministry of Health. CBHI Implementation in Ethiopia. 21th Annual Review meeting Addis Ababa. 2019

ANNEXES

Participant information sheet and informed consent form

My Name is Negash kebite I am working in Gumbichu Woreda Health Office on position of planning officer I will be collected data for the study being conducted in this community for partial fulfillment of master's degree at Addis Ababa University, college of health sciences Department of Health Economics. I compassionately ask for you to give me your concentration to clarify you concerning the study and being selected as a study participant.

Study title: Assessments of dropout rate and associated factors from community-based health insurance among informal workers in Gumbichu Woreda East Shoa, Zone, Oromia region, Ethiopia, 2020.

Background: Universal healthcare coverage (UHC) has been problematic to achieve in many developing countries. The large populations of these countries are dependent on direct out-of-pocket (OOP) expenses, which include payments for medicine and other health services (4).

General Objective: To assess the dropout rate and associated factors from Community- based health insurance (CBHI) among informal workers in Gumbichu Woreda, East Shoa Zone, Oromia Region, 2020.

Specific Objective:

1. To determine magnitude of dropout rate from community-based health insurance utilization among informal workers in Gumbichu Woreda.
2. To discover factors associated with dropout rate from community-based health insurance utilization among informal workers in Gumbichu Woreda.

Significance of the Study

The consequence of this study will have a very important benefit for the Worde Health Office participation programs to recognize linked factors with dropout rate from community-based health insurance large section of the population in the program thus advance community health and continued existence. In addition intend of this study is to inscribe a thesis as a requirement for the partial fulfillment of Master's degree.

Procedure: Data will be collected using predesigned questioners for assess. The sample will be collected face to face interviewing at house hold level. Data will be collected and submitted to the investigator daily. It is not necessary to write the name of respondents instead we use code.

Risk and discomfort: No any known risk and discomfort associated with the study.

Confidentiality: The information you will provide us will be confidential. There will be no information that will classify you in particular.

The right to refuse and withdraw: Participant has full right to refuse from participation or withdraw from the study at any time they want in this study, without losing any of their right.

Contact person:

Name	Mobile phone	Email
Negash Keabite	0921862562	yyabsiranegash@gmail.com

Consent form

I have been briefly knowledgeable concerning the study and clearly understood the objective of the study. So I here endorse my consent with my signature to take part in the study. Name of the respondent _____ Signature _____ Date _____

Thank you for your cooperation!!!!

Annex 1. Questionnaire for quantitative studies English version

Addis Ababa University College of health sciences, School of Public Health

This questionnaire will be prepared for collecting information on Dropout rate and associated factors from Community-based health insurance utilization among informal workers in Gimbuchu Woreda, East shoa Zone, Oromia region, Ethiopia, 2019.

Kebele: _____ House code _____ Name _____

Data Collector: _____ Signature _____ Date: _____

Name of Supervisor: _____ Signature _____ Date: _____

Part one: Socio-demographic and economic characteristics of study population

No	Question	Response option	Skip
101	Sex of the respondent?	1.Male 2.Female	
102	Age of the respondent?	Age in years-----	
103	Current marital status?	1. Single 2.Married 3.Divorced 4.Widower/windowed	
104	Religion?	1. Orthodox 2. Muslim 3. Protestant 4.Others (specify	
105	Ethnicity?	1..Oromo 2.Amhara3.Tigre 4.Others(Specify)	
106	What is your educational level?	1. Illiterate 2. Informal education 3. Primary education 4 .Secondary education and above	
107	What is your annual income earned from harvesting	ETB _____	
108	Number of family members	Number-----	
109	What is your occupation?	1. Farmer 2.Daily labor 3. Merchant 4. Other (specify)	
110	What is your occupation?	1. Farmer 2.Daily labor 3. Merchant 4. Other (specify)	

111	In the past 12 months, how many Kilo grams/kuntal of each crop did you produce/harvest?	Kilogram/quintal_____	
112	What was the price of your sell per kg? [list sell price for each crops]	ETB _____	

Part two: Questions related community- based health insurance.

