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Catastrophic and impoverishing out-of-pocket health expenditure in Ethiopia: Evidence from the Ethiopia Socioeconomic Survey

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List of acronyms

AgSS	Agricultural sample survey
CBHI	Community based health insurance
CHE	Catastrophic health expenditure
EA	Enumeration area
E.C	Ethiopian Calendar
ESS	Ethiopian socio-economic survey
ETB	Ethiopian Birr
FMOH	Federal minster of health
GDP	Growth domestic product
HSTP	Health sector transformation plan
IHE	Impoverishing health expenditure
LMICs	Low and middle-income countries
NCD	Non-Communicable Disease
NCDI	Non-Communicable Disease and Injury
OOP	Out-of-pocket
SDG	Sustainable development goal
SHI	Social health insurance
SNNP	Southern Nation Nationality and People
SSA	Sub-Sahara Africa
UN	United Nations
UHC	Universal health coverage
WHO	World Health Organization

Abstract

Background: Out of pocket payment remains one of the ways to finance health care in Ethiopia accounting for 31%. These out of pocket health expense leads citizens' face catastrophic and impoverishing expenditure. The most recent survey-based study of catastrophic and impoverishing health expenditure was done from the 2015/16 consumption and expenditure survey with finding of 2.1% and 1% respectively.

Objective: To assess catastrophic and impoverishing out of pocket health expenditure and the determinant factors of catastrophic health expenditure in Ethiopia, 2023 from the 2018/19 socioeconomic survey.

Methodology: A secondary data from Ethiopian socioeconomic survey 2018/19 conducted by Ethiopia's Central Statistical Agency and World Bank was used to assess the catastrophic and impoverishing health expenditure at the national and subnational level by the Wagstaff and van Doorslaer and Xu. Et.al Methodology. Then binary logistic regression was computed by the STATA (ver.12) software to assess the determinant factors of catastrophic health expenditure.

Result: From 6770 households 1.49% and 0.89% of them in Ethiopia faced catastrophic and impoverishing health expenditure respectively at 10% threshold level and households having a member with more facility visit had increased likelihood of facing catastrophic health expenditure (AOR=2.45, 95%CI; 1.6- 3.8) and also having member being hospitalized in the household had increased odds of facing catastrophic health expenditure (AOR=1.9, 95%CI; 1.19- 3.16). On the contrary, there is a decreased likelihood of facing catastrophic health expenditure among those who were insured for health (AOR= 0.58, 95%CI; 0.35- 0.97) and was in the richest consumption quintile group (AOR=0.6, 95%CI; 0.47- 0.65).

Conclusion and recommendation; The finding indicate that there are still notable households facing catastrophic and impoverishing out of pocket health expenditure in Ethiopia especially in the lower consumption quintiles indicating inequity. In addition it is found that those with health insurance coverage, lower hospitalization and health service utilization had lower chance of facing catastrophic health payment. So it is suggested that activities that reduce hospitalization rate, increase insurance coverage and addressing the poor must be in place so that the catastrophic health cost incurred can be lowered at national level.

Chapter 1: Introduction

1.1. Background

All member countries of the United Nations (UN) aim to achieve SDG by 2030 (1). Among the goals good health and wellbeing are included. Specifically GOAL 3.8 states that the means to attain universal coverage is through financial risk protection, access to essential quality health service and access to safe, effective, quality and affordable essential medicines and vaccines for all (2).

Citizens are said to be financially protected if they do not face financial hardship and difficulty of accessing health service due to their health and health related expenses (3) (4) . One factor that that leads them to the mentioned outcomes is out of pocket payments for using health services which remains one of the ways to finance health expenditure and might lead households and individuals face financial catastrophe or impoverishment (5).

Health expenditure is defined as catastrophe if it is above a certain agreed fraction of household's income or total expenditure (6). If the expense gets up to the level where it pushes the individual or household below the agreed international ($1.90 threshold) or national poverty line that varies according to the countries context it is said to be impoverishing health expenditure (5).

The international recommended method to reduce the OOP mechanism is to implement and expand the risk pooling and prepayment mechanisms which are still in a low coverage state in most low-income countries (7).

Despite the negative consequences associated with paying OOP for health services it remained as the main mechanism of payment in many countries of the SSA and exceeds 50% of total health expenditures (8) (6).

In most low- and middle-income countries, there is no much explicit evidence base for the interventions to be supplied by public finance. Specifically, there is limited number of systematic studies of specific diseases and conditions that leads to OOP direct medical costs followed by impoverishment. If present this kind of systematic studies could help in the redirection of designs and implementation of the essential health benefits package (9).

Ethiopia is a country which aims to achieve UHC by 2035 through its HSTP strategies. From its planned initiative financial risk protection is the major one. To achieve these plan activities such as making health service fees affordable by 80% subsidization in public health facilities, full subsidization of the very poor through fee waivers program, implementation of community-based health insurance (CBHI) schemes covering around 440 woredas (20%), and strengthening coverage were implemented (10).

Despite the efforts made by the health sector to reduce OOP the population is still under the poverty line (23%) and 31% OOP mechanism is used for receiving health service. The increment in total health expenditure without balanced increment in the GDP, lack of initiation of SHI and inadequate coverage of the CBHI system has still made the decrease of the OOP payment for health unsatisfactory (11).

Currently Ethiopia is facing double burden of both communicable and non-communicable diseases. The well-known causes constituting a large share of total mortality in Ethiopia for the year 2019 were neonatal disorders, diarrheal disease, lower respiratory infections, tuberculosis (TB), HIV/AIDS, malaria, childhood vaccine-preventable diseases and meningitis in the communicable, maternal, neonatal and nutritional category and vascular diseases, diabetes, cirrhotic diseases and cancers in the non-communicable category and Last but not least road traffic accidents in the injuries category (12).

Medical impoverishment was remarkably related with illness incidence and health services utilization. So assessing catastrophe and impoverishment due to OOP direct medical costs can yield relevant information for the advancement of financial risk protection activities and redirect the design of health policies toward universal health coverage, reduce direct OOP payments, and mitigate poverty (13).

1.2. Statement of the problem

Even though OOP health payment is known to be the most regressive method of funding for healthcare and in spite that guaranteeing access to health services for all without facing financial hardship is mandatory for sustainable development and economic growth millions of people seeking care around the world are still struggling financially due to the burden of out-of-pocket medical expenses (14) (15).

In addition access to healthcare is hampered by out-of-pocket (OOP) health costs and according to various studies, even minor OOP expenses can put patients and their families in poverty which in return place low-income communities at significant financial risk and prohibit their right of getting adequate health service (16).

Globally, about 930 million people (12.7%) faced catastrophic health spending by scarifying at least 10% of their household budgets for paying to health care out of their own pockets, and about 90 million people (1.2%) are still being pushed in to extreme poverty as a result of out of pocket payment for healthcare (17) which may lead people not to access the health service due to lack of financial capability, especially for the poor and cut back their basic necessities unnecessarily respectively (3) (4).

In low-income countries, out-of-pocket payments account for 30% of total funding (18). In addition, in these countries average household Out-Of-Pocket healthcare expenditure per individual has risen by 66% between 2000 and 2017 (19).

In developing countries, including Ethiopia, the payment method for the healthcare cost is mainly OOP paid at the time of seeking care or at the point of service delivery, which could impede healthcare access or otherwise lead to impoverishment due to healthcare utilization (20).

As the Ethiopia's seventh national health account report of 2016/17, OOP payment contributes for about 31% of the overall funding, or 1.3 percent of GDP, considerably higher than the global recommended target of 20% and as a percentage of total private health expenditure, out-of-pocket (OOP) spending exceeds 93% (11).

In Ethiopia, the catastrophic rate is higher among the poor and has decreased over time. Not only did the rate of catastrophe increased over time from 2% in 2011 to 5% in 2015, but the poorest wealth quintile went from a catastrophic rate of 3.4% in 2011 to 9% in 2015, an increase of almost 6 percentage points(21). But According to a recent study estimated from nationally representative data it was found to be 2.1% CHE incidence and 0.8% IHE. High rates of CHE and IHE was recorded in Afar (5.8%, 5%) (22).

To the best of our knowledge except for the above mentioned studies there is no recent study showing the catastrophic and impoverishing health expenditure at national and sub-national level. In addition there is no study that assessed the determinant factors of catastrophic health

expenditure nationally so assessing this all factors adds value for activities that are being done in the country to reduce OOP health payment so that attainment of the national HSTP goal and the international UHC goal is reachable (23).

1.3. Significance of the study

As the one goal stated in the HSTP is financial risk protection through reducing OOP payment for health, the finding of this study would serve as an evidence to show the current level of catastrophic and impoverishing health expenditure and factors that critically leads citizens to incur catastrophic expense for health due to OOP health payment. So by reviewing this finding activities that are in execution and conception state in the country for reducing out of pocket health expense can be facilitated and redirected.

In addition, since catastrophic and impoverishing health expenditure are indicators of financial risk protection level of a country, the progress of Ethiopia towards UHC can be assessed using the result of this paper. Moreover it will help other researchers to dig more in to this topic so that periodic evaluation and interventions regarding health financing activities can be amplified.

Chapter 2: Literature review

2.1. Definition of basic terms and concepts

Out of pocket payment for health care is a payment made by an individual receiving the service to the healthcare service provider including the cost of medication, transportation and others. Alternatively it can be seen as the cost covered by private households for health service rather than by insurance or third party payment methods (24).

Health care expenses are classified as direct medical, direct non-medical and indirect medical costs. Direct medical costs are expenses that the receiver incur when obtaining medical service like consultation by professionals, medications, in patient care and diagnostic tests whereas direct non-medical costs are expenses that are not medical by nature but incurred in need of access to health care such as transportation and meal fees. Indirect medical costs are merits lost due to an illness or cost of productivity loss caused by a patient.

When these out of pocket expenses for health gets above a certain agreed fraction of household's income or total expenditure it is termed as catastrophic expenditure (17). Then it will be impoverishing if the expense gets up to the level where it pushes the individual or household below the agreed international or national poverty line (5).

Catastrophic expense can be measured by its incidence and intensity level. Incidence of catastrophic expenditure is the measure of the proportion of households facing catastrophic payment and Intensity of catastrophic expenditure is the measure of by how much the household is facing the catastrophe (25).

2.2. Catastrophic and impoverishing health expenditure

In recent years lots of studies has been done in many countries across the world on catastrophic and impoverishing expenditures resulting from out of pocket health expenses. These studies measured catastrophic expenses in a population by assessing the incidence and intensity level of health care expenses and impoverishment level was determined using either standard national or international poverty lines.

Among the single-country findings, the latest national incidence of CHE at the 10% of budget share varied significantly among Low income countries and Lower middle income countries, lying between 1.8% in Liberia to 32% in Sierra Leone, and 2.24% in Ghana to 24.6% in Bangladesh,

respectively. Beside this, CHE in upper middle income countries mainly computed it using the normative food expenditure technic at a 40% threshold, lying between 0.33% in Turkey and 8.94% in China with Thailand having 2% CHE. Unlike other low income countries, the CHE incidence in three low income countries i.e. Liberia, Malawi and Ethiopia, was very low laying between 1.8% and 4.2% at 10% of budget share in which it was around 15% for most LMICs (26).

Also a study done in India on catastrophic health expenditure from nationally representative data indicates that the CHE incidence using 10% threshold of the household total expenditure was 10.94% in 2014 and16.51% in 2018 and the intensity of catastrophic expenditure was 35.94% in (2014) and 34.08% in 2018 (27).

Another study in Bangladesh using 10% of the total and 40% of non-food expenditure as thresholds the incidence of CHE was estimated as 24.6% and 10.9% respectively, and these were concentrated among the poor. About 4.5% of the population accounting 8.61 million was impoverished (28).

When coming to African countries despite the negative effects associated with paying OOP for health services it persisted as the major method of payment in many Sub Saharan African countries and exceeds 50% of total health expenditures (8) (6).

Another study in the Sub Saharan countries using the LSMS-ISA surveys shows that catastrophic expenditures vary widely ranging from 0.84% in Nigeria to 20.2% in Tanzania. In fact, Tanzania (22.2%) and Uganda (8.2%) took the lead in having the highest share of households incurring in excess of 25% of their non-food expenditures on healthcare. On the contrary, apart from Nigeria, Malawi is the other country with the lowest level of catastrophic health expenditures (1.57%) (29).

