Addis Ababa University

College of Health Sciences

School of Public Health

# Magnitude and Determinants of out of pocket medical expenditure among outpatients visiting public hospitals in East Shoa zone of Oromia region.

By: -

Deraro Bedado (BSC)

A thesis paper submitted to Department of Reproductive Health and Health Service Management, School of Public Health, College of Health Science, Addis Ababa University in partial fulfillment of the requirements for the degree of Master science of Public of Health in Health Economics.

October 2019

Addis Ababa, Ethiopia

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Advisor: - Dr. Alemayehu Desalegne Hailu

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I, the undersigned MPH student, declare that I have submitted my original work on a title ‘Magnitude and Determinants of out of pocket medical expenditure among outpatients visiting public hospitals in East Shoa zone of Oromia region.

Deraro Bedado _____ _____

Principal Investigator Signature Date

We, the undersigned Advisors, declare that this thesis is our original work in partial fulfillment of the requirement for the degree of Master of Science for the stated student above to our best knowledge. We confirmed that this thesis is ready for defense with our approval as the university advisor

Approved by:

1. Dr Alemayehu Dessalegne Hailu _____ _____

Advisor Signature Date

This thesis by Deraro Bedado Lelalcha is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of Masters of Public Health in Health Economics.

Internal examiner:

_____ _____ _____

Name Signature Date

External examiner:

_____ _____ _____

Name Signature Date

## ABSTRACT

**Background:** Out of pocket expenditure at the point of health service delivery increases the likelihood of catastrophic financial expenditures for health service users. In Ethiopia, around 33.7% of total health expenditure comes from the household out-of-pocket expenditure. Such significant out of -pocket payment creates financial barriers to access to health services and puts people at risk of poverty. Therefore**,** this finding offers new evidence on the magnitude and determinants of out of pocket expenditure on out-patient care.

**Objectives**: To investigate the magnitude and determinants of Out-of-Pocket medical expenditure among outpatients visiting Hospitals in East Shoa Zone, Oromia, Ethiopia.

**Methods**: An institution based cross-sectional study was conducted on 422 participants visited public hospitals in East Shoa zone from February 18 to Murch 9, 2019. Data collection took place through interviews with patients coming to the outpatient pharmacy after finishing their visits at the different outpatient departments in the hospitals. Data were collected via structured questioner, then it was cleaned, coded, entered into EPI info 7 and exported to SPSS version 23 statistical package for analysis. Descriptive statistics and both bivariate and multivariable logistic regression were used to identify determinants of OOP. The existence of association was measured using odds ratio with 95% confidence intervals.

**Results:** From the 378 interviews included in the final analysis, the proportion of participants paid out-of-pocket medical expenditure was 332(87.8%) and the mean out-of-pocket medical expenditure was 351.48 ETB (12.55USD) per visit, while the direct medical cost was 132.86 ETB. In addition, the study identifies some significant determinants for the out-of-pocket medical expenses of OPD services namely, residence, education of the household head and sex of the households.

**Conclusion: -** Most of the study participants were pay OOPME with the high average for OPD service received which is high when compared with the mean monthly household per capita income and OOPME found to determine by residence, educational level of household head and sex of the household. Health managers should focus on the implementation of CBHI and start SHI in order to protect society from financial risk that occurred at the service delivery.

**Keywords**: Out-of-pocket medical expenditures, health insurance, socioeconomic determinants of health, Catastrophic health expenditure.

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## Table of Contents

## Abbreviation and acronyms

| | |
|---|---|
| AAU | Addis Ababa University |
| AOR | Adjusted Odd Ratio |
| BGH | Bishoftu General Hospital |
| CBHI | Community-Based Health Insurance |
| COR | Crude Odd Ratio |
| CHE | Catastrophic Health Expenditure |
| ETB | Ethiopian Birr |
| FDRE | Federal Democratic Republic of Ethiopia |
| FMOH | Federal Ministry of Health |
| GDP | Gross Domestic Product |
| LMIC | Low and Middle-Income Countries |
| NHA | National Health Account |
| NHIA | National Health Insurance Agency |
| OOP | Out of Pocket |
| OOPME | Out of Pocket Medical Expenditure |
| OPD | Outpatient Department |
| IPD | Inpatient Department |
| OECD | Organization for Economic Operation and Development |
| ORHB | Oromia Regional Health Bureau |
| PEI | Patient Exit Interview |
| UHC | Universal Health Coverage |
| HH | Household |
| ZHD | Zonal Health Department |
| PcGDP | Per capita Gross Domestic Product |
| SHI | Social Health Insurance |
| USD | United States Dollar |
| WHO | World Health Organization |
| OPH | Olanchite Primary Hospital |