No	Question	Response option	Skip
201	When you started enrolling CBHI?	_____years	
202	Have you renewed your CBHI membership for this year?	1. Yes 2. No	If your answer is no skip to Qes no 204
203	If you renew membership what was the reason?	1. To use modern health care service 2. Illness or injury occurs HH members 3. Perception of good quality of health care service 4. Premium payment is cheaper than out of pocket payments to get health care service 5. To protect my family from un expected catastrophic health care expenditure 6. Due to pressure /advocacy from CBHI/government office 7. The benefit package of CBHI is good and I benefit from the scheme	

		99. Other specify	
204	If you do not renew your membership for this year, what was the reason?	1.Illness or injury does not occurs frequently in HH members 2.unavailability of medical equipments 3.low quality of health care service 4. lack of detail awareness about CBHI 5.Benefit package is not meet our needs 6 The contracted health facility is far from our home 99 .other specify	
Questions related to knowledge of CBHI (Q 205-Q 2014)			
205	Do you know health services covered under CBHI scheme?	1.Yes 2. No	
206	Which services do you know CBHI benefit covers?	1. Inpatient 2.Outpatient 3. both in and out patient 4.Abroad treatment 5.Cosmetic surgery	
207	In the case of CBHI programs you have to pay money (premiums) but do not know whether you will get the money back?	1.Correct 2.Not correct 3. Do not know	
208	CBHI programmed are like savings scheme; you will receive interest and get your money back?	1.Correct 2.Not correct 3. Do not know	

209	All health care costs will be covered by CBHI programs?	1. Correct 2. Not correct 3. Do not know	
210	If you do not make claim any costs through CBHI your premium will be returned?	1. Correct 2. Not correct 3. Do not know	
211	The timing/time interval of premium payment is convenient for my household	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	
212	The CBHI registration fee is affordable for my household.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	
213	The CBHI regular contribution (premium) is affordable for my household.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	
214	The CBHI management officials are trustworthy.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	

Part three: Health related questions

No	Question	Response option	Skip
301	In general, how do you describe the health status of this household member now?	1.Excellent 2.Very good 3.Good 4.Poor 5.Very Poor	
302	Where do you get treatment when any family member becomes sick?	1. Private Health Facility 2.Public health Centre 3. Public hospital 4. self-treatment, 5. Traditional healer 6. local drug vendor	
303	Reasons for going there?	1. The HF was physically accessible 2. The HF was not expensive 3. The health facility not too crowded (Short-waiting time) 3. The health service was	
304	Perceived quality of the health care service given?	1.Very low 2.Low 3.Neutral 4.High 5.Very high	
305	How much minutes do you take to walk to get nearest health facility from your home?	1. Health center..... 2. Health post..... 3. Public Hospital..... 4. Private clinics.....	
306	Distance in kilometers?	1. Health center..... 2. Health post..... 3. Public Hospital..... 4. Private clinics.....	

Annex 2 Interview guide in English form

Dear informants the aspire of this meeting is to gather data for the study permitted why does households dropout of community-based health insurance in Gimbuchu Woreda, East shea Zone, Oromia region, Ethiopia. Generally this interview is formulated to determine effects of socio economic and effects of perceived benefit package on dropout of community-based health insurance. This study is indispensable in given that information about why households drop out of community-based health insurance in Gimbuchu Woreda. Thus, I compassionately ask your collaboration in responding the responses honestly.

- 1. In-depth Interview Guide Developed to Collect Data from CBHI scheme officers Starting time (hh-mm)_____ / _____
- 2. Termination time (hh-mm))_____ / _____

Annex 3 in -depth interviewee questionnaire in English form

Date: ----- Interviewer: -----Position: -----

Interviewee: -----Education status: -----

Duration of interview: ----- Telephone: ----- Place: -----Woreda &

Name of Kebele: -- -----Time of interview: -----

In-depth interview questions

1. Can you tell me about the current status of CBHI groups? Haw many before and after this year

----- 2.How is the trend of membership enrollment? Do new members enrollment increased or decreased? What was the possible reason?

3. How many members dropout or discontinue since the last two years? What was their major and common reason? What measurement your organization took?

4. Do you think that income of household affect renewal in your kebele? And why?

4. When collection of premium is takes place (Timing of colleting the premium)?

5. Do you think that family size of household and age affect renewal of membership in your kebele and why?

7. Do you think that health care service given for members and non members of CBHI is similar? If not why?

8. Do you think that the CBHI benefit package meets the requirement of your community?

9. What are the major socioeconomic and demographic as well as the perceived benefit package that affect renewal in your kebele? Supply side (From your office side)

Demand side (From member's or household's side)?