Coming to a study in Zimbabwe it indicates that household OOP expenditure accounted for about ¼ of the total health expenditure and 7.6% of households incurred catastrophic health expenditure (CHE). Additionally, 1.29% of households fell into poverty due to health care–related expenditures (30).

Another study in Malawi showed that a total of 167 households (1.37%) incurred catastrophic health expenditures. These households on average spend over 52% of household nonfood expenditures on health care and 1.6% were impoverished due to out-of-pocket health expenditures (31).

Also a study in Kenya showed that among those who utilized health care, 11.7 percent experienced catastrophic expenditure and 4 percent were impoverished by health care expenditures. In addition, nearly 2.5 million individuals were plunged into poverty as a result of payment for health care (32).

Here in Ethiopia the national CHE rate using the 2015/16 consumption expenditure survey was estimated at 2.1% when using a 10% threshold and it was greater in Afar (5.8%), Benshangul-Gumuz (4.0%) and Harari (3.6%). In addition, the poverty headcount using the national poverty line ETB 7184 per adult per year it increased by 0.9 percentage points, from 23.8% to 24.7% after paying for health services (22).

Another meta-analysis done in Ethiopia using pooled estimate showed that the mean catastrophic healthcare expenditure at 10% of threshold was 40% and facing Out-Of-Pocket / catastrophic healthcare expense among the poorest quintile was about three times than that of the richest with *p*-value < 0.001. Also, on pooled analysis, the average direct Out-Of-Pocket healthcare expense was $32 per month (33).

So it can be concluded that even if there are efforts made by the health sector to reduce OOP payment substantial amount of population is still under the poverty line and 31% of the population use OOP payment method for obtaining health service and the increase in total health expenditure in spite of increment in the GDP, inadequate coverage of the CBHI system and lack of initiation of SHI for health has still made the minimization of the OOP payment for health unsatisfactory (11).

2.3. Determinants of catastrophic health expenditure

According to meta-analysis done from 38 papers the main determinants of catastrophic expenditure were found to be age of the household head, location of the household, utilization of private health facilities, health insurance coverage, utilization of health care service, hospitalizations, wealth quintile and presence of elderly and children in the household (34). So, different studies that have been assessed for the determinant factors of catastrophic expenditure will be discussed below.

According to a comparison study done involving America and South Korea regarding old aged people percentage of respondents with catastrophic out-of-pocket medical expense was 5.8% in the US and 3.0% in South Korea, respectively (35).

On the report of a study in China the decrease in the level of impoverishment was from 6.16% to 3.03% in rural areas and in urban areas it decreased from 8.46% down to 7.81% showing more impoverishment in urban area of residence. The difference in impoverishment rates across the income quintiles were increasing. The study analysis also showed that households with two or more members with chronic illness were more likely to incur CHE and impoverishment than households with no members suffering chronic illness (36).

Study in India also shows that the incidence and intensity of CHE were higher for the poorer households (9.61%, 60.2%) than the rich (18.6%, 28.3%) and incidence of CHE was higher among the households with at least one child aged less than 5 years, one secondary educated female member, one elderly person, and if at least one person in the household visit a private health facility for treatment. The incidence was also higher among households with members having chronic illness, living in a rural residence, and if members had more than 20 days duration of stay in the hospital (27).

In our continent Africa, a study in Zimbabwe found that household size, consumption, residing in urban areas, and having inpatient care were the major determinants of CHE. One more member in the household was associated with an 8.4% increase in odds of incurring CHE. The incidence of CHE was 13.4% in the poorest quintile when comparing with 2.8% in the richest. All other variables kept equal, living in urban areas was associated with 48.5% higher value of experiencing CHE. Having inpatient care was associated with 6.03 times higher risk of incurring CHE (30).

Coming to Malawi Households in the richest income quintile had 2.94 times greater chance of incurring catastrophic health expenditures compared to households in the poorest income quintile. Households in rural areas had 5.13 times more chance of incurring catastrophic expenditures compared to urban households and households in central region had 3.54 times more chance of incurring catastrophic health expenditures. Households headed by young household heads had a reduced chance of incurring CHE. For example, households with household heads who were in the 46 to 55 age group had a 43% less chance of incurring CHEs than households headed by

household heads who were over 56 years old. In addition having at least one house hold member hospitalized increased the incidence of CHE (31).

In Kenya the poor experienced the highest incidence of catastrophic expenditures (17.74) at 10% threshold than the richest (13.72).Four percent of the households who used health services were impoverished, the highest impoverishment (6.1%) occurred in the middle quintile, and the lowest impoverishment in the poorest quintile showed the incapability of the poorest of the poor to draw resources from basic needs and those who did not have any form of insurance experienced higher incidence of catastrophic health expenditures (11.3) than those who had (10.2) (32).

In Ethiopia according to a study done in the western pastoral community it was found that Female household head (AOR = 2.92; 95% CI: 1.44, 5.93) and household with chronic illnesses (AOR = 3.93; 95% CI: 1.78, 9.14) were positively related with catastrophic payment while households with adult member in household (AOR = 0.32; 95% CI: 0.16, 0.63) were negatively related (37).

In addition many studies in Ethiopia including the specific disease expenses showed that catastrophic payment incidence is seen more among the lowest consumption quintiles than the higher consumption quintiles (38) (33).

2.4. Conceptual framework

The conceptual frame works shows the relationship between the dependent variable i.e. CHE and the independent variables defined from various literatures i.e. socio-demographic variables, location of the household, utilization of private and non-governmental health facilities, health insurance coverage, utilization of health care service, hospitalizations, and presence of elderly and children in the household and age of the household head.

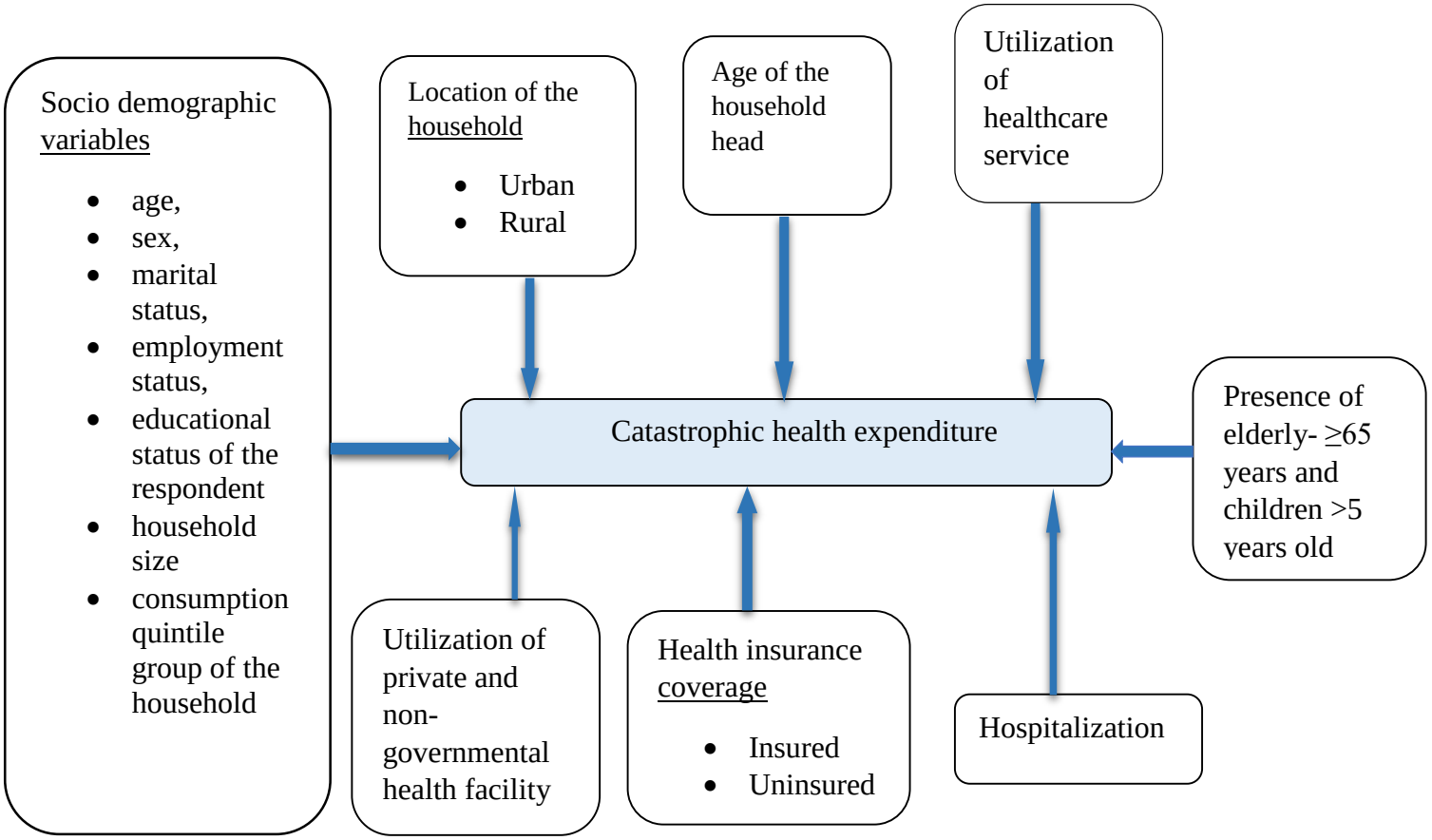

Figure 1.*Conceptual framework for out of pocket, assessing catastrophic health expenditure in Ethiopia, 2023*

Chapter 3: Objective

3.1. General objective

- ✓ To assess catastrophic and impoverishing out-of-pocket health expenditure in Ethiopia, 2023 from the 2018/19 socioeconomic survey.

3.2. Specific objectives

- ✓ To determine the level of catastrophic health expenditure due to out-of-pocket payments in Ethiopia.
- ✓ To assess the impoverishment level due to out-of-pocket health expenditure in Ethiopia.
- ✓ To identify determinants of catastrophic health expenditure in Ethiopia.

Chapter 4: Methodology

4.1. Data source

A secondary data from Ethiopian socioeconomic survey 2018/19 was used investigate the catastrophic and impoverishing effect of OOP health expenditure on households in Ethiopia.

4.2. Basic information of the survey

The Ethiopian Socioeconomic Survey (ESS) is joint work between the Central Statistics Agency of Ethiopia (CSA) and the World Bank Living Standards Measurement Study- Integrated Surveys of Agriculture (LSMS-ISA) project. The aim of this survey is to cover multi topic household data which is also consistent with the household consumption expenditure survey.

4.2.1. Study setting

The survey was conducted from September 2018 to August 2019. It was done at a national and sub-national level including the 9 regions and the 2 administrative cities.

4.2.2. Study design

This survey used a descriptive study design to illustrate the variables included.

4.2.3. Study populations

It has collected information from sampled enumeration areas and household members aged above 18 found in all the 9 regions and 2 administrative cities of Ethiopia with a response rate of 90% and proxy responses were avoided as much as possible when personal information was collected in household surveys.

The survey covered all residential households excluding hospitals, prisons, school dormitories and military barracks.

4.2.4. Sample size

The survey totally planned interviewing 7,527 households from 565 enumeration areas (EAs). From rural AgSS, 316 EAs were sampled and from the urban EAs, 249 were sampled.

4.2.5. Sampling technique

The Sampling for ESS4 was based on updated CSA 2018 pre-census cartographic database of EAs. The ESS4 survey used **a two-stage stratified probability sampling technique**.

The first stage of sampling in rural areas entailed using simple random sampling (SRS) to select EAs from the sample for the 2018 AgSS EAs (selected based on probability proportional to the size of population (PPS) from the sample of rural EAs, which is stratified by zone).

The first stage sampling for urban areas was choosing EAs directly from the urban EAs within each region by using probability proportional to size (PPS) in standard manner. This was designed to automatically produce a proportional allocation of the urban sample by zone within each region. Once the samples EAs were selected, they were categorized as urban or rural using power allocation, which is closer to proportional allocation.

The second stage sampling was using systematic random sampling to choose households to be surveyed in each EA. 10 agricultural households were selected from the rural EAs as a subsample of the households selected for the AgSS11 and from the non- agriculture households listed in each EA specified, 2 nonagricultural households were selected.

For urban areas, a total of 15 households were selected per EA without considering the households' economic activity. The households were selected using systematic random sampling from the total households present in that specific EA. A total of 7527 households were sampled for ESS4 based on the discussed sampling procedure. But since the response rate was 90% the total respondents were **6770 HHs with 29503 individuals**.