## LIST OF TABLES

## LIST OF FIGURES

# 1. INTRODUCTION

## 1.1. Background

The journey towards the goal of universal health coverage will require strengthening service delivery and overcoming significant financial barriers that hinder peoples from getting the health care they need(1). Countries that overly rely on out-of-pocket (OOP) payments to finance their health system pose a huge financial burden on households, forcing them to receive healthcare at the expense of other essential needs, such as food and education (2, 3). In addition, OOP is a payment made at the point of service delivery and it may force the households to delay or abandon some or all health services that people need(4). Major sources of financial burden include spending on direct medical costs (eg, consultation fees, drugs, laboratory and hospital bed days), direct non-medical costs (eg, transportation) and indirect costs (eg, lost income due to lost productivity by patients and their attendants)(5). According to the Organization for Economic Cooperation and Development(OECD), there are three main ways in which health care is financed in any country in the world and they include: Tax based financing through public health insurance schemes and through private funds such as Out-of-Pocket medical expenditure and donor funds(6). Out of pocket expenditure at the point of health service delivery increases the likelihood of catastrophic financial expenditures for health service users. In most low and middle-income countries, Out-of-Pocket medical expenditure(OOPME) accounts for 20% to 60% of National Health Expenditure while in most developed economies, this amount accounts for only 15% to 25% of Out-of-Pocket health expenditure(OOPME)(7). Catastrophic payments for health can be related to household resources. The ratio of health expenditure to total consumption expenditure can easily show the household health expenditure in relation to aggregate consumption expenditure(8). A commonly used threshold of 10 percent implies that the households may be forced to give up other basic necessities or sell their belongings for healthcare expenditure(9).On the research done in 51 African countries indicated that numerous households which are 25.6% find themselves in a position where they cannot use the service they need and they have to borrow money, sell assets or divert resources from other needs to seek healthcare(10).In fact, high OOP medical payments, in the absence of risk-pooling mechanisms and a high degree of poverty can result in deep and catastrophic financial shocks to vulnerable households(11). Catastrophic health expenditure occurs when the out of pocket (OOP) payments for the health services consume such a large portion of the house-holds available income and the household is pushed into poverty as a result(3). Even if,

there is no universally accepted consensus in the existing literature on the threshold proportion of household's expenditure, there is an agreement that catastrophic health expenditure is an out of pocket payment (OOP) expenditure that exceeds the annual threshold of household's total consumption or non-food consumption(12, 13). The proportion of households facing catastrophic health expenditure from out-of-pocket (OOP) payments broadly varies between countries, that is, it ranges from less than 1% in some countries to greater than 10% in others (10). Where out-of-pocket spending is less than 15% of total health spending, very few households tend to be affected by catastrophic payments (14). Countries can reduce the economic burden of out of pocket payments by relying more on prepayment and risk pooling mechanisms(12, 13).

In Ethiopia, when national community-based health insurance (CBHI) evaluation was conducted the agency used 15%medical expenditure and 25% of nonfood expenditure as a cut-off point for the occurrence of catastrophic health expenditure in the households(15). But, the national OOP share of total health expenditure was 33.7% according to the $5^{th}$ latest national health accounts survey(16). The World Health Report on health-systems financing brings together a large body of evidence that highlights various barriers to access that enhance the vulnerability of a large section of low- and middle-income country populations to health shocks. Paying for health care from one's own resources remains an important source of a burden on households and, together with other social determinants of health, stresses existing inequities(6). Poor health care financing remains a major challenge for the Ethiopia health system which leaves households vulnerable to impoverishment from catastrophic health expenditures and slows progress towards health improvements by limiting access to essential health services among the poor(17). The situation is associated with the high dependence on OOP expenditure, inefficiency and inequitable resource use, and lack of harmonized predictable funding from donors(15). Moving towards a system of universal health coverage is certainly an important way of bringing down out-of-pocket spending (OOPS) and addressing a significant source of inequity in financing and, therefore, in health outcomes(1).

Many countries including Ethiopia, have been implementing prepayment schemes for protecting the households' from out of pocket medical expenditure(OOPME) that lead to catastrophic health spending (18).

## 1.2. Statement of the Problem

The burden of out of pocket health expenditure is a global issue that gets focus on ensuring that people are protected against financial risks due to accessing care(7). The World Health Report of 2010, entitled "Health Systems Financing, the Path to "Universal Coverage" showed that over a billion people are unable to use the health services they need, while a 100 million people are pushed into poverty and 150 million people face financial hardship because of they have to pay directly from their out of pocket for the health services they use at the point of service delivery(7). Numerous households find themselves in a position where they have to borrow money, sell assets, or divert resources from other needs to seek healthcare(3). Study in low and middle-income countries showed that health shocks, whether an event of death or disease, can cause significant adverse economic outcomes for households in low and middle-income countries (LMICs). In Ethiopia, like other developing countries, public health care is provided at nominally low prices and free to those cannot afford to pay. But the health care consumer population is still to make a considerably high amount which is about 33.7% of out of pocket health expenditure which have significant negative side effects(16).

Excessive reliance on OOP health spending may also help inadequate healthcare services away from the less well-off to those who can afford to pay, enhancing inequalities in access to care(19). In Ethiopia, 75% of the services provided by Governmental health facilities is for outpatient services and 96% of the budget is used for this service from total out of pocket (OOP)medical expenditure by households (20). So, knowing the magnitude and determinants of OOPME among outpatients may be important for developing an effective health policy since doing so would help to understand the different factors that determine the utilization of healthcare due to the absence of financial risk protection. Therefore, this study aimed to assess the magnitude and determinants of OOP medical expenditures among outpatients in hospitals in East Shoa zone of Oromia.

## 1.3. Significance of the study

The level of OOPME and their determinants have a great impact on overall health system performance(7). When a system relies heavily on OOP, the payments required to access health care in relation to income can be high enough to result in financial catastrophe for individuals or households. Moreover, the impact of these out-of-pocket payments for health care go beyond catastrophic spending and many people, particularly the poor, may decide not to use services, simply because they cannot afford the direct costs(21).