Annex 4: Participant Information Sheet and Informed Consent form for Selected Study

Participant (Afaan Oromo version).

Akkam bultaan/ooltan! Maqaan koo _____ jedhama. Aniis sassaabduu ragaa qo'annoo ganda keessan irratti barataa digrii lammaffaa Yuniversitii Finfinee kan tahe Obboo Nagaash Kabitetiin gaggeeffamuuti. Isiniis garee qo'annoo keenyaa taatanii waan filatamtaniif waa'ee qo'annoo kanaa isinii ibsuuf gurra fi qalbii keessan akka naaf ergiftan kabajaan isiin gaafadha.

Mata-duree qo'annichaa: Qorannoo haala fayyadamtoota Inshuraansii Fayyaa Hawaasa tahani kannen miseensuma isaani hin haromsine fi walitti dhufeenya inni wantoota biraa waliin qabu qorachuuf bara 2018/2019 gaggeeffamu.

Kaayyoo qo'annichaa: Argannoon qorannoo kanaa waajjiira fayyaa aanaa keessanifis tahe kanneen biroof akkasumas fayyaa ummataa foyyeessuu irratti fi sagantaa Inshuraansii fayyaa foyyessuuf ni fayyada. Kanaan alattiis, kaayyoon qorannoo kanaa, qorataan qo'annoo kanaa digrii lammaffaa isaa public health hooggansa eegumsa fayyaa irratti fudhachuuf uulaagaa isa barbaachisu guuttachuuf isa gargaara.

Deemsa fi yeroo fudhatu: Hirmaachuuf fedhii qabdu yoo tahe gaffiiwwan garaa garaa qo'annoo kanaaf qopha'an isiniifan dubbisa. Baay'inni gaaffii walii galatti 47 kan hin caalle yoo tahu daqiiqaa 30 duwwaa fudhata.

Faayidaa fi miidhaa qo'anichaa: Rakkinni qo'annoo kana keessatti hirmaachuu keessaniin isin quunnamu baay'ee xiqqaa yoo tahu, innis yeroo keessan muraasa (daqiiqaa 30) qofaa fudhachuu tahe. Qo'annoo kana irratti hirmaachuu keessaniin kaffaltiin kaffalamu tokko iyyuu hin jiru. Garuu bu'aan qo'annoo kanaa ragaawwan haarawaa waajjira fayyaa naannoo keessanii fi qooda fudhattoota biroof ni argamiisa.

Iccitii eegu: Odeeffannoon isin nutti himtan hundi iccitiin qabama. Gaaffiin enyuummaa keessan fi maqaa keessan ibsu hin jiru. Argannoon qo'annaa kanaa hawaasa qo'annaa kana irratti hirmaatan akka walii galaatti Kan ibsu yoo tahu, karaa kamiinuu dhimma nama dhunfaa hin calaqqisiisu. Haala kamiinuu namoota dhunfaa qo'annaa waliin walqabsiisuuf afaaniiniis tahe barreeffamaan ragaa hin waamsiifnu.

Mirga: Hirmaannaan qo,annoo kana keessatti gootan guutummaan guutuutti fedhii irratti kan hundaa'e. Mirga hirmaachuu fi hirmaachuu dhiisuu ni qabdu. Hirmaachuuf, yoo murteessitsn, mirga yeroo barbaaddanitti qo'annoo kanaa keessaa bahuu yommuu qabaattan kana gochuu keessaniifis faayidaan isiin argachuu qabaattanii dhabdan tokko iyyuu hin jiru. Gaaffii deebisuu hin barbaadne deebisuufis hin dirqamtaan.

Teessoo: Gaaffii yookiin qeeqa qo'annoo kana ilaallatuu kamiifuu, teessoo armaan gadiin gaafachuu fi quunnamuu ni dandeessu.