4.2.6. Data collection method and instruments

The data was collected by interviewing the respondents using Survey Solutions CAPI (Computer Assisted Personal Interview) involving numerous actors in government, academia, and the donor community in drawing up, conducting, and analyzing the results of the survey with structured questionnaire which was prepared in both Amharic and English language.

The survey included 5 types of questionnaire i.e. household questionnaire, community questionnaire and 3 agricultural questionnaires.

The household questionnaire elicits information on education; health (including anthropometric measurement for children); labor and time use; financial inclusion; ownership of and user rights in assets; household nonfarm activities; entrepreneurship and food and nonfood expenditures; safety nets; food security and shocks; housing conditions; credit; tax and transfer; physical and financial assets and other sources of household income.

The health part of the questionnaire included Health problems, types of injury/illness, medical assistance/consultation, health insurance, disabilities, vital registration (birth certificate), breast feeding, and anthropometrics (children 6- 59 months) (39) .

From these, the household questionnaires containing the socio demographic variables were used in addition cost data and health data were used from it.

4.2. Data processing and analysis techniques

After data acquisition from the World Bank micro data website in excel format it was exported in to STATA format and was labelled for each variable. Then it was assessed and cleaned for outliers. Since the unit of analysis used was household the socio-demographic, health and health cost data were collapsed with mean and median values then merged.

Following this descriptive statistic method of analysis (i.e. frequency, mean, median etc.) was computed to explain the socio-demographic, health and health related cost variables. Then the catastrophic and impoverishing health expenditure was calculated by the wagstaff and vandoorslaer and xu.et.al methodology. Then after, bivariate analysis was computed to determine the significance level of association of each factor in the conceptual framework.

Following this binary logistic regression was computed to assess the determinant factors of catastrophic health expenditure (prob > chi2). At last the finding has been presented using a table, bar graph, and pie chart accordingly.

4.3. Study variables

4.3.1. Dependent variables

- Catastrophic health expenditure

4.3.2. Independent variables

- Socio-demographic variables: age, sex, marital status, employment status, educational status of the respondent and wealth quintile group of the household
- Household size
- Location of the household
- Utilization of private and non-governmental health facilities
- Health insurance coverage,

- Hospitalizations
- Presence of elderly and children in the household
- Age of the household head
- Health care utilization

4.4. Measurement of Outcome

Overall five aspects of catastrophic expenditure were analyzed in this paper: (I) incidence of catastrophic health expenditure (II) intensity of catastrophic health expenditure, (III) poverty headcount (IV) poverty gap and (V) determinants of catastrophic health expenditure.

4.4.1. Incidence and intensity of catastrophic health expenditure

Wagstaff and van Doorslaer Methodology

The incidence of CHE indicates the percentage of households that faces catastrophic health expenditure. It is calculated using the catastrophic payment headcount which is the proportion of OOP healthcare expenses that surpass a certain threshold in relation to the household consumption expenditure

$$H= \frac{1}{N}\sum CHEi$$

$$\text{CHE}= \frac{OOP\ \ health\ expenditure}{Household\ non-food\ expenditure\ or\ total\ consomption\ expenditure}$$

Where H=catastrophic headcount

N=sample size

CHE=catastrophic health expenditure

The CHE is defined when the above ratio is greater than the chosen cutoff threshold which might vary according to country's context (5%, 10%, 15%, 20%, 25%, and 40% of both total consumption expenditure and non-food expenditure). However the incidence does not indicate by how much percentage it is causing catastrophe so the intensity of catastrophic expenditure (catastrophic expenditure overshoot) can be calculated by the formula shown below

$$O= CHEi\{(\frac{Ti}{Xi}) - Z\}$$

Where O= catastrophic expenditure overshoot

Ti=OOP expenditure for health

X= Household consumption expenditure or household non-food expenditure

Z= threshold budget share

The threshold represents the point at which household OOP expenditures can impose a severe disruption to basic living conditions and the specific threshold value can vary when the denominator for calculating Head count is either total income/expenditures or capacity to pay.

The measurement that relates the incidence and intensity of CHE is the mean positive overshoot (MPO). It calculates the mean percentage of OOP health expenditure that surpasses the threshold among households incurring CHE.

$$MPO = \frac{O}{H}$$

Xu. Et.al Methodology

This methodology defines catastrophic expenditure from capacity to pay. Health expenditure is seen as catastrophic if the total health expenditure of a household equals or greater than 40% of the total household's capacity to pay.

Capacity to pay is calculated using consecutive steps. First equivalent household size will be determined by calculating the power of the actual household size with β which is obtained from regression equation (β =0.56)

$$eqhhsize = HHsize^{\beta}$$

Then equivalent food expenditure is calculated by dividing food expenditure for equivalent household size: $eqfoodexp = \frac{foodexp}{eqhhsize}$

Then the food expenditure share ($foodexph$) for each household will be determined by dividing the food expenditure with total household expenditure

$$foodexph = \frac{foodexp}{totHHexp}$$

Then the household food expenditure as share of total household expenditure in between 45th and 55th percentile across the whole sample will be determined. This percentile range defines the poverty line.

Next household subsistence expense (SEi) is calculated by multiplying the equivalent household size ($eqhhsize$) by the poverty line (Pline)

$$SEi = eqhhsize * Pline$$

Finally household capacity to pay ($CTPi$) is calculated as;

$CTPi = TotalHHexp - SEi \ \ when\, SEi \leq foodexph$ Or

$CTPi = TotalHHexp - foodexph\, when\, SEi > foodexph$

4.4.2. Impoverishing health expenditure

Wagstaff and van Doorslaer Methodology

Impoverishing health expenditure is measured by Poverty headcount (denoted Hp) and poverty gap (Gp). Hp determines the number of households living below the poverty line as a proportion of all households, and the poverty intensity (Gp) measures by how much a household is far below the poverty line.

$$Hp = \frac{1}{N} * \sum Bi$$

Where Bi is defined when OOP health expenditure (Ei) < poverty line (Z)

$$Gp = \frac{1}{N} * \sum Di \text{ , where } Di = Ei - Z$$

Normalized mean positive Gp (NmGp) can be calculated as the average poverty gap of the poor divided by the poverty headcount*:* $NmGp = \frac{Gp}{Hp}$

4.4.3. Determinants of catastrophic health expenditure

To assess the determinant factors of the incidence of CHE multivariable binary logistic regression method of analysis was computed after checking for assumptions of logistic variables mentioned above. Then results with p value < 0.05 and odd ratio other than 0 values were taken to conclude the study.

4.5. Operational definition

Out of pocket expenditure: expense incurred by a household or individual at the point of service utilization provided by health professional without reimbursement from a third party.

Catastrophic health expenditure: high amount of out of pocket expense incurred for health as a share of household income which is greater than specific threshold of non-food or total expenditure, and capacity to pay.

Impoverishing health expenditure: out of pocket health expenditure that leads a household living standard below the national or international poverty line.

Capacity to pay: the amount that is defined from household after subtracting the expenses on basic needs from the total household consumption expenditure.

Non-food expenditure: expenses spent on goods and services other than food.

Enumeration area; it is a land that is divided in to areas for collecting a census data.

4.6. Ethical consideration

Since all the data was available online there was no need to obtain permission letter but the data was accessed after filling the access agreement form which obliges to cite the data owner (i.e. Central Statistical Agency) and to submit the copy of the finding of the study to the Central Statistical Agency and the Development Data Group Division of the World Bank.

The owner's information was also stated as "the data are available through the CSA web site: http://www.csa.gov.et/ or http://www.statsethiopia.gov.et/ or through the World bank micro data library website: https://microdata.worldbank.org/ and Users do not need to obtain the permission of the CSA to receive a copy of the data but will be asked to fill in a data access agreement. In this agreement, users agree to: (a) cite the Central Statistical Agency of Ethiopia as the collector of the data in all reports, publications and presentations; (b) provide copies of all reports publications and presentation to the Central Statistical Agency and the Development Data Group Division of the World Bank and (c) not pass the data to any third parties for any reasons."

The confidential variables of the data were names of the respondents in the household and community questionnaires, constituency and village names, descriptions of agricultural field locations and household dwellings, phone numbers of household members and their reference

contacts, agricultural field locations and GPS-based dwelling, names of the children of the head/spouse living in another place, names of the household members not alive, names of individuals listed in the network roster, and names of field staff. To maintain confidentiality, this information was not included in the ESS public use data.

In the survey manual it also states that "The setting of the questionnaire administration should be relatively private. Some of the questions asked were personal and private ones. You should respect the right of the respondents for privacy. This is important especially when talking about income and health matters. Except your field supervisor or people from the ESS management team in Addis Ababa no one should come with you for interview. If ESS staffs do accompany you to an interview, you should make sure to introduce the staff member to the respondent, make the purpose of the presence of the ESS staff member clear to the respondent. Mostly, the ESS staff will be present for monitoring the quality of your work and assist and support you in effectively carrying out your assigned tasks. The field supervisors are ordered not to interfere when you administer the questionnaire to the survey household respondents, but after finishing will discuss with you in private any issues relating to your administration of the questionnaire. If you face a technical problem or any other problem on which the field supervisor help, you are free to ask before leaving the household, but not in the presence of any household members.
Any other persons unrelated to the ESS or to the household should not be with you while you are introducing yourself to the household, nor should they be present during conducting the interview. If such individuals are present when you start an interview, you must politely ask them to leave to respect the privacy of the survey household. If they cannot do it at that time, you should make the interview for later time or move to a more appropriate place, when or where privacy can be assured. In the event that the respondents ask you that they want to be joined by a non-household member, you must respect their need. For those aged 10 years and older questions should be asked directly to the respondent. If you need to collect information on younger children, their mother or guardian should be asked on their behalf. Administer the questionnaire only as a household member.
It may also be possible that the household member will be absent from the household for the entire period during which you are conducting the ESS administration. Taking information for absent individuals will be problematic, as they will not be able to respond to questionnaire themselves. For these members, you will have to rely on the household head or other adult member of the household."

For the questionnaire translation it is stated that the questions should be administered in the language that the respondent speaks and understand well.

Concerning the beneficence and non- maleficence issue, this study provided empirical evidence for responsible bodies to take actions with respecting their privacy and it did not cause harm to any concerned bodies.

If any additional information is sought then the manual, basic information and questionnaires of the survey in English and Amharic language are available at the World Bank micro data library website: https://microdata.worldbank.org.

4.7. Dissemination plan

The finding of this study will be submitted and presented to Addis Ababa University College of Health Science, School of Public Health, and department of Health Economics and to the Central Statistical Agency and the Development Data Group Division of the World Bank. The result will also, disseminated through publication on Addis Ababa University Digital library research catalog page. It will also be submitted to respective health institutions and other concerned bodies working on financial risk protection.

Chapter 5: Result

5.1. Socio-Demographic and economic characteristics

The survey was conducted from 6770 households having 29503 individuals with 14319(48.5%) males and 15184(51.5%) females in all the 9 regions. Those under the age of 15, between 15 and 64 and above 64 were 11,940(40.47%), 16,584(56.2%) and 979(3.32%) respectively.

The average household size at national level was found to be 4.24 with Somalia region taking the lead by mean household size of 5.69 followed by SNNP (4.57) and Gambella (5.47). 54 % of the HHs (3655) lived in the urban areas whereas the remaining 46 %(3115) lived in the rural areas.

Regarding their marital status 45.4% of the individuals were single and 45.3% of them were married, from these number of Households 1594(54.2%) of them were illiterate and employment status for 12 month preceding the survey was 1.5%.