There has been no research conducted in Ethiopia on this topic on which the results of the study give a special insight to responsible bodies (MOH, NHIA) to explore and strengthen in full organization of the financial risk pooling schemes and/or to develop other possible controls. The Government by enhancing public policy effectiveness through the provision of research findings on the determinants that pressure out-of-pocket medical expenditure among health seekers specifically out-patients who are the most typical health seekers in Ethiopia.

In addition, it also benefits the Private Researchers, who will use it as a reference for different studies by enabling the development of more studies which is context specific studies more desirable than depending on studies conducted elsewhere even within the same country as local circumstances can lead to a significant difference in its determinants and health care costs on the same topic.

# 2. LITERATURE REVIEW

## 2.1. Overview of out of pocket Expenditure

Universal health coverage is about access to affordable and good-quality health services which are essential to human wellbeing and economic and social development. A key objective of universal health coverage is to address inequities in the financial implications of health care (22). Accessibility is also related to spending on health as a fraction of total home spending; this financial protection results in the minimization of out-of-pocket payments and in compensation for illness-related losses of productivity(2). Globally an estimated 1.3 billion people do not have access to effective and affordable health care and of those who have access about 170 million are forced to spend more than 40 percent of their household income on medical treatment(23). Health financing can be achieved through a variety of channels, including government budgets, donor funding, health insurance, and direct payments. Out-of-pocket medical expenditures (OOP) include payment of cash or goods for direct and direct none health care services, such as medicines, consultation fees, and laboratory diagnostic tests transportation and food cost and indirect cost such as the cost of lost work days due to going to health facility (24). Out of pocket is considered as catastrophic when a household has to reduce another spending to compensate for health expenditure. Although WHO uses a 40% threshold for defining catastrophic health expenditures, the defined threshold for proportion of medical expenditure qualifying as catastrophic health expenditures varies by study, typically ranging from 5% to 40% of their income(25). In many countries, Out-of-pocket spending on health care can constitute a substantial portion of household expenditure among financing mechanism. In Philippines study found that OOP medical spending as a percentage of total health expenditure was 56.5% in 2013 and 55.8% in 2014 respectively(26). In India 86 percent of households paid their medical expenditure on hospitalization through households saving/income, 42 percent paid through borrowing, 18 percent paid through the contribution from family or friends and 6 percent paid through other sources of finance(21). Out-of-pocket spending has continued to grow since 2009, as a result of cost-sharing measures introduced in a number of countries. Some of the countries hardest hit by the crisis have seen significant increases in out-of-pocket payments as a share of health spending. Greece and Portugal, for example, have seen the private share of health spending increase by around 4 percentage points since 2009 to 31% and 28% of total health spending respectively(27).The research conducted in four African countries indicated that, the average out-of-pocket expenditure for

outpatients was 4 USD in Rwanda, 17 USD in DRC, 18 USD in Namibia, and 1520 USD in Liberia(28). Another study from Bangladesh, which focused on the cost of patient visits to public hospitals was reported the mean of $132.31 USD whereas the study from Ethiopia came up with the median total cost borne by outpatients and their families who visited the hospital was 22.25 USD (594ETB)(5).

The national health expenditure in Ethiopia has been shown that there was an increment in health spending both in nominal and per capita terms growing progressively. In 2010/11, it reached 26.5 billion Ethiopian Birr (ETB) (1.6 billion USD), up from 11.1 billion ETB (1.2 billion USD) in 2007/08. The major source of this increment in spending was funding by donors and international nongovernmental organizations. However, government spending on health increased substantially (67%) from 2.5 to 4.1 billion ETB, and household spending more than doubled when measured in ETB. The share of gross domestic product going to health reached 5.2%, up from 4.5% in 2007/08 (12). Per capita health expenditure rose from 150.48 ETB (16.10 USD) in 2007/08 to 334.81 ETB (20.77 USD) in 2010/11(20). However, it is far from the 34 USD recommended by WHO in 2001 to deliver essential health care in low-income countries like Ethiopia. It was also less than the average spent (22 USD in 2006) by 49 low-income countries with per capita income of 935 USD or less(7, 19). According to the sixth Ethiopian national health account, OOP spending in Ethiopia accounted for 33.7% of THE which is much higher than the global estimate of 18.17% of THE(29). Specifically, on the same NHA, the mean outpatient OOP spending for each of the incidences/contacts of utilization was 392 ETB that varies by residence (29).

## 2.2. Determinants of out of the pocket medical expenditure

Out-of-pocket payments for health services are related to a number of institutional and provider-level factors. The most commonly sociodemographic (Individual and household characteristics influence out-of-pocket health expenditure to include age, gender, education, residence, type of illness, source of drinking water, types of the latrine, health insurance coverage and socioeconomic status.

### 2.2.1. Age, gender, and education

Findings from different studies indicate that out-of-pocket health expenditures are higher for older individuals, women, and more educated(28). In Tehran study on hospitalization and catastrophic medical payment point out that educational level of the patient's family head, the sex of the

patient's family head, hospitalization day numbers, having made any out of hospital payments linked higher likely hood of exposure to catastrophic medical payment (30). A study conducted in Zambia on determinants of health care seeking patterns and out-of-pocket expenditure for malaria treatment demonstrated that out of pocket expenditures are positively influenced by greater distance traveled in seeking treatment, increased household head's education and seeking professional care outside the public sector(31). An analysis of determinants of out of pocket health expenditure in Kenya showed employment status of household head, education level of household head, marital status and age are significant at 95 percent and have the expected signs while Gender is not significant determinants of catastrophic health expenditures(9).