Qo'ataa muummee: **obboo Nagaash Kabite lakk. bilbila mobayilii: +251921862562 yookiin Emayilii, yyabsiranegash@gmail.com.**

Unkaa walii galtee fedhii irratti hundaa'ee:

Unkaan walii galtee hirmaattootaa naa dubbifameera/dubbiseera. Kaayyoo qo'annichaa, deemsi isaa, faayidaa fi midhaa, dhimmi iccitii eeguu, mirga hirmaachuu fi teessoon qo'ataa illee natti himamee jira. Wanta ifa hin taane akkan gaafadhuuf carraan naaf keennamee jira. Akkan yeroo barbaade qo'annicha adda kutee bahuu dandahu yookiin gaaaffii deebisuu hin barbaannee deebisuu hin dirqamnes natti himameera. Kanaafuu, akkan qo'annaa kana irratti feedhii kootiin hirmaadhe mallattoo koo armaan gadiin nan mirkanneessa.

Mallattoo hirmaattuu/ttaa_____ Mallattoo odeeffannoo sassaabduu/aa_____

Hub: Waliigalteen Kun fuul-dura hirmaataa qo'annoo fi odeeffannoo sassaabduu itti malleettaffamuun, kooppiiin isaas hirmaataa/ttuf kennamuu qaba.

Galatoomaa!

Annex 5: Guca gaaffilee afaan oromoon qophaa’e

Gucni gaaffilee kun kan qophaa’e Qorannoo haala fayyadama Inshuraansii Fayyaa Hawaasa tahani kannen miseensuma isaani hin haromsine fi walitti dhufeenya inni wantoota biraa waliin qabu fi miseensi akka hin fayyadamne taasisan maal faa akka ta’an beekuuf odeeffannoo sassaabuuf gargaaru dha.

maqaa odeeffannoo sassaabaa/duu -----mallattoo -----

maqaa to’ataa/ttuu -----mallattoo ----- **guyyaa -----sa’atii -----**

Kutaa 1ffaa: Gaaffilee waa’ee abbaa warraa deebisuu kan mullisan

101	Haala Koorniyaa?	1. dhalaa 2. Dhiira
102	Umuriin kessan meeqa?	Waggaan
103	Haala gaa’elaa	1. kan fuude ykn heerumte 2. kan irraa du’e 3. kan hiike /hiikte 4. kan addaan ba’e /baate 5. kan hin fuudhin ykn heerumiin
104	Amantiin kee maali?	1. Otoodoksii 2. Musliima 3. Protestaantii 4. kan biraa
105	Qomoo kee maali?	1. Oromoo 2. Amaara 3. Tigree 4. kan (biraa)----- -----
106	Sadarkaa barnootaa	1. kan hin baranne 2. barnoota bu’uura kan baraate/tte 3. sadarkaa tokkoffaa 4. sadarka lammafa fi isaa ol
107	Galii wagga omishaa qonna ykn madda galii biro irra argatan meeqa?	Qarshii Itiyophiyaatin
108	Lakkofsi maatii kee meeqa?	lakkofsan-----

109	Hojiin kee maali?	1. Qotee bulaa 2. haadha manaa 3. daldalaa 4. kan (biraa)
110	Bara darbe kana midhaan gosa kuntaalaan meeqa argattan (gal)	Kiloo/kuntaala _____
111	Gatiin kiiloo tokkoo meeqa ta'a? [midhaan gosa adda addaa tif geddugaleessaan]	Gatii omisha hundaa tilmamaan Qarshii _____

kutaa 2ffaa: Gaaffilee inshuraansii fayyaa Hawaasa waliin wal-qabatan

201	Bara kam miseensa inshurani fayyaa tatan ?	Baran _____
202	Miseensumma kessaan bara kana haaromsitani jirtu?	1. eyyee 2. Lakkii Deebin kessan lakkii yoo tahe gaffii 204 deebisa
203	Sabaabota gurguddo miseensuma insuransii fayyaa haaromsitan ibsaa?	1.dhukkubni ykn rakkon fayyaa maatii koo waan qunnamef 2.kafaltiin tajaajila fayya argachuf kiisi koo kessaa kafalu fi kafaltiin inshuransiif kafalu gaari waan tahef 3. dhibbaa qamoole inshuransi fayyaa ykn qamoole mootumma kan biro 4. Tajaajili fayyaa miseensota inshuransi