Table 1. *Surveyed Household characteristics across each region of Ethiopia 2018/19*

Region	Av HH size	Number by sex (%) Male	Female	Rural/urban HHs (%)		Literacy	Employment status (%)
Tigray	3.79	1309(47.3)	1457(52.7)	393(58.2)	283(41.9)	1468(61.2)	1.49
Afar	4.13	1169(50.8)	1133(49.2)	299(46.4)	225(53.6)	737(39.2)	1.02
Amhara	3.81	1447(48.1)	1561(51.9)	479(63.9)	271(36.1)	1300(50.7)	1.15
Oromia	4.45	1705(49)	1778(51)	453(60.2)	300(39.8)	1475(49.7)	1.86
Somalia	5.69	1772(50.7)	1723(49.3)	355(58.2)	255(41.8)	1237(39.3)	0.64
Benishangul gumuz	4.03	760(50.3)	751(49.7)	169(46.4)	195(53.6)	748(57.7)	1.4
SNNP	4.57	1594(48.3)	1704(51.7)	422(61.1)	269(38.9)	1517((53.2)	0.56
Gambella	4.47	1127(49.9)	1133(50.1)	195(39.4)	300(60.6)	1306(66.6)	0.57
Harar	3.76	1010(48)	1093(52)	190(42.2)	360(57.8)	1193(64.9)	1.18
Addis Ababa	3.79	1311(44.4)	1645(55.6)	0	778(100)	2393((88.4)	5.7
Dire Dawa	3.96	1115(48)	1206(52)	160(27.6)	419(72.4)	1422(68.5)	1.5
National	4.24	14319(48.5)	15184(51.5)	3115(46)	3655(54)	14796(57.6)	1.5

Based on their real per adult equivalent total consumption, households were sorted in increasing order and grouped in to 5 quintiles, with quintile 1 and 5 depicting the poorest and richest 20% households respectively.

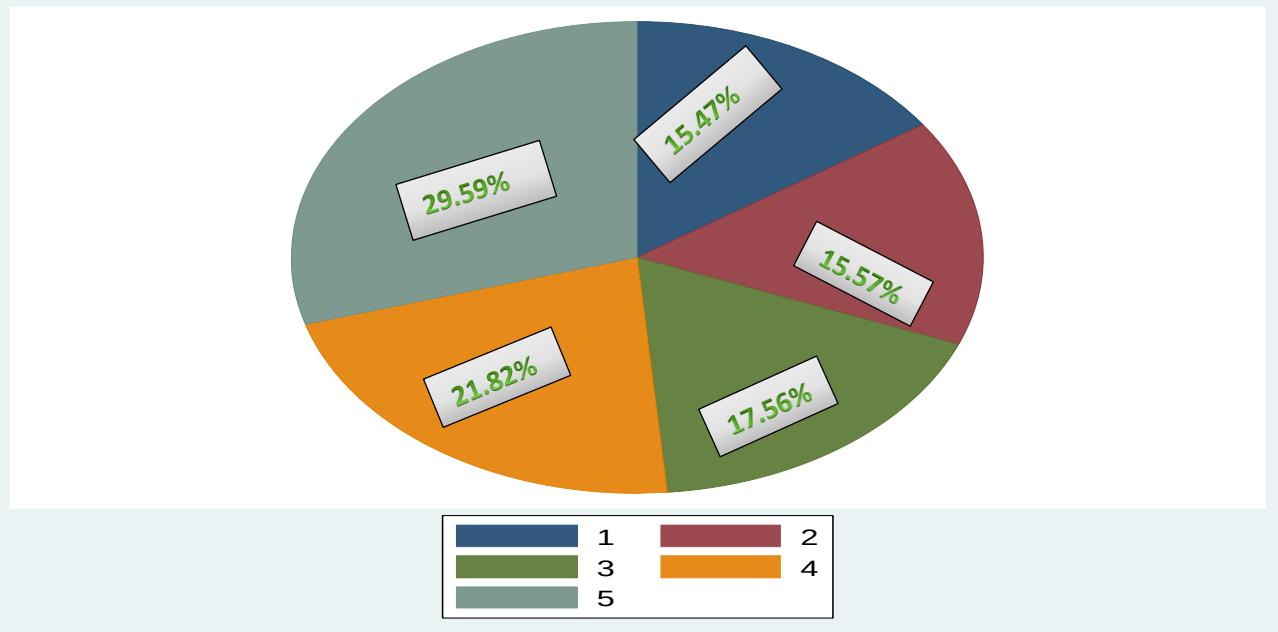

Figure 2. *Consumption quintile of surveyed households in Ethiopia 2018/19*

5.2. Health status and health related costs

From all the households 2727(40.3%) of them reported at least one member have been sick 1 months preceding the survey with Tigray (52.9%) taking the leading percentage followed by Amhara (50.5%). From these households who needed an appropriate remedy for their sicknesses were 2484(91.1%) households.

When coming to computing the mean national total consumption per adult equivalent it was found to be 21,880 ETB whereas the Mean OOP health payment per adult equivalent and Share of OOP payments to total consumption were 130.10 ETB and 0.89% from the total cost respectively.

Table 2. *Self-reported illness, health seeking behavior and consumption of surveyed households across each region of Ethiopia 2018/19*

Region	Self-reported	Health seeking behavior	Mean total consumption per adult equivalent (ETB)	Mean OOP per equivalent (ETB)	Share of OOP payments to total consumption %

	illness by HH		adult equivalent (ETB)		
Tigray	226 (52.9%)	197 (87.2%)	20,616.998	88.47	0.46%
Afar	243 (46.4%)	229 (94.2%)	21,516.246	93.68	0.58%
Amhara	379 (50.5%)	336 (88.6%)	16,003.2	94.57	0.85%
Oromia	328 (43.6%)	311 (94.8%)	18,366.73	106.7	0.67%
Somalia	185 (30.3%)	195 (>100%)	18,230.528	109.75	1.1%
Benishangul gumuz	118 (32.4%)	197 (>100%)	20,904.39	438.31	2.28%
SNNP	209 (30.3%)	211(>100%)	17,718.683	175.74	1.97%
Gambella	262 (52.9%)	216 (82.4%)	21,482.659	174.36	1.13%
Harar	225 (40.9%)	188 (83.5%)	28,739.535	78.67	0.46%
Addis Ababa	347 (44.6%)	280 (80.7%)	31,491.207	106.08	0.46%
Dire Dawa	205 (35.4%)	197 (96.1%)	26,204.927	104.63	0.49%
National	2727(40.3%)	2484(91.1%)	21,880.51	130.1	0.89%

Self-reported illness and health seeking behavior was found to be higher among the middle consumption quintiles. In addition the mean total consumption and mean OOP health payment per adult equivalent was increasing as one goes from the lowest consumption quintile to the highest one. On the contrary share of OOP health payments to total consumption was higher among the poorest consumption quintiles.

Table 3. *Self-reported illness, health seeking behavior and consumption of surveyed households across their consumption quintiles 2018/19*

Consumption quintile	Self-reported illness of at least one member in the household (%)	Health seeking behavior of at least one member in the household (%)	Mean total consumption per adult equivalent (ETB)	Mean OOP per adult equivalent (ETB)	Share of OOP payments to total consumption %
1	421(40.2%)	387(36.9%)	5036.39	84.76	1.86%
2	417(39.6%)	396(37.6%)	9074.56	105.31	1.20%
3	478(40.2%)	449(37.8%)	13235.26	98.28	0.77%
4	611(41.4%)	577(39.1%)	19582.7	138.46	0.72%
5	800(39.9%)	724(36.2%)	44250.13	179.57	0.46%

From all households the national percentage of the dependent age groups was 36.9% with Addis Ababa having the largest percentage (57.19%). The annual percent of hospitalization of at least one person in the household was 49.87 and it is highest in the Amhara region with 57.86 percentages.

From those seeking care the ones who got health service from private and non-governmental facilities were 30.47 % of the households and proportion of households having health insurance coverage was 26.08 with Harar being the leading region with 54.54 proportions of households.

Table 4. *Health related variables to assess catastrophic health expenditure of surveyed households across each region 2018/19*

Region	Presence of elderly(>65 years) and child(<5 years) in the HH %	Hospitalization of at least one HH member %	Presence of utilization of private and non-governmental health facilities %	Proportion of Health insurance coverage
Tigray	36.39%	44.53%	22.33%	41.42
Afar	55.15%	46.56%	36.83%	26.72
Amhara	50.4%	57.86%	36.13%	34.26
Oromia	53.78%	51.39%	36.25%	17.66
Somalia	44.42%	45.41%	27.05%	17.05
Benishangul gumuz	39.29%	53.85%	30.49%	16.48
SNNP	45.15%	46.70%	26.48%	10.28
Gambella	54.34%	57.78%	38.98%	17.17
Harar	48.54%	49.81%	25.81%	54.54
Addis Ababa	57.19%	53.98%	30.21%	33.67
Dire Dawa	52.85%	40.41%	25.22%	12.78
National	36.39%	49.87%	30.47%	26.08

5.3. Catastrophic health expenditure

5.3.1. Incidence and intensity of catastrophic health expenditure

National catastrophic health expenditure using Wagstaff and van Doorslaer Methodology by taking 10% threshold as a share of total household consumption expenditure was 1.49% with Benshangul-Gumuz, SNNP and Amhara being the top three with 4.12, 3.76, 1.73 percent. The mean intensity of national catastrophic consumption expenditure or overshoot value was 20.36%. Regions with higher intensity were Gambella, Somalia and Dire-Dawa. In addition the mean

percentage of OOP health expenditure that surpasses the threshold among households incurring CHE was 46.68.

Meanwhile computing catastrophic health expenditure as a share of non-food expenditure using 40% threshold was 4.69% and the average value of overshoot was 2.29% and the mean positive overshoot value was 53.86.

Other than the above one the xu.et.al method was applied to determine the catastrophic health expenditure by determining the capacity to pay level of each household and it was found that 2.48% of the households incur catastrophic health expenditure.

Table 5. *Incidence, intensity and mean positive overshoot of health consumption expenditure of surveyed households across each region of Ethiopia 2018/19*

Region	CHE incidence(as a share of total consumption) %	Mean overshoot %	Mean positive overshoot	CHE incidence(as a share of non-food consumption expenditure)%	Mean overshoot per thousand	Mean positive overshoot	CHE using capacity to pay %
Tigray	0.74%	4.22%	27.04	1.92%	8.51	48.36	1.78%
Afar	1.15%	9.58%	44.99	3.43%	11.57	57.48	1.53%
Amhara	1.73%	10.76%	37.65	5.91%	30.73	51.81	3.46%
Oromia	1.06%	6.59%	35.15	5.44%	7.18	43.59	1.59%
Somalia	1.64%	30.17%	41.84	4.92%	19.69	52.29	2.29%
Benishangul gumuz	4.12%	23.46%	56.68	15.93%	49.58	61.22	6.32%
SNNP	3.76%	26.48%	52.52	7.09%	17.7	56.88	5.49%
Gambella	1.41%	30.32%	56.95	4.47%	20.64	55.19	3.23%
Harar	0.90%	11.66%	35.2	3.27%	10.68	57.89	0.36%
Addis Ababa	0.38%	27.86%	50.32	1.67%	7.03	41.77	1.67%

Dire Dawa	0.52%	29.53%	59.56	1.9%	20.7	57.92	0.69%
National	**1.49%**	20.36%	46.68	**4.69%**	22.92	53.86	**2.48%**

Incidence of CHE was found to be higher among households with lower consumption when using the total health consumption expenditure using 10% threshold. The incidence seems to decrease as one goes from the lowest to the highest consumption quintile level.