### 2.2.2. Income

The income of individuals and household is one of the most commonly associated characteristics with variation in out-of-pocket health expenditure. However, the relationship between income or and out-of-pocket expenditure can be mixed. A study conducted in Pakistan on socio-economic determinants of household out-of-pocket payments on healthcare found that economic status and number of old aged members are significant positive predictors of OOP payments (32). Studies in Uganda found that poorer individuals and households had lower absolute out of pocket expenditures on health care than wealthier households (33). Furthermore, a study in Sudan revealed that factors such as household's income, education, and household size, a number of household's members over 65 years and below 5 years old are the most important factors affecting health expenditures. The results also indicate that the number of elderly member and children and household belonging to the lowest income quintiles are the most significant variables that increase the risk of incurring catastrophic health expenditures (34). Our income is fixed but health expenditure may vary according to the type of disease and duration of the disease. In another way, we can say that the proportion of health expenditure increases, other expenditure will decrease because of the fixed household income. In Kenya, approximately 77% of household health expenditure is from out of pocket sources given that less than 8% of the Kenyan population is insured for health services (WHO, 2012). Being that studies related to out of pocket health expenditure are often primarily interested in the effects of health insurance membership on Out of Pocket payments i.e. payments for health care made by households at the point of receiving health services. As we know India is a developing country and unemployment is increasing as population

increasing with rapid growth day by day in which the make the situation very difficult to assess the health facility it also pushes to the household in the poverty

### 2.2.3. Location (Urban-Rural gap)

As different literature indicates individuals and household living in urban and rural have varying level of OOP expenditure. Study on determinants of health in Latin American and Caribbean countries showed that GDP per capita, health expenditure, and primary school enrollment is positively related to health, whereas the living in rural areas has a negative impact on health. In Pakistan report indicates that Urbanization and unemployment are variables that have a negative effect on health care expenditures (35). Evidence from Nigeria on household catastrophic health expenditure reveals that risk of incurring catastrophic health expenditure reduced among households in the richest quintile, households headed by an employed person, households located in urban areas, and households who utilized private hospitals (36). Similarly, report of study from Kenya indicated that presence of illness, availability of insurance cover, residence, the gender of household head, distance traveled in seeking health care services and age increases the probability of incurring catastrophic health expenditure (14).

### 2.2.4. Cost of medical services

The factors that affect out-of-pocket medical expenses will be explained by the use of elasticity theory. Elasticity examine how sensitive the demand for a good or service is to changes in the price of the good or service itself or to changes in the price of related goods or services. A study conducted in Asian countries demonstrated that the marginal income effect was found to be positively related to health expenditure per person while negatively related to the price of services (37). In addition, a study in Portugal revealed that reduction in the price of ambulatory pharmaceuticals in 2011 and 2012 is effective in reducing CHE incidence, for price demand elasticity's equal or smaller than 0.4. When the two effects are combined, CHE incidence increases, meaning that reductions in the price of pharmaceuticals are not sufficient to countervail the changes in user charges, even with enlarged economic exemptions(8).

### 2.2.5. User fees and health insurance coverage

Another important factor that predicts the level of catastrophic out of pocket health expenditure was user fees and health insurance coverage. Literature indicated that introduction of insurance schemes and other interventions have the potential to reduce out-of-pocket expenditure for health

care in low- and middle-income countries (LMIC). A study from India found that households with medical insurance have a lower probability of incurring catastrophic health expenditure as compared to those without insurance(4). The study done in Kenya stated that, majority of the respondents (34%) rely on the Government Health Insurance of NHIF as their most preferred payment option for medical services cost, 33% and 33% use OOP at service delivery point and private insurance respectively(38) and the 6$^{th}$ national health account of Ethiopia has come up with the proportion of 87% for those paid OOP for service received(29). Furthermore, a study from Bangladesh revealed that age, sex, marital status, place of residence, rich families have a positive relation with CHE while unemployed and with no social financial safety were inversely associated(39).

### 2.2.6. Type of illness and severity

More severe or complicated illnesses or conditions often result in higher out-of-pocket health expenditures and individuals/household experience acute illness and injury was also associated with a higher level of use of health care services Rwanda. Variations associated with household and community characteristics were less remarkable in Rwanda than in the other three countries. A study on nature and determinants of out-of-pocket health expenditure among older people in a rural Indian community found that male gender, poor sanitation, diabetes, tuberculosis, malaria, respiratory ailments, gastrointestinal diseases, dementia, depression, and disability were associated with higher out-of-pocket expenditures. Illiteracy, tuberculosis, diabetes, and dementia increased the risk for catastrophic health expenditures, while pension schemes protected against it (40). Likewise, the finding indicates that a major determinant of health care expenditures among elderly Americans is the prevalence of chronic disease and disability. Although not all of these conditions lead to persistently high medical costs, the occurrence of a stroke or the presence of cancer, and many other conditions can have a lasting effect on health status, disability, and the demand for medical services (41).