		fayyaa hawaasaf gama dhaabilee fayyaatin kennamu qulqulina waan qabuuf 5. Basii guddaa miseensa maati kootif fayyaf baasu irraa of eguuf 6. Kan biro (haa ibsamu)
204	Sababoota gurguddo misensa inshurani fayyaa akka hin haromsinee isiin tasise malii ?	<p>1. Maatiin kiyyaa dhukkubnii irratii dadebi'amee waan hin geenyeef</p> <p>2. Tajaajili fayya miseensota inshuransi fayyaa hawaasaf gama dhaabilee fayyaatin kennamu qulqulina waan hin qabneef</p> <p>3. Ogeeyii fayyaa miseniisotaa inshuransii fayyaa walqiixatii waan hin kessumesanef 4. Miseeniisaa inshuransi fayya tahuus dabalataatan mallaqaa waaniin gafatamuuf 5. Ogeeyii fayyaa miseniisotaa inshuransii fayyaa walqiixatii waan hin kessumesanef 6. Maatiin kiyyaa miseenisaa tahuus fayadamuu waan hin dandeenyeef 7. Dhabilee fayyaa tajaajila inshuransii fayyaa kennuf waligalte seenan mana kenyaa irraa faagenya waan qabaniif 99. Kan biro (haa ibasmuu)</p>
Gafiile hubbano inshuraansi fayyaa waliin wal qabatan		
205	Faayidaa tajaajila fayyaa Insuraansiin fayyaa hawaasa kennu beektaa?	1. eyyee 2. Lakkii
206	Yoo beekta tahe tajaajila fayyaa isa kam kenna?	1. Tajaajila deddeebihanii yaalamuu 2. tajaajila ciisanii yaalamuu 3. biyya alaa deemanii yaalamuu 4. bareedinaaf baqaqsanii hodhuu 5. qaama jijjiruu 6. tajiijila geejjibaa kaafaluu
207	Namoota dhukkubsatan qofatu Inshuraansii fayyaa	1. sirrii dha 2. sirrii miti 3. hin beeku

	fayyadamuu qaba?	
208	Inshuraansii fayyaa fayyadamuuf qarshiin ni kaffalama garuu qarshiin kun nuuf deeba'a ta'ee hin deebi'u ta'ee beektu ?	1. sirrii dha 2. sirrii miti 3. hin beeku
209	Inshuraansii fayyaa hawaasa akka qusannaa dha qaarshii kaawwatteef dhalli siif kaffalama achii booda qarshii sana ni deebifatta ?	1. sirrii dha 2. sirrii miti 3. hin beeku
2010	Yeroon kafaltii inshuraansii fayyaa nuuf mijaawaa dha.	1, Baayyeen irratti walii hingalu 2, Irratti walii hin galu 3, Giddugaleessa 4, Irratti waliin gala 5, Baayyeen irratti walii gala
2011	Gatiin galmee insuraansii fayyaa kafaluu ni dandeenya?	1, Baayyeen irratti walii hingalu 2, Irratti walii hin galu 3, Giddugaleessa 4, Irratti waliin gala 5, Baayyeen irratti walii gala
2012	Kafaltiin inshuraansii fayyaa kafaluu ni dandeenya	1, Baayyeen irratti walii hingalu 2, Irratti walii hin galu 3, Giddugaleessa 4, Irratti waliin gala 5, Baayyeen irratti walii gala
2013	hojjeettoonni inshuraan fayyaa amanamoo dha	1, Baayyeen irratti walii hingalu 2, Irratti walii hin galu 3, Giddugaleessa 4, Irratti waliin gala 5, Baayyeen irratti walii gala