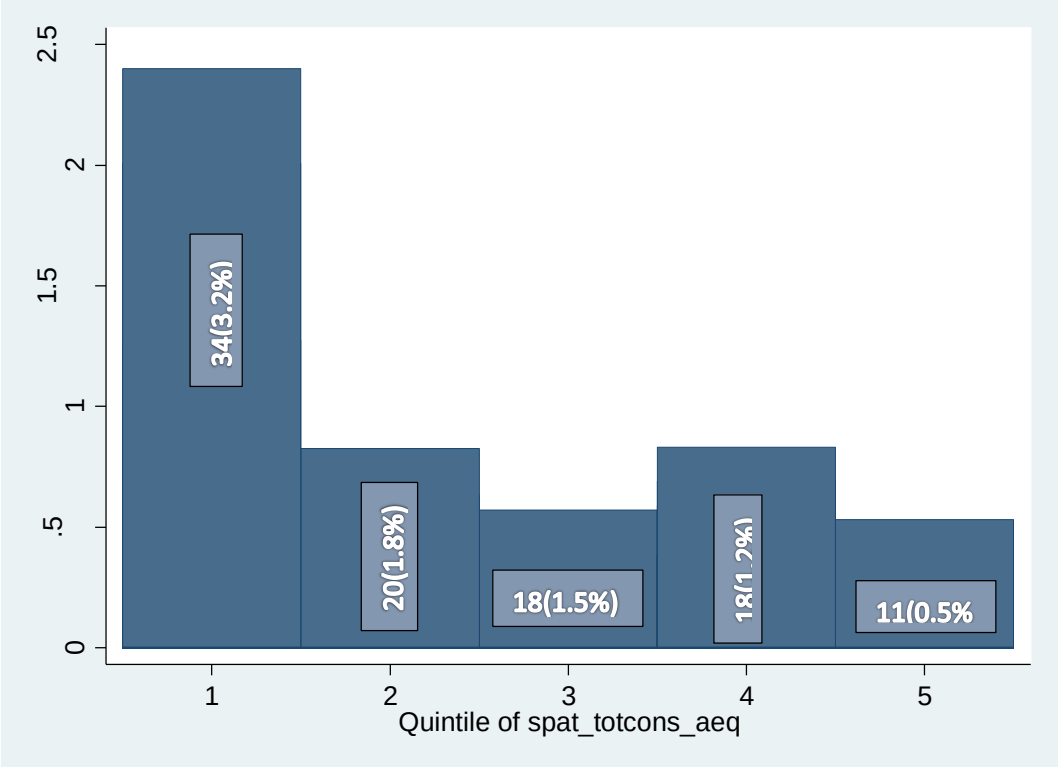

Figure 3. *Incidence of CHE among each consumption quintiles of surveyed households in Ethiopia 2018/19*

5.4. Impoverishing health expenditure

Following the steps listed below (xu.et.al methodology) the poverty line was determined to be 7338 ETB.

$$foodexph = \frac{foodexp}{totHHexp}$$

Where $foodexph$ - food expenditure share of each household

$foodexp$ - Total food expenditure of each household

$totHHexp$ - Total household expenditure

Then the household food expenditure as share of total household expenditure in between 45th and 55th percentile across the whole sample was determined. This percentile range defines the poverty line. So taking the average value of this range was taken as a poverty line for this study.

After this households who were impoverished due to OOP health expenditure were 0.83% of the whole population with SNNP being the 1st than the rest with 1.88%. The intensity of impoverishment level was on average 2490 ETB from the poverty line. The normalized mean positive intensity was 1.46.

Table 6. *Poverty headcount and intensity of poverty due to health expenditure of surveyed households across each region in Ethiopia 2018/19*

Region	Poverty headcount(Hp) %	Poverty intensity(Gp) ETB	Normalized mean positive Gp (NmGp)
Tigray	0.74%	3419.76	1.46
Afar	0.38%	3409.5	0.94
Amhara	0.02%	1950.49	0.49
Oromia	0.27%	2104.63	0.48
Somalia	0.16%	2282.79	0.45
Benishangul gumuz	0.82%	686.67	0.11
SNNP	1.88%	2570.06	0.91
Gambella	1.01%	2687.99	0.85
Harar	1.09%	3456.45	3.81
Addis Ababa	0.13%	1210	0.19
Dire Dawa	0.52%	2963.66	0.71
National	**0.83%**	2489.59	1.46

When IHE was assessed among each consumption quintiles, only the 2 with lowest consumption quintiles incur impoverishing health expense whereas the richest 3 do not have health expense that leads them to become impoverished.

Table 7. *Impoverishing health expenditure among each consumption quintile in Ethiopia*

Consumption quintiles	Impoverishing health expenditure	
	Number	Percentage
1	44	4.2
2	12	1.14
3-5	0	0

5.5. Determinants of catastrophic health expenditure

First bivariate analysis was computed for the different socio-demographic, socioeconomic and other variables to determine those to be computed with binary multivariable logistic analysis then household residence, health service utilization, hospitalization, private facility use, being insured for health and the consumption quintile group of the household had significant association with CHE($p<0.05$).

Table 8. *Bivariate analysis of CHE as a share of 10% of total household expenditure*

Variables		CHE as a share of 10% of total household expenditure	
		Number	COR(95% CI)
Household residence	Urban	3655(54%)	6.2***(4.7****, 1.2*)
	Rural	3115(46%)	1
Health service utilization	Yes	2484(91.1%)	1.7**(1.2***, 2.31**)
	No	243(8.9%)	1
Private facility use	Yes	2063(30.47%)	1.6**(9.9***, 2.3*)
	No	4707(69.53%)	1

Hospitalization	Yes	3376(49.87%)	1.39**(8***, 1.97**)
	No	2994(50.13%)	1
Health insurance coverage	Yes	1766(26.08%)	1
	No	5004(73.92%)	5***(1.2**, 9.5****)
Consumption quintiles	Q1	1	1
	Q2	2	1.9**(5** , 6**)
	Q3	3	1.58**(3.1** , 9***) ,
	Q4	4	1.4**(5.2** , 1**)
	Q5	5	5***(7***, 3.3***)

After this binary multivariable logistic regression was done to determine which factors were associated with incurring catastrophic health expenditure at a share of total household expenditure with 10% cut off point.

After running the regression it was found that increased rate of health service utilization, hospitalization, being insured and consumption quintile level had significant relation with incurring catastrophic health expenditure. In determining their correlation rate of health service utilization and hospitalization had positive correlation while being insured and consumption quintile level were negatively correlated with household's catastrophic expenditure when using 10% threshold level as a share of total expenditure.

Households who had more facility visit (AOR=2.45,95%CI;1.6- 3.8) had increased odds of facing CHE as compared to those having less facility visit and also having member being hospitalized (AOR=1.9,95%CI;1.19- 3.16) had increased odds of facing CHE. Whereas, there is a decreased likelihood of facing CHE among those who were insured for health (AOR= 0.58, 95%CI; 0.35- 0.97) and those who are in the richest wealth quintile group (AOR=0.6, 95%CI; 0.47- 0.65).

Table 9. *Binary multivariable logistic regression of CHE as a share of 10% of total household expenditure 2018/19*

Variables		CHE as a share of 10% of total household expenditure	
		Number	AOR(95% CI)
Health service utilization	Yes	2484(91.1%)	2.45 (1.56, 3.84)
	No	243(8.9%)	
Hospitalization	Yes	337650.13%))	1.9 (1.19 , 3.16)
	No	2994(49.87%)	
Health insurance coverage	No	5004(73.92%)	5.8*(3.53*, 9.7*)
	Yes	1766(26.08%)	
Consumption quintiles	Q1	1	
	Q2	2	0.362* (0.101*-1.29*)
	Q3	3	0.801* (0.291*-2.20*)
	Q4	4	0.62* (0.199*-1.539*)
	Q5	5	5.5*(4.7*,6.5*)

Chapter 6: Discussion

The study as a whole assessed the catastrophic and impoverishing health expenditure level and its determinants at national and sub national level. It was then found that 1.49% of the households and 0.89% of them faced CHE and IHE respectively at 10% threshold level. Among all nations Benishangul-Gumuz (4.12 %,) SNNP (3.76%) and Amhara (1.73%) region were the top threes to incur catastrophic health expense.

When compared to studies in the middle and low income Asian countries like India (CHE=16.51% with an intensity of 34.08%), Turkey (CHE=0.33%) and Bangladesh (CHE=24.6%) catastrophic health payment seems to be insignificant in our country. In addition in comparison with African countries like Kenya (CHE=11.7%, IHE=4.1%), Zimbabwe (CHE=7.6%, IHE=1.29%) and Liberia (CHE=4.2%) Ethiopia seems to be in lower catastrophic state even though there is similar health services coverage index which is 40 out of 100 for most sub-Saharan countries as stated by the 2017 UHC global monitoring report (7) (26) (32).

This lower catastrophic health expense result in Ethiopia might be a consequence of activities being done in Ethiopia in order to achieve its goal of reducing out of pocket payment for health or on the other side it might be the effect of populations not included in the study because they could not afford the health expense.

In contrast to the above literatures a study in Ethiopia showed similar outcome to the one studied using the 2015/16 household consumption expenditure survey in which 2% and 1% of the national population faced CHE and IHE respectively with Afar (5.8%), Benshangul-Gumuz (4.0%) and Harari (3.6%) being the top three ones. The minor gap might be a result of difference in sample size, technique and time period of the studies (22).

On the contrary there is a high difference in result when comparing it to meta-analysis done in Ethiopia using pooled estimate. It showed that the mean catastrophic healthcare expenditure at 10% of threshold was 40%. This result gap might be due to heterogeneity of the data and the use of pooled estimate of the Meta analysis. But it has similar finding in that the poor is more affected by the catastrophic payment than the rich which is discussed in detail when reviewing the determinant factors(33).

In this study when capacity to pay and non-food expenditure share with 40% threshold was used percentage of CHE nationally was found to be 4.69 & 2.48 respectively with Benishangul-Gumuz, SNNP and Amhara still taking the lead.

Again when comparing these study to the findings of middle income countries like turkey (CHE=0.33%) and Thailand (CHE= 2%) it is higher in significant amount whereas it is lower compared to low income country like Bangladesh with CHE value of 10.9% showing that works done regarding health expenses like fee waiver to the poor and exemption for priority services has brought positive effect in preventing catastrophic health payments (26) (28) (40) or this finding can also be attributed to low service coverage especially in regions with low CHE and IHE percentages rather than usage effective prevention methods of financial risk protection(22).

Although there is no national comparison study done in Ethiopia we can compare it to African country like Malawi with CHE percentage of 1.39. But as there is less health service coverage in Malawi compared to other sub-Saharan countries this result might not be comparable because health service utilization is more higher in this study with 91.1% (31).

In coming to discussing the determinant factors of catastrophic health expenditure households who had more facility visit (AOR=2.45, 95%CI; 1.6- 3.8) had two times increased odds of facing CHE as compared to those having less facility visit and also having member being hospitalized (AOR=1.9, 95%CI; 1.19- 3.16) had increased odds of facing CHE stipulating that there is still high level of OOP payments for receiving health care services (11).

On the other side there is a decreased likelihood of facing CHE among those who were insured for health (AOR= 0.58, 95%CI; 0.35- 0.97) and those who are in the richest wealth quintile group (AOR=0.6, 95% CI; 0.47- 0.65) still designating inequality issues to be addressed especially among the poor because the CHE seems to decrease when one goes from the poorest quintile to the richest one.

Looking at the results it is inferred that low insurance coverage for health can be one of the reasons for incurring catastrophic health payment i.e. we can see in Harari, Tigray and Addis Ababa that insurance coverage percent was higher and consequently the CHE was lower among these regions whereas it is lower in the Benishangul and SNNP regions who incur more CHE due to OOP health payment showing that expansion of the CBHI needs to be facilitated to vulnerable regions mentioned here.

Studies done in high income countries like China, America and South Korea the determinant factors were found to be old age and place of residence. These factors were not found to be determinants in this study. This gap is attributed to the difference in the socioeconomic conditions between the three countries and Ethiopia.(36) (35).

When comparing this finding with study done in neighboring country like Kenya it shows that the odds of incurring CHE increases when health insurance coverage is lower (32) indicating significant relation between insurance coverage and catastrophic health payments.

As mentioned above these findings stipulates that insurance coverage i.e. the activity of CBHI being implemented now, fee waiver and exemption services and expansion of pre-payment mechanisms should be amplified to address more societies and also the social health insurance implementation that is in a conception state should come in to an action so that vulnerability to catastrophic payments can be mitigated well (40–42).

As for the hospitalization rate, there is congruent finding with countries like India and Zimbabwe which shows increasing CHE percentage when the rate increases (27) (30). And also for health service utilization the study in Kenya have similar finding that is directly proportional to catastrophic health payment (32).

Even though it is obvious that as rate of health service utilization and hospitalization increases the expenses also increases, the risks of catastrophic and impoverishing payments can be mitigated through financial support provision to the ones who are more vulnerable i.e. people with chronic illness with different risk pooling mechanisms (43).

Regarding the poorer being the one to face the catastrophic health payment in Ethiopia, when CHE was assessed among each consumption quintile it was found that both were incurred in higher amount among the lower consumption quintiles than the rich consumption quintiles.

Findings in countries like India, Zimbabwe and Kenya also have similar results showing that the poor is more inclined to face catastrophic and impoverishing payment for health than the rich ones (27) (30) (32). And in comparison to Ethiopian studies it is different finding relative to previous study done using the 2015/2016 ICHE survey but similar with the meta analysis finding (AOR = 3.09, 95% CI: 1.63, 5.86) p-value < 0.001 (22) (33).

This indicates that in spite of the efforts made to reduce OOP payment for health by providing fee waiver and exemption service to the poor there is still inequality issue not being addressed especially in regions like SNNP and that this service needs to expanded in inadequate manner to the vulnerable society so that the country's aim of achieving UHC can be realistic one (22).