## 3. Conceptual Framework

Out of pocket medical expenditure was defined as, the direct outlay by individuals/households at the point of service delivery which including gratitude's and in-kind payments to health practitioners and pharmaceutical suppliers and the purchases of goods and services whose main intent is to contribute to the restoration on the enhancement of the health status of individuals/households. The determinants of out of pocket medical expenditures were examined by different researchers and this study collect significant determinants from each study. The conceptual framework depicts the relationship between independent variables and dependent variable which in this case is out-of-pocket medical expenditure(6, 24, 32, 42). (Figure 1)

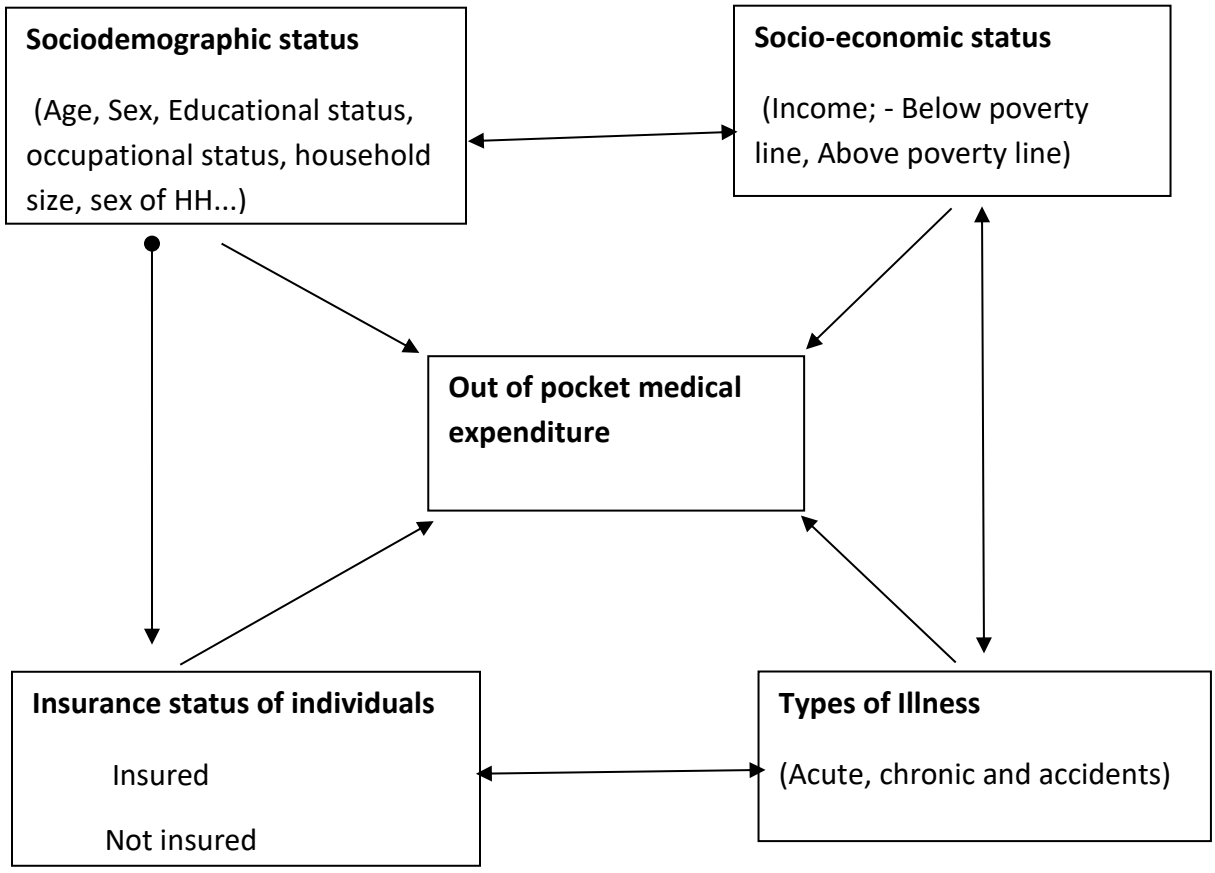


Figure 1. Conceptual framework of determinants of out of pocket medical expenditure among outpatients visiting hospitals in East Shoa zone of Oromia.

# 4. OBJECTIVES

## *4.1.* General Objective*:*

To investigate the Magnitude and Determinants of Out-of-Pocket medical expenditure among outpatients visiting Hospitals in East Shoa Zone, Oromia, Ethiopia

### *4.1.1.* Specific objectives*:*

1. To determine the magnitude of out-of-pocket medical expenditures among outpatients visiting hospitals in East Shoa Zone, Oromia, Ethiopia.
2. To estimate the level of out-of-pocket medical expenditure by outpatients visiting hospitals in East Shoa Zone, Oromia, Ethiopia.
3. To identify the determinants of out-of-pocket medical expenditures among outpatients visiting hospitals in East Shoa Zone, Oromia, Ethiopia.

# 5. METHODS

## 5.1. Study design

The institution-based cross-sectional study design was employed for the study among outpatients visiting public hospitals in East Shoa Zone of Oromia Region.

## 5.2. Study area

The study was conducted at Bishoftu general Hospital (BGH) in Bishoftu town which 47km far from Addis Ababa and Olanchite Hospital which is 25km far from Adama and both are located in east shoa zone, Oromia, Ethiopia. Bishoftu hospital is a general hospital with a catchment population of 1.2 million and olanchite hospital is a district hospital with the catchment population of 600,000. The hospitals provide inpatient and outpatient medical services in several departments. The hospitals provide a fee waiver for maternal care related services. The hospitals have more than on average 135-bed capacity and provide service to over 214,060 patients annually. The hospital serves as a referral center for different health centers in the zones according to their catchments area. The services provided to patients referred from other institutions include chronic illnesses such as hypertension and diabetes, surgery, psychiatric care, obstetrics and gynecology among others. The study was done from 18 of February to 9th of Murch 2019 at the outpatient pharmacy of the hospitals.