Kutaaa 3ffaa gaafilee fayyaa waliin wal qabatan

No	Gaffii	Deebii
301	Walumaagalatti fayyaa maatii keessani akkamiin ibsita?	1. Baayyee baayyee gaarii dha 2. baayyee gaarii dha 3. gaarii dha 4. badaa 5. baayyee badaa dha.
302	Yeero maatiin kessaan dhukkubsatan tajaajila fayyaa essaa argatuu ?	1. kilinika dhuunfaa 2. buufata fayyaa 3. hospitaala 4. ofumaa mana keessatti wallaanna 5. ogeessa aadaa bira geessina 6. mana daldalaa qorichaa geesina
303	Maaliif bakka filatan kana geessitu?	1. dhiyeenya irratti waan argamuuf 2. kafaltiin isaa gad bu'aa waan ta'eef 3. namni waan itti hin baayanneef 4. tajaajilli isaa waan nama fayyisuuf
304	Qulqullinni tajaajila kennamee akkamitti ilaalte?	1. Baayyee gad bu'aa 2. Gad bu'aa 3. Giddugaleessa 4. Qulqulina olaanaa qaba 5. qulqullina Baayyee olaanaa qaba
305	Tajaajila fayyaa argachuuf mana keessan irraa dhaqaa gala daqiiqaa meeqa deemsisa	. 1. Buufata fayyaa----- 2. kellaa fayyaa-----
306	Tajaajila fayyaa argachuuf mana keessan irraa dhaqaa gala kiloometira meeqa deemsisa?	1. Buufata fayyaa----- 2. kellaa fayyaa-----

Annex 6: in-depth interviewee guide in afaan Oromo Version

Akkaam jirtuu anii Obboo Nagaash kabittee jedhama .Uniiversiti finfinee kollejji dame fayyaa hawaasa kessaatti miseensa qorranno gaggessan kessaa tokkoo kaniin tahee dha.

Kabaajamtoota hirmatoota gaafanno afaani kan tatan kayyoon gaaffanno kana misensoota inshuransii fayyaa hawaasa Aanaa Gumbichu tahan sabaabota gurguddo miseensumma isaani addaa kutaan fi wantoota kanaan wal qabatan adda baasu fi beekuf yoo tahu haaluma kanaan isiinis hirmattonni qorranno kanaa kessattii hirmataan rakkole gama inshuransii fayyaa hawaasan jiru addaa baasun kallattii furmaata ka'uun inshuransii fayyaa hawaasa akkaa foyya'uu taasisuf deggarsa isiin irraa egaamu akka tasiftaan abdiin irra qabna.

Annex 7 in -depth interviewee questionnaire in Afaan Oromoo Version

Guyyaa ----- Gafatama: -----Position: -----Gafatama -----Sadarka barnoota: -----

Yeero gafanno fudhate -----Bilbila: ----- Iddoo: -----Woreda & Name of Kebele: -- -----

Yeero gafanno : -----

Haala Gaffanno

1. yeroo amma kana kessa haala fayyadama inshuransi fayyaa hawaasa inni irra jiru nu himuu dandessu ?

----- 2.

Haali horanna miseensa inshuransii fayyaa hawaasa maal fakkata ? horannan miseensa haara yeroo ammaa kanaa dabala jira mo h irracha jira? Sabaabni isaa hoo maali?

3. Woggotan laman dura miseensonni inshuransii fayyaa hawaasa adda kutaan meqaa nitahu ? Sabaabni beekamo kanaan walqabatan mal fa'ii? Akka waajjiratti rakkoo kana furuuf tarkanfii isiin fudhatan maalfa'ii ?

4. Akkaa gandaa kessanittii galiin abbaa warraa haromsaa miseensa inshuransi fayyaa irraatti dhibba ni qaba jette yaada ? maalif?

5. Yeero kam kessaa kafaltti miseensa inshuransii sasabdu?

6. Akkaa gandaa kessanitti bayyini miseensoota abbaa warra fi Umurrin miseensoota haromsaa inshuransii fayyaa irraatti dhibba ni qaba jette yaada ? Malif? _____

7. Tajaajili fayyaa miseensoota inshuransii fayya kan tahani fi hin taneef kenaamu walfakata jette yaada? Yoo lakki jette maalif?

8. Faayyidawaan inshuransi fayya hawaasatin uwwifaman feedhii hawaasa ni guuta jette yaada ?

9. Rakkolen gama dinaagde ,Hawaasumma ,haala abbaa warra waalin walqabate fi faayyida wan inshuransii fayyaa hawaasa jalati hammatamani walqabate akka ganda kessanitti dhibba haromsa miseensa inshuransii fayya hawaasa irraatti dhibba ni qaba?

Rakkolee gama dhihessin walqabate jiru (kallattii waajiiratin kan jiru)

Rakkolee gama Feedhin walqabate jiru (kallatti miseensoota Inshuransi fayyaatin hawaasatin jiru)