Last but not least, in comparison with the study done in western pastoral community of Ethiopia the findings was not consistent because the factors that were significantly associated with CHE were Female household head (AOR = 2.92; 95% CI: 1.44, 5.93) which was positively associated, while households who had adult household members (AOR = 0.32; 95% CI: 0.16, 0.63) were negatively associated(37). This variation can be attributed to difference in sample size, sampling technics and difference in location of the study being regional rather than national.

Chapter 7: Strengths and limitations

7.1. Strengths

- The study used different kinds of methods to calculate CHE and its determinant factors.
- Use of recently available data to assess the national level OOP catastrophic and impoverishment level.
- Studying deeper into the sub national level so that clear vision of each state level can be insured.
- The 2nd and most recent study to assess catastrophic and impoverishing health expenditure at national and sub national level.

7.2. Limitations

- The use of only medical direct cost incurred than including non-medical and indirect costs might have effect on the findings.
- The various periods referred in conducting the response of the questionnaire may have recall bias effect.
- Households not using health care service due to unaffordability were not addressed
- Costs for drug and lab tests were not mentioned in the survey which may have significant effect on the final result.

Chapter 8: Conclusion

As per the finding of the study catastrophic (1.49%) and impoverishing (0.83%) expenditure for health seems to be lower compared to sub Saharan African countries but there are still significant numbers of households facing it especially in Benishangul-Gumuz (4.12%), SNNP (3.76%) and Amhara (1.73%) regions and this is concerning issue as Ethiopia is a country who aims to achieve UHC by 2035 through its HSTP strategies.

In addition household who has health insurance coverage, lower hospitalization and health service utilization rate has low incidence of incurring catastrophic health expenditure showing that out of pocket health payment is still an issue to be addressed in most regions of our country. It is also shown that catastrophic and impoverishing health expenditure is seen more in the poor than the rich ones resulting health inequality.

Chapter 9: Recommendation

Each mentioned factors and findings above shows that policy makers, concerned governmental bodies and insurance agencies should align their focus and implementations on the different methods that assure reduction of out of pocket payment that leads citizens to face catastrophic and impoverishing health expenditure.

In addition governmental activities in the health sector should make further effort to identify and address the poor and vulnerable societies so that inequality issues which can hamper the country's development aspect in different sectors can be mitigated in a satisfying manner.

At last it is suggested for future researchers that national studies of such kind including populations that do not seek health care due to unaffordability are in place so that periodic evaluation of the country's progress in addressing reduction of OOP health payment and reduction in catastrophic health payment can be measured effectively resulting in implementation of necessary measurements by the concerned body.

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Annex

Annex I: Information

This is questionnaire extracted from the 2018/19 questionnaires based on the frame work developed from different literatures. It is extracted with the aim of providing clear view for the reader so that he/she can determine which part from the national survey is extracted and studied for this study.

Purpose of Research: This study will contribute in the determination of extent of catastrophic and impoverishing health expenditure so that essential measures can be taken for improvement at a national level by the stakeholders.

Consent: the respondents were asked their consent orally and the some statements mentioned below were explained to them.

Procedure: As it is a secondary data and all the data are available freely online the only step needed is registering on the world bank micro data website and it is also required that after acquisition of the data it is a must to deliver the findings to the CSA and world bank to their address stated in the basic information manual.

Risk/ Discomfort: as stated in the ethical consideration part the data available online does not provide any information of identity of the participant that might have risk on the respondent (i.e. name of the respondent). So this study does not have any risk.

Benefits: even though the study does not have direct benefit to the study participants it will benefit the society at a national level because it will convince policy makers and stakeholders to take appropriate measure to decrease the expenditure level

Confidentiality: As stated in the ethical consideration part the information available does not state the respondent's identity and it is strictly confidential

Right to refuse or withdraw: It is stated in the ESS manual that there is full right to refuse from participating in the survey and that they can choose not to respond to some or all questions if they do not want to give their response. They had also the full right to withdraw from the study at any time they wish, without losing any of their right.

Persons to contact: If you have any question to ask, please contact

Yamlak Bereket;  Phone; 0936753729

Annex II: Questionnaire

CENTRAL STATISTICAL AGENCY

Form ESS4-H (18/19) 11 12

2018/19 ETHIOPIAN SOCIOECONOMIC SURVEY- WAVE 4

STRICTLY CONFIDENTIAL

Part I; House hold questionnaire (filled by the supervisor)

1	2	3	5	6	7
Region	Zone	Woreda	Subcity (for rural code 88)	Kebele	Enumeration area (EA)
Code	Code	Code	Code	Code	Code
_____	_____	_____	_____	_____	_____

8			9		10
Household ID			Household Size		Rural/Urban

Code for the regions

Adama =1 Addis Ababa=2 Ambo = 3 Arbaminch = 4 Asayita =5 Assosa =6 Bahirdar =7 Asebe Teferi = 8 Debrebirhan = 9 Dessie =10 Diredawa =11 Gambela =12 Goba =13 Gondar =14 Harar =15 Hawassa =16 Hossana =17 Jigjiga=18 Jimma =19 Mekele = 20 Mizan Teferi =21 Negele =22 Nekemit =23 Shire =24 Sodo =25

Part II; Socio demographic questionnaires

1. What is [NAME]'s relationship to the head of household?

Head.....1	Uncle/Aunt.....8	Grandparents.....12
Spouse.....2	Son/Daughter in	Other
Son/daughter.....3	law.....9	relatives.....13
Grandchild.....4	Father/Mother in	Servant.....14
Father/Mother.....5	law.....10	Non relatives….15
Sister/Brother.....6	Brother/Sister in	
Niece/Nephew.....7	law.....11	

2. What is the sex of [NAME]?

   Male ☐

   Female ☐

3. How old is [NAME]? (If 5 years and over give years only. If less than 5 years in age give years and months. If less than one month put "0")

   Years ☐ months ☐

4. What is [NAME]'s marital status? _____

   Never Married……1

   Married (Monogamous)……..

   Married (polygamous)……3

   Divorced……4.

   Separated…….5

   Widowed …….6

5. Has [NAME] ever attended school?

   Yes ☐ (if this option is chosen go skip to Q6)

   No ☐

6. What is the highest grade [NAME] completed?

   _____ (in level)

Part III; Health

*For children 12 years and younger, ask their caregiver.

1. Enumerator: is [NAME] reporting for himself/herself?

   Yes ☐ No ☐

2. If the answer is 'NO' for question number 1, who is responding on behalf of [NAME]?

_____

- **Health care utilization(on weekly basis)**

3. During the past 4 weeks has [NAME] consulted a health practitioner or traditional healer or visited a health facility? (Regardless of whether sick or not)

   Yes ☐

   No ☐ (if this option is chosen go skip to Q5)

4. For what reason(s) did [NAME] consult this person? (list up to 2 reasons)

   Reason 1 _____

   Reason 2 _____

   Checkup or other preventive care (not linked to pregnancy).....1

   Prenatal checkup.....2

   Giving birth.....3

   Follow up appointment for earlier or chronic illness.....4

   Follow up appointment for earlier accident....5 — if chosen go skip to Q6

   New or acute illness.....6

   New injury.....7

   Other (specify).....8

- **Health status(on weekly basis)**

5. During the past 4 weeks has [NAME] suffered from an illness or injury?

   Yes ☐

   No ☐ (if this option is chosen skip to Q14)

6. What was the sickness/ injury [NAME] faced? List up to 2 major illnesses

   - Illness 1_____
   - Illness 2_____

Malaria.....1	Chicken Pox.....8	Heart
TB.....2	Pneumonia.....9	Problem…..14
Yellow Fever.....3	Common Cold....10	Hypertension.....15
Typhoid.....4	Injury.....11	Head
Cholera.....5	Stress.....12	ache.....16
Diarrhea.....6	Flu.....13	Diabetes.....17
Meningitis.....7		

Guinea Worm.....18	Ulcer/Stomach	Body
Dysentery..... 19	pain…23	Pains.....26
Scabies.....20	Eye	Body
Ringworm.....21	problem……..24	Swell/Wound.....27
Hepatitis	Tooth	Kidney
B.....22	problem…...25	Problem...28

- **Indirect cost**

7. Did [NAME] have to stop his/her usual activities in the past 4 weeks because of this illness/injury?

   Yes☐ No ☐

8. For how many days was [NAME] absent from usual activity due to this illness/injury during the last 4 weeks?

   Number of days _____

- **Place of Health care service**

9. Whom did [NAME] consult for this illness or injury in the last 4 weeks?

   No one.....0 (if this option is chosen skip to Q13)

   Traditional healer……..1

   Doctor.....2

   Dentist.....3

   Nurse.....4

   Medical assistant.....5

   Midwife.....6

   Pharmacist.....7

   Chemist.....8

   - For illness 1_____
   - For illness 2_____

10. Where did [NAME] receive or consult medical assistance primarily?

Hospital.....1	Clinics.....4	Pharmacy.....5
Health Center.....2		Traditional healer's home.....6
Health Post.....3		

Patient's home....7

Other (specify)...8

- For illness 1_____
- For illness 2_____

- **Expense for health service**

11. How much did [NAME] pay for the first consultation, including any medicine or test prescribed even if purchased elsewhere? If no expenses please record 0.

    Birr for illness 1 _____

    Birr for illness 2 _____

12. How long did it take to travel (one way) to your first consultation of illness?

    If consultation at patient's home put '0' then, skip to Q14

    Hour_____ minute_____

13. What was the main reason for [NAME] not consulting a healthcare provider or traditional healer for this illness/injury?

Lack of money...1	Lack of health professional.....5	Did not require medical assistant..7
Expensive.....2	Poor quality/service....6	Other (specify).....8
Too far.....3		
Do not believe in medicine.....4		

_____

- Health service utilization(in monthly pattern)

14. Has [NAME] consulted any medical assistance or consulted from health facilities or traditional healers during the last 12 months? (Regardless of whether sick or not)

    Yes ☐ No ☐

15. How many times has [NAME] consulted any medical assistance or consulted from health facilities or traditional healers during the last 12 months?

    _____ (in number)

- **Hospitalization status**

16. Were any of [NAME]'s consultations inpatient visits (i.e. [NAME] spent the night in the health facility)?

    Yes ☐

    No ☐ (if this option is chosen skip to Q18)

17. How many nights did [NAME] spend in any health facility in the last 12 months?

    _____ (in number)

- **Expense for hospitalization(yearly basis)**

18. What were the total costs of all [NAME]'s health consultations in the last 12 months, including any medicine or tests prescribed even if purchased elsewhere? If none record zero

    _____ (In birr)

- **Health insurance enrollment**

19. What type of Health insurance does [NAME] currently covered under (such as through an employer, community health insurance scheme, or private health insurance)?