## 5.3. Study population

The source populations for this study were outpatients visiting public hospitals in East Shoa Zone of Oromia Region. From these sources, the study population was all individuals who received outpatient services from selected hospitals in East shoa Zone which were Bishoftu General hospital and olanchite primary hospital.

### 5.3.1. Inclusion and Exclusion Criteria

#### 5.3.1.1. Inclusion criteria:

All outpatient clients who visited the hospitals at the time of data collection and who were willing to participate with oral consent in the study were included.

#### 5.3.1.2. Exclusion criteria:

The Patients whose residential area was out of East shoa Zone was excluded to reduce inflation of the result.

## 5.4. Sampling and Sample Size

### 5.4.1 Sampling Frame

A sampling frame requires for each member of the population under consideration to be known and recognizable. Sampling frames indicated the listings of the population together with the certain characteristics of the population. According to Mugenda & Mugenda (2003), Gay suggests that at least 30% of the cases under accessible population are required for research(43). Therefore, this study used at least 30% of the accessible population which drew the sampling frame 2 randomly selected out of the 5 public hospitals in East Shoa zone of Oromia region. Table 1 below illustrates the sampling frame formulated by the study by visiting the different 2 out of 5 hospitals in East Shoa zone those are selected randomly. The study managed to establish that the estimated number of patients who visited the different hospital's clinics on a monthly basis. This was achieved by taking the average monthly patient load in different clinics. As showed in the sampling frame, there was an estimate of about 12,009 patients who visited the 2 selected hospitals on a monthly basis in East Shoa zone of Oromia region.

### 5.4.2. Sample size

The number of outpatients included in this study were determined by using single population proportion formula(44), where the proportion and standard deviation of outpatient costs not available and no similar study in East shoa zone, in Ethiopia and with the intention of getting maximum sample size, unknown population constant was used with the following assumptions; marginal error (d) 5% and a confidence interval of 95% and a proportion of 50% was preferred due to the lack of similar studies.

$$n=\frac{(z\alpha/2)2*p(1-p)}{d2} \quad =(1.96)^2x0.5(1-0.5)/\ 0.05 = 384 \text{ ----------(1)}$$

Where:

n = the desirable sample size

Z(α/2) = the critical value at 95% level of significance (1.96)

p = proportion of patients with OOP expenditure at service delivery point (0.5)

d = precision of measurement (acceptable marginal error) (0.05)

A total number of **422** participants was estimated to be included for the study upon adding 10% contingency (10% non-response rate =0.1x384= 38.4). ----------(2)

**Table 1**. Sampling Frame and sample distribution

| No | Name hospitals | Name of clinic | Estimate Number of monthly patients (**Ni**) | Desired sample size |
|---|---|---|---|---|
| 1 | Bishoftu General | Adult OPD | 3218 | 111 |
| | | Pediatrics clinic | 1520 | 53 |
| | | Emergency department | 1695 | 58 |
| | | Ophthalmology | 609 | 21 |
| | | Total | **7042** | **243** |
| 2 | Olanchite primary | Adult OPD | 2317 | 83 |
| | | Pediatrics clinic | 1245 | 45 |
| | | Emergency department | 1100 | 40 |
| | | Ophthalmology | 305 | 11 |
| | | Total | **4967** | **179** |
| | Ground total | | **12,009** | **422** |

## 5.4. Sampling procedures

The sampling procedure for this study was conducted through random sampling that enabled the study to achieve a desired representation of the respondents from the 2 selected Public Hospitals in East shoa zone, Oromia. The study was started first by stratifying the population from the 2 selected hospitals into departments (clinics) and followed by calculating the proportion of the population in each (clinics) and combining the results to obtain the actual stratified sample. Table 1 above illustrates the name of the hospital, name of out-patient clinic selected, the estimated number of patients who visit the selected clinics on a monthly basis and the desired sample size which was derived using stratified random sampling.

In the selection of participants of the study, every fifth patient receiving service at the outpatient pharmacy from the sampled clinics was participated, in each of the fifteen working days during the data collection period by dividing total sample by the number of days. This was done to increase the representativeness of the sample of outpatients visiting the hospital.