    _____

    Community Based health Insurance... 1

    Private health Insurance (from financial institutions).....2

    Employer Health 3

    Don't have health insurance.....4

20. Is this member age 0- 5 years old?

    Yes ☐

    No ☐ (if this option is chosen skip to Q27)

- **Disability status**

21. Does [NAME] have difficulty seeing, even if wearing glasses? _____

    No difficulty……..1

    Have difficulty  Some difficulty……..2

    A lot of difficulty ……...3

    Cannot perform activity at all……4

22. Does [NAME] have difficulty hearing, even if wearing a hearing aid?_____

    No difficulty……..1

    Have difficulty  Some difficulty……..2

    A lot of difficulty ……...3

    Cannot perform activity at all……4

23. Does [NAME] have difficulty walking or climbing steps? _____

    No difficulty……..1

    Have difficulty  Some difficulty……..2

    A lot of difficulty ……...3

    Cannot perform activity at all……4

24. Does [NAME] have difficulty remembering or concentrating? _____

    No difficulty……..1

    Have difficulty  Some difficulty……..2

    A lot of difficulty ……...3

    Cannot perform activity at all……4

25. Does [NAME] have difficulty (with self-care such as) washing all over or dressing, feeding, toileting etc.?_____

    No difficulty……..1

    Have difficulty  Some difficulty……..2

    A lot of difficulty ……...3

Cannot perform activity at all……4

26. Using [NAME]'s usual language, does [NAME] have difficulty communicating; for example understanding or being understood? _____

No difficulty……..1

Have difficulty 

Some difficulty……..2

A lot of difficulty ……...3

Cannot perform activity at all……4

- **Estimation of household food expenditure**

How much on average do your household spends on food/food items? __ Birr per month

- **Household Non-food expenditure**

27. On average how much does your household spend on the following essential consumptions?

_____ETB in total per month

1. Utilities (electricity, water, telephone)
2. Education (School for children or self)
3. House rent
4. Valuable item
5. Social obligation
6. Other (Specify) _____

28. On average how much does your household spend on the following essential consumptions?

_____ETB in total per Year

1. Goods (properties) and utensils for the household use
2. Clothes and related (Shoe)
3. Maintenance of properties
4. Expenditure on agricultural inputs (Fertilizer, pesticide, Seeds)
5. Death related expenditure (funeral & Teskar)

Total non-food expenditure _____birr

Grand Total (Food +Non-food) _____ birr

Annex III: ፈቃድ መጠየቂያ ቅጽ

ይህ ከተለያዩ ጽሑፎች በተዘጋጀው የፍሬም ሥራ ላይ በመመስረት ከ2018/19 መጠይቆች የወጣ መጠይቅ ነው። ከአገራዊ ዳሰሳ ጥናት ውስጥ የትኛው ክፍል ለዚህ ጥናት እንደሚወጣና እንዲጠና ለአንባቢ ግልጽ እይታን ለመስጠት በማሰብ የወጣ ነው።

የጥናቱ ዓላማ፡- ይህ ጥናት በአገር አቀፍ ደረጃ በባለድርሻ አካላት መሻሻል አስፈላጊ እርምጃዎች እንዲወሰዱ ለአደጋና ለድህነት የሚዳርገው የጤና ወጪ መጠን ለመወሰን አስተዋፅዖ ያደርጋል።

ፈቃድ; ምላሽ ሰጪዎቹ ፈቃዳቸውን በቃል ተጠይቀው ከዚህ በታች በመሃል የተጠቀሰው መግለጫ ተብራርቶላቸዋል።

ሂደት፡- ሁለተኛ ደረጃ ዳታ በመሆኑ እና ሁሉም መረጃዎች በነጻ ኦንላይን ስለሚገኙ በዓለም ባንክ ማይክሮ ዳታ ድህረ ገጽ ላይ መመዝገብ ብቻ የሚያስፈልገው እርምጃ ሲሆን መረጃው ከተገኘ በኋላ ግኝቱን ለ ሲኤስኤ እና የዓለም ባንክ በመሠረታዊ የመረጃ ማኑዋሉ ውስጥ በተገለጹት አድራሻቸው።

ስጋት/ አለመመቸት፡ በስነምግባር ግምት ክፍል ላይ እንደተገለጸው በመስመር ላይ ያለው መረጃ በተጠሪው ላይ አደጋ ሊኖረው የሚችል ምንም አይነት የተሳታፊ ማንነት መረጃ አይሰጥም (ማለትም የተጠሪ ስም)። ስለዚህ ይህ ጥናት ምንም ዓይነት አደጋ የለውም።

ጥቅማ ጥቅሞች፡- ጥናቱ ለጥናቱ ተሳታፊዎች ቀጥተኛ ጥቅም ባይኖረውም ህብረተሰቡን በአገር አቀፍ ደረጃ ይጠቅማል ምክንያቱም ፖሊሲ አውጪዎችና ባለድርሻ አካላት የወጪ ደረጃን ለመቀነስ ተገቢውን እርምጃ እንዲወስዱ ስለሚያደርግ ነው።

ሚስጥራዊነት፡- በስነ-ምግባር ግምት ክፍል ላይ እንደተገለጸው ያለው መረጃ የተጠሪውን ማንነት አይገልጽም እና ጥብቅ ሚስጥራዊ ነው።

እምቢ የማለት ወይም የመውጣት መብት፡ በ ኢኤስኤስ ማንዋል ላይ በዳሰሳ ጥናቱ ላይ ላለመሳተፍ ሙሉ መብት እንዳለ እና ምላሻቸውን ለመስጠት ካልፈለጉ ለአንዳንድ ወይም ለሁሉም ጥያቄዎች ምላሽ ላለመስጠት መምረጥ እንደሚችሉ ተገልፆል። እንዲሁም ምንም አይነት መብታቸውን ሳያጡ በፈለጉት ጊዜ ከጥናቱ የመውጣት ሙሉ መብት ነበራቸው።

የሚያገኟቸው ሰዎች፡ ማንኛውም ጥያቄ ካለዎት እባክዎ ያነጋግሩ

ያምላክ በረከት; ስልክ; 0936753729

Annex IV: የመጠይቅ ቅጽ በአማርኛ

መረጃው ሀገራዊ ዳሰሳ በመሆኑ ተጨማሪ መረጃ ከተፈለገ፤መመሪያው በእንግሊዝኛ እና በአማርኛ ቋንቋ እንዲሁም የዳሰሳ ጥናቱ መሰረታዊ መረጃዎች እና መጠይቆች በአለም ባንክ የማይክሮ ዳታ ቤተመፃህፍት ድህረ ገጽ https://microdata.worldbank.org ይገኛሉ።

ይህ ከ2018/19 መጠይቆች የወጣ መጠይቅ ነው። ይህ መጠይቅ ከሀገራዊ ዳሰሳው ለይቶ ማውጣቱ ዋና አላማው የተጠናውን ፍሬ ነገር ለአንባቢ ግልጽ አድርጎ ለማሳየት ነው።

ማዕከላዊ ስታቲስቲክስ ኤጀንሲ

ቅጽ ESS4-H (18/19) 11 12

2018/19 የኢትዮጵያ ማህበረ-ኢኮኖሚያዊ ዳሰሳ

ጥብቅ ሚስጥራዊ

ክፍል I; የቤት መጠይቅ (በተቆጣጣሪው የተሞላ)

1	2	3	5	6	7
ክልል	ዞን	ወረዳ	ክፍለ ከተማ (ለገጠር ኮድ 88)	ቀበሌ	የቆጠራ አካባቢ
ኮድ	ኮድ	ኮድ	ኮድ	ኮድ	ኮድ
_____	_____	_____	_____	_____	_____

8			9		10
የቤተሰብ መታወቂያ			የቤተሰብ መጠን		ገጠር/ከተማ

የክልሎች ኮድ

አዳማ = 1 አዲስ አበባ = 2 አምቦ = 3 አርባምንጭ = 4 አሳይታ = 5 አሶሳ = 6 ባህርዳር = 7 አሰበ ተፈሪ = 8 ደብረብርሃን = 9 ደሴ = 10 ድሬዳዋ = 11 ጋምቤላ = 12 ጎባ = 13 ጎንደር = 14 ሀረር = 15 ሀዋሳ = 16 ሆሳዕና

ክፍል II; **ማህበራዊና ስነ-ሕዝብ መጠይቅ**

1. [ስም] ከቤተሰብ ራስ ጋር ያላቸው ግንኙነት ምንድን ነው?

የቤተሰብ ራስ.....1
የትዳር ጓደኛ.....2
ወንድ ልጅ/ሴት ልጅ....3
የልጅ ልጅ... 4
አባት/እናት.....5
እህት/ወንድም.....6
የኔ ልጅ/የወንድም ልጅ.....7
አጎት/አክስቴ.....8
ወንድ ልጅ/ አማች.....9
አባት/አማት.....10
ወንድም/እህት በሕግ 11
አያቶች.....12
ሌሎች ዘመዶች....13
አገልጋይ/ሰራተኛ ...14
ዘመድ ያልሆኑ….15

2. የ[ስም] ጾታ ምንድን ነው?

ወንድ ☐

ሴት ☐

3. [ስም] ዕድሜያቸው ስንት ነው? (5 ዓመት እና ከዚያ በላይ ከሆኑ ዓመታትን ብቻ ይጻፉ። ዕድሜው ከ 5 ዓመት በታች ከሆኑ ዓመታት እና ወራትን ይጻፉ። ከአንድ ወር በታች ከሆኑ "0" ያስገቡ)

ዓመታት ☐ ወራት ☐

4. የ[ስም] የትዳር ሁኔታ ምንድነው? _____

አላገባም/ችም ……1
ባለትዳር (አንድሚስት/ባል) ……2
ያገባ (ከአንድ በላይ ሚስት ያገባ) …… 3
የተፋታ/ች ……4
ተለያይቷል/ለች ……5
ባል የሞተባት ……6

5. [ስም] ትምህርት ቤት ገብተው ያውቃሉ?

አዎ ☐ አማራጭ ከተመረጠ ወደ ቁ6 ይሂዱ)

አይ ☐

6. [ስም]ያጠናቀቁት ከፍተኛው ክፍል ስንት ነው?

_____(በደረጃ)

ክፍል ሶስት; ጤና

*ከ12 አመት እና ከዚያ በታች ለሆኑ ህጻናት ተንከባካቢውን ይጠይቁ።

1. [ስም] ለራሱ/ራሷ ሪፖርት እያደረጉ ነው?

አዎ ☐ አይ ☐

2. ለጥያቄ ቁጥር 1 መልሱ 'አይ' ከሆነ፣ [ስም] ን ወክሎ ምላሽ እየሰጠ ያለው ማነው?

_____

- **የጤና አገልግሎት አጠቃቀም (በሳምንት መለኪያነት)**

3. ባለፉት 4 ሳምንታት ውስጥ [ስም] የጤና ሀኪምን ወይም የባህል ሀኪምን አማከሩ ወይንስ የጤና ተቋምን ጎብኝተዋል? (የታመሙ ባይሆንም)

አዎ ☐

አይ ☐ (ይህ አማራጭ ከተመረጠ ወደ ቁ5 ይሂዱ)

4. [ስም] ይህን ሰው ያማከሯቸው በምን ምክንያት(ዎች) ነው? (እስከ 2 ምክንያቶች ይዘርዝሩ)

ምክንያት 1 _____

ምክንያት 2 _____

ምርመራ ወይም ሌላ መከላከያ (ከእርግዝና ጋር ያልተገናኘ).....1

የቅድመ ወሊድ ምርመራ.....2

መውለድ.....3

ለቀደመው ወይም ለከባድ ህመም ቀጠሮ ለመከታተል..4

ለቀደመው አደጋ ቀጠሮ ለመከታተል....5 } ከተመረጡ ወደ ቁ6 ይሂዱ

አዲስ ወይም አጣዳፊ ሕመም.....6

አዲስ ጉዳት.....7

ሌላ (ይግለጹ).....8

- **የጤና ሁኔታ (በሳምንት መለኪያነት)**

5. ባለፉት 4 ሳምንታት ውስጥ [ስም] ህመም ወይም ጉዳት አጋጥምዋቸዋል?

አዎ ☐

አይ ☐ (ይህ አማራጭ ከተመረጠ ወደ ቁ14 ይዝለሉ)

6. [ስም] ያጋጠማቸው ህመም/ጉዳት ምን ነበር? እስከ 2 ዋና ዋና በሽታዎችን ይዘርዝሩ

• ሕመም 1_____

• ሕመም 2_____

ወባ.....1 ቲቢ.....2

ቢጫ ወባ.....3

ታይፎይድ.....4

ኮሌራ.....5 ተቅማጥ.....

....6 የማጅራት ገትር.....7

ፈንጣጣ……

….8

የሳንባ

ምች……..9

ጉንፋን/ብርድ. 10

ጉዳት/አደጋ.....11

ጭንቀት.....12 የልብ

ችግር...14

ሃይፐርቴንሽን.....15

የጭንቅላት ህመም...16

የስኪር በሽታ.....17

ጊኒ ትላትል...18

የአንጀት ህመም..... 19

እከክ.....20

ወስፋት.....21

ሄፓታይተስ ቢ.....22

ቁስለት/የጨጓራ ህመም...23

የአይን ችግር …… 24

የጥርስ ችግር... 25

የሰውነት

ህመም/መቆረጣጠም..26

የሰውነት

እብጠት/ቁስል.....27

የኩላሊት ችግር/ህመም...28

- **ቀጥተኛ ያልሆነ ወጪ**

7. በዚህ ህመም/ጉዳት ምክንያት [ስም] ባለፉት 4 ሳምንታት የተለመደ ተግባራቸውን ማቆም ነበረባቸው?

አዎ ☐

አይ ☐

8. ባለፉት 4 ሳምንታት በዚህ ህመም/ጉዳት ምክንያት [ስም] ከተለመደው እንቅስቃሴ ለምን ያህል ቀናት ቀርተዋል?