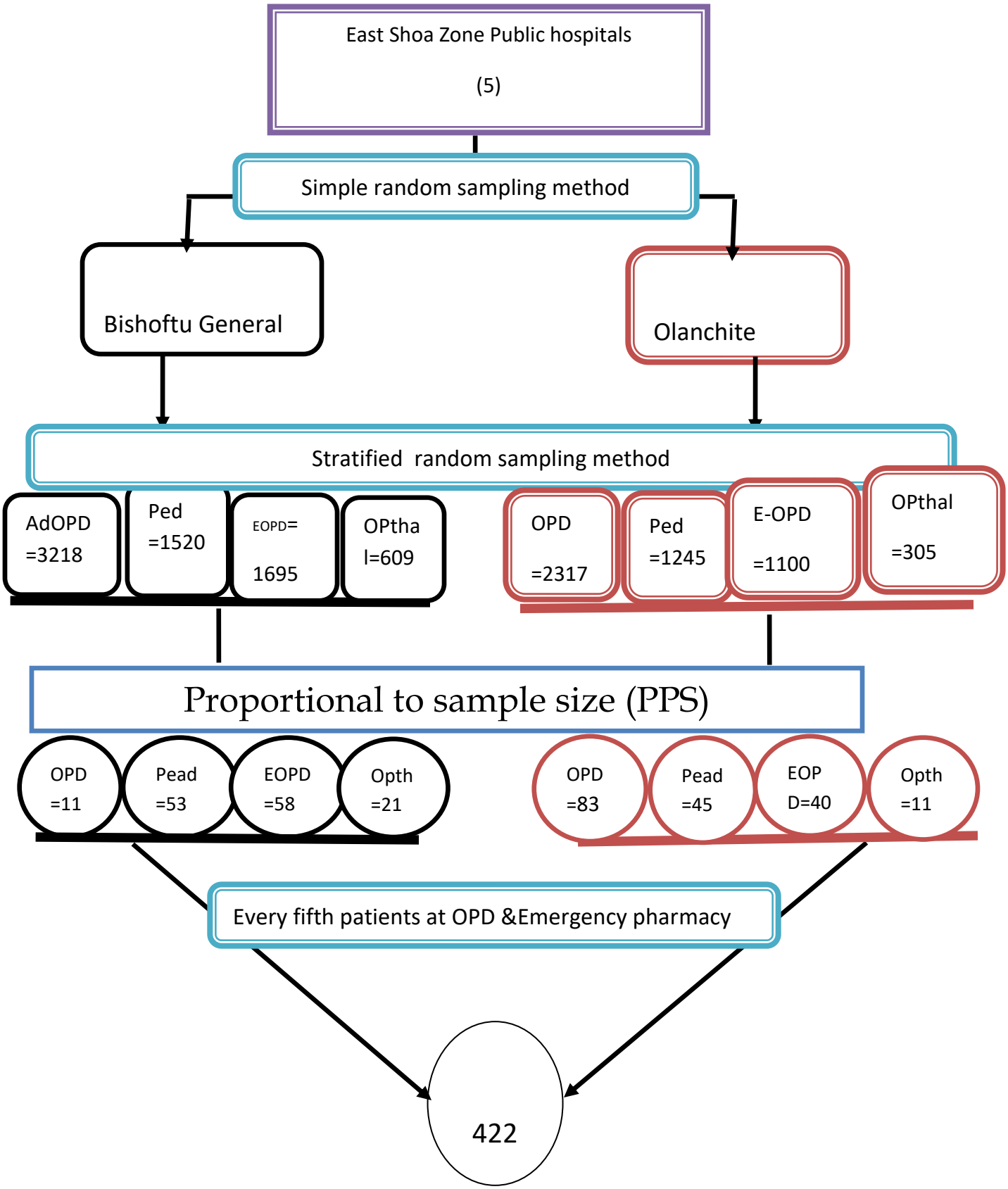


**Figure 2**; Schematic Presentation of Sample selection procedure

## 5.5. Data collection procedures

The structured questionnaire was prepared based on the review of other relevant literature. The questionnaire was first prepared in English and translated to local language (Afan Oromo) and back-translated to English to ensure consistency. Prior to the actual study, a pretest of the questionnaire was done and necessary modification was made accordingly.

The pretested standardized structured data collection tool consisted of three parts. Part one: patient socio-demographic characteristics (age. gender, occupation, marital status, education level and household size), part two: patient/Household health insurance status and part three OPD service OOP medical expenditures including (consultation cost, investigation/laboratory cost, medicine cost and other relevant expenditures), and patient/Household income monthly or annually. Permission to collect data was granted by the CEO or medical director of the respective hospitals before the research project was launched in the Hospitals. Ethical considerations such as the participants' right to anonymity, confidentiality, privacy or non-participation, informed consent and protection from discomfort, harm and victimization adhered during the interviewing. Data were collected by four trained data collectors from the respective Hospitals in a face-to-face at the final steps(pharmacy) exit interview with study participants (patients and/or caregivers). Data completeness was checked each after data collection finished before to thanks the study participant by data collector and finally by the supervisors at the end of the days.

### 5.5.1. Variables

Dependent variable: out of pocket medical expenditure among outpatients

Independent variables: socioeconomic and demographic variables such as age, sex, marital status, employment status, income level, educational status, residence, types illness, types of sanitation facilities, source of drinking water and insurance status). The following model was used to assess determinants of out of pocket medical expenditure.

*OOPME (yes=1/no=0) = a+ x1*age+ x2*sex+ x3*marital status+ x4*employment status+ x5*income+ x6*educational status+ x7*residence+ x8*type of illness+ x9* type of sanitation+ x10* source of drinking water+ x11*insurance status.*

### 5.5.2. Operational definitions

- **Out of pocket medical expenditure** is the proportion of participants who were paid ***(who answered 'Yes')*** among those participants who came to hospitals and receive the outpatient services during the data collection period.
- **Mean Amount of OOPME** it is the average amount that paid by the participant to receive the outpatient services
- **Direct costs** are costs those associated with registration /consultation, diagnostic workup and for purchasing of medication.
- **Direct none medical costs** are costs associated with food and transportation for both the patients and the family members.
- **Indirect costs**
    - ✓ Patient loss of income Cash or in-kind income is foregone due to the inability to continue usual income-generating activities
    - ✓ Caregiver loss of income foregone while taking care of the patient or substituting his labor
- **Disposable income**: is income after a tax that is available for saving and spending.
- **Catastrophic health expenditure**: It was defined as the household's monthly/annual health expenditure when exceeds 15 percent of the total monthly/annual household income.
- **Monthly household Per capita income**: It refers to the family income per person is calculated by taking the total gross family income which includes primary income and receipts from other sources received by all family members for the months, as participants in any economic activity or as receipts of transfers, pensions or grants divided by the total number of family members living together(45).
- **Per capita Gross Domestic Product (GDP):** This measures the income level of a country to its total population. A country's ability to spend on healthcare depends to an extent on its income level measured in terms of GDP per capita(46)
- **Below poverty line:** The population who have earned below 2.9 USD
- **Types of Illness**: classified according to WHO disease classification