የቀኖች ብዛት _____

- **የጤና እንክብካቤ አገልግሎት ቦታ**

9. ባለፉት 4 ሳምንታት ውስጥ [ስም] ለዚህ ሕመም ወይም ጉዳት ማንን አማከሩ?

ማንንም..... (ይህ አማራጭ ከተመረጠ ወደ ቁ13 ይዝለሉ)

ባህላዊ ፈዋሽ…….1

ዶክተር.....2

የጥርስ ሀኪም.....3

ነርስ.....4

የህክምና ረዳት.....5

አዋላጅ.....6

ፋርማሲስት.....7

ኬሚስት.....8

• ለህመም 1_____

• ለህመም 2_____

10. [ስም] በዋነኛነት የሕክምና ዕርዳታን ያገገኙት የት ነው?

ሆስፒታል.....1

ጤና ጣቢያ.....2

ጤና ኬላ.....3

ክሊኒክ.....4

ፋርማሲ.....5

የባህል ህክምና ቤት.....6

የታካሚ ቤት . . . 7

ሌላ (ይግለጹ)...8

¬ ለህመም 1_____

¬ ለህመም 2_____

- **የጤና አገልግሎት ወጪ**

11. ለመጀመሪያው ምክክር ምን ያህል ከፍለዋል፣ ሌላ ቦታ ቢገዛም የታዘዘውን ማንኛውንም መድሃኒት ወይም ምርመራ ጨምሮ? ምንም ወጪ ከሌለ እባክዎን 0 ይመዝግቡ።

ለህመም 1 _____ብር

ለህመም 2 _____ብር

12. ለመጀመሪያ ጊዜ ወደ ህመምዎ ምክክር ለመጓዝ (በአንድ መንገድ) ምን ያህል ጊዜ ፈጅቷል?

ለታካሚው ምክክር ቦታ'0' ካስቀመጡ፣ ወደ ቁ14 ይዝለሉ

ሰዓት__ ደቂቃ_____

13. [ስም] ለዚህ ህመም/ጉዳት የጤና እንክብካቤ አቅራቢን ወይም የባህል ሃኪምን ያላማከረበት ዋናው ምክንያት ምን ነበር?

የገንዘብ እጥረት...1

ውድ ስለሆነ.....2

በጣም ሩቅ ስለሆነ 3

በመድሀኒት ስለማያምኑ.....4

የጤና ባለሙያ እጥረት.....5

ጥራት የሌለው አገልግሎት....6

የሕክምና ረዳት አልፈለጉም..7

ሌላ (ይግለጹ).....8

- **የጤና አገልግሎት አጠቃቀም(በወርሃዊ መለኪያ)**

14. [ስም] ባለፉት 12 ወራት ውስጥ ማንኛውንም የህክምና እርዳታ ወይም ከጤና ተቋማት ወይም ከባህላዊ ሀኪሞች አማክረዋል? (የታመሙም ባይሆንም)

አዎ ☐ አይ ☐

15. [ስም] ባለፉት 12 ወራት ውስጥ ምን ያህል ጊዜ የህክምና እርዳታን ወይም ከጤና ተቋማት ወይም ከባህላዊ ሀኪሞች አማከሩ?

_____(በቁጥር)

- **የተኝቶ ህክምና አገልግሎት ሁኔታ**

16. ከ[ስም]የተኝቶ ህክምና አገልግሎት/ ሌሊቱን በጤና ተቋም አሳልፈዋል)?

አዎ ☐

አይ ☐ (ይህ አማራጭ ከተመረጠ ወደ ቁ18 ይዝለሉ)

17. ባለፉት 12 ወራት ውስጥ [ስም] በጤና ተቋም ውስጥ ስንት ምሽቶች አሳለፉ?

_____(በቁጥር)

- **ለሆስፒታል ህክምና ወጪ(አመታዊ)**

18. ባለፉት 12 ወራት ውስጥ የሁሉም የጤና ምክክር ወጪዎች ምን ያህል ነበሩ፣ ሌላ ቦታ ቢገዙም የታዘዙ መድሃኒቶችን ወይም ምርመራዎችን ጨምሮ? ምንም ካልተመዘገበ ዜሮ ይመዝግቡ

_____(በብር)

- **የጤና መድህን ምዝገባ**

19. በአሁኑ ጊዜ [ስም] የሚሸፍኑት በምን ዓይነት የጤና መድህን ነው (ለምሳሌ በአሰሪ፣ በማህበረሰብ አቀፍ የጤና መድህን እቅድ ወይም በግል የጤና መድን)?

_____

የማህበረሰብ አቀፍ የጤና መድህን... 1

የግል ጤና መድን (ከፋይናንሺያል ተቋማት).....2

የአሰሪ ጤና መድን 3

የጤና ኢንሹራንስ የለዎትም.....4

20. ይህ አባል እድሜው ከ0-5 አመት ነው?

አዎ ☐

አይ ☐ (ይህ አማራጭ ከተመረጠ ወደ ቁ27 ይዝለሉ)

- **የአካል ጉዳት ሁኔታ**

21. መነጽር ቢያደርጉም [ስም] የማየት ችግር አለባቸው? _____

ምንም ችግር የለባቸውም……1

አንዳንድ ችግር አለባቸው …… 2

ብዙ ችግር አለባቸው …… 3

እንቅስቃሴን በፍፁም ማከናወን አይችሉም……4

22. የመስሚያ መርጃ መሳሪያ ቢለብሱም [ስም] የመስማት ችግር አለባቸው ወይ?_____

ምንም ችግር የለባቸውም……1

አንዳንድ ችግር አለባቸው …… 2

ብዙ ችግር አለባቸው …… 3

እንቅስቃሴን በፍፁም ማከናወን አይችሉም……4

23. [ስም] የመራመድ ወይም ደረጃ የመውጣት ችግር አለባቸው? _____

ምንም ችግር የለባቸውም…….……1

አንዳንድ ችግር አለባቸው …… 2

ብዙ ችግር አለባቸው …… 3

እንቅስቃሴን በፍፁም ማከናወን አይችሉም……4

24. [ስም] የማስታወስ ወይም የማተኮር ችግር አለባቸው? _____

ምንም ችግር የለባቸውም…….……1

አንዳንድ ችግር አለባቸው …… 2

ብዙ ችግር አለባቸው …… 3

እንቅስቃሴን በፍፁም ማከናወን አይችሉም……4

25. [ስም] (ራስን ከመንከባከብ ጋር) ሙሉ በሙሉ መታጠብ ወይም መልበስ፣ መመገብ፣ መጸዳጃ ቤት መጠቀም ወዘተ ችግር አለባቸው?

ምንም ችግር የለባቸውም…….……1

አንዳንድ ችግር አለባቸው …… 2

ብዙ ችግር አለባቸው …… 3

እንቅስቃሴን በፍፁም ማከናወን አይችሉም……4

26. [ስም] የተለመደን ቋንቋ የመጠቀም/የመግባባት ችግር አለባቸው፤ ለምሳሌ መረዳት?

ምንም ችግር የለባቸውም…….……1

አንዳንድ ችግር አለባቸው …… 2

ብዙ ችግር አለባቸው …… 3

እንቅስቃሴን በፍፁም ማከናወን አይችሉም……4

- **የቤተሰብ የምግብ ወጪ**

27. ቤተሰብዎ በአማካይ ለምግብ/ለምግብ እቃዎች ምን ያህል ያወጣል?

በወር ____ ብር

- **የቤተሰብ ለምግብ ያልሆነ ወጪ**

28. በአማካይ የእርስዎ ቤተሰብ ለሚከተሉት አስፈላጊ ፍጆታዎች ምን ያህል ያወጣል?

_____ብር (በወር)?

1. መገልገያዎች (ኤሌክትሪክ, ውሃ, ስልክ)

2. ትምህርት (የህፃናት ትምህርት ቤት ወይም ራስን)

3. የቤት ኪራይ

4. ጠቃሚ እቃ

5. ማህበራዊ ግዴታ

6. ሌላ (ይግለጹ) _____

29. ቤተሰብዎ ለሚከተሉት አስፈላጊ ፍጆታዎች በአማካይ ምን ያህል ያወጣል?

በአጠቃላይ _____ብር በአመት?

1. እቃዎች (ንብረቶች) እና የቤት እቃዎች እቃዎች

2. አልባሳት እና ተዛማጅ (ጫማ)

3. የንብረት ጥገና

4. ለግብርና ግብዓቶች (ማዳበሪያ፣ ፀረ-ተባይ፣ ዘር) ወጪ

5. ከሞት ጋር የተያያዘ ወጪ (ቀብር እና ቴስካር)

ጠቅላላ የምግብ ያልሆኑ ወጪዎች _____ብር

አጠቃላይ (ምግብ +ምግብ ያልሆኑ) _____ ብር

Annex V: Curriculum vitae

Yamlak Bereket Tadiwos
Kirkos sub city
Mobile: +251936753729
+251976055545
Email: bereketyamlak7@gmail.com

KEY QUALIFICATIONS

- **Collecting and recording data using ODK**
- **Analyzing using different software's**
- **Assisting in writing project proposals**
- **Assisting in developing concept note**

PROFESSIONAL EXPERIENCE:

Addis Ababa University

Data collector for assessing KAP of covid 19 prevention practice*(research conducted by Addis Ababa University and Ohio University Global One Health) on September/2022*

Resposibilities

- **Interviewing participants to obtain information about to identify their knowledge, attitude and practice.**
- **Recording the data using ODK.**
- **Collecting data on demographics and other characteristics of the population being studied, such as ethnicity, income level, or neighborhood segregation**
- **Compiling, assisting, sorting, and organizing data collection for entry into main database**
- **Reporting any issues and concerns to the supervisor.**

AIDS Health Care Foundation

Linkage Assistant ***January 10-now,2023***

Responsibilities

- **Working closely with the HIV care/treatment and HIV testing teams to reach out to HIV positive clients encourage them to come into care and monitor their linkage and engagement in medical care.**
- **Making notes and regularly updating the appropriate linkage and retention tools when contacting the client.**
- **Working with the clinic team to identify, follow-up and support clients that miss clinic appointments and those that disengage from care.**
  Reach out to partners of clients that recently test HIV positive and invite them to the clinic for HIV counseling and testing services.

International Clinical Labratories/ICL/

Sample collector ***October 2021-February 2022***

Resposibilities

- **Collect laboratory samples from walk in customers, inside customers' vehicles, hospitals, residences, flower farms and other on-site locations as necessary**
- **Registering and keeping track of specimens collected including time of collection and name and/or signature of phlebotomist**
- **Maintaining an organized and clean work area based on health and safety regulations and the guidelines of the institution**
- **Answering patient questions regarding collection techniques and offering additional resources on the collection process, if the patient requests them**
- **Using proper equipment and technique to safely collect laboratory specimens from customers following SOP of the laboratory**

EDUCATION

Master's degree in Health Economics

Addis Ababa University, college of health science

Bachelor's Degree in Public health **March 2021**

Haramaya University, Harar, Ethiopia

TRAININGS AND CERTIFICATES

- ✓ **Fully participated and completed basic level public health emergency management training from January 20-22, 2021 GC.**
- ✓ **Community based and team training programs on 2018, 2020 and 2021 GC respectively and received certificate of Award for my performance on the 2021 team training program.**
- ✓ **'Employability Skills and Entrepreneurship as a career Option' organized by Career Development Service Directorate (CDSD) and University Industry Linkage on 2021 G.C.**

SKILLS/LANGUAGES/GEOGRAPHICAL EXPERIENCE

Computer Skills: Microsoft Office Suite including Excel (Excellent), data analysis using epi-info, Stata, SPSS, ODK

Languages: Amharic (Mother tongue); English (Fluent),

REFERENCES:

1. Sintayehu Negash, Manager at international clinical laboratories, Bulgaria, keira, Addis Ababa, Ethiopia.

Email- sintayehu.negash@icladdis.com, Phone number- 0911782944

2. Alemayehu Dheressa (BSc, MPH) head department of Public Health and Health Policy Coordinator at Haramaya University, college of health and medical science, Harar Ethiopia

Email- alexdheressa@gmail.com, Phone number- 0917841709

3. Biruk Shalmeno (BSc, MPH in Biostatistics) lecture at school of public health, college of health and medical science, Haramaya University

Email- birukshalmeno27@gmail.com, Phone number- 0921471048

Signature of main advisor

Dr. Meseret Molla

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