## 5.6. Data quality management

A one-day training was given to all data collectors on the objective, the relevance of the study and confidentiality of the information and daily supervision was conducted by the principal investigator and supervisor to guide and correct any doubt occurred during the data collection process. Data was also checked every day for its completion.

The pretest was conducted in Adama Hospital on about 5% of the sample which is 21 interview encounters, those were not part of the final analysis, prior to the commencement of data collection. On the basis of this, relevant modifications were introduced.

## 5.7. Data analysis and interpretation

Data were entered into Epi-Info 7 and transferred to Statistical package software for social science version 23(SPSS 23) for binary logistic regression analysis. A descriptive analysis (using mean, median, and frequencies) was done to explore our data and to present the data.

The binary logistic regression was used to see the association of OOPME with sociodemographic and economic characteristics, health insurance status and other related factors. Multivariable logistic regression was used to control confounding factors and to get less biased estimates of the association between explanatory and outcome variables. Explanatory variables which had a significant association with OOPME (<=P, 0.25) in the bivariate binary logistic regression were entered into a multivariable logistic regression model to identify the determinant of out-of-pocket medical expenditure. The level of significance was set at 0.05 at 95% confidence level.

## 5.8. Ethical consideration

Ethical clearance was obtained from Ethical Review Committee of School of Public health, Addis Ababa University (Ref No.: SPH/PN/0068/28/1/2019) support letter was written from Oromia Regional health bureau to the respective hospitals and permission was also sought from all study hospitals. The written consent form was informed before the beginning of the interview (Annex) and they were informed about the purpose of the study and verbal consent was obtained continuing with the interview. Participants were also informed they are free to stop the interview at any time if they didn't want to continue. Confidentiality of patient information was assured. Information was only shared with the study team.

### 5.9. Result dissemination plan

The result of the study will be disseminated to responsible bodies such as Addis Ababa University, East shoa Zonal health department and Bishoftu general hospital and Olanchite primary hospitals in which the study conducted. The study finding will be also submitted to professional journals on health for publication to serve as a data source for further studies

# 6. RESULTS

In this section, first, we present the background characteristics of the study participants. Second, we discuss the magnitude of medical expenditures, Third, we describe the out of Pocket medical expenditure for OPD services by types of illness. Fourth, we describe Out-of-pocket medical expenditures (OOPME) for outpatient (OPD) services by individual background characteristics. Finally, we describe the determinants of out of pocket medical expenditures

## 6.1. Characteristics of study participants

In this study, a total of 378 study patients from individuals who came to health facilities seeking health service involved with a response rate of 89.6. Among the study samples, 54.8% of them were male and 45.2% were female and 65.1% of them were within the age range of 18-64 years. About one-third, (29.6%) of the participants have a primary level of education (Grade 1-8), the other (27.5%) of the participants have a secondary level of education (Grade 9-12) and 23% of the respondents have college and above level of education. The large majority of the participants (64.3%) were married. More than half (59.5%) of individuals lived in urban communities.
The socioeconomic status of the participants household show that eighty (21.4%) were below the poverty line (BPL), and 297 (78.6%) were above the poverty line.

The other 326 (86.2 %) respondents who came and received the outpatient's services were diagnosed with acute illness with the wide range of pathologies that followed with injuries/accidents which including car accidents, motorcycle accidents, fighting and burning (Table 2).

Table 2. Percent distribution by individual background characteristics of study participants visiting Hospitals in East shoa zone, Oromia, 2019

| Individual background | Categories | | |
|---|---|---|---|
| **Sex** | | Number | % |
| | Male | 207 | 54.8 |
| | Female | 171 | 45.2 |
| **The educational level of participants** | No formal education | 75 | 19.8 |
| | primary | 112 | 29.6 |
| | Secondary | 104 | 27.5 |
| | College and Higher | 87 | 23.0 |
| **Age** | <18 | 83 | 22 |
| | 18-64 | 246 | 65.1 |
| | 65+ | 49 | 13.0 |
| **Marital status** | Married | 243 | 64.3 |
| | Single | 134 | 35.4 |
| | Others* | 1 | |
| **Health insurance status** | Yes | 37 | 9.79 |
| | No | 332 | 87.8 |
| | Fee waiver | 9 | 2.41 |
| **Source of drinking water** | Improved | 245 | 64.8 |
| | Unimproved | 133 | 35.2 |
| **Sanitation facilities(toilet)** | Improved | 279 | 73.8 |
| | unimproved | 99 | 26.2 |
| **Residence** | Urban | 225 | 59.5 |
| | Rural | 153 | 40.5 |
| **Types of illness** | Acute Illness | 326 | 86.2 |
| | chronic Illness | 16 | 4.2 |
| | Injuries/accidents | 36 | 9.5 |
| **Total household size** | Less or equal to five family members | 358 | 94.7 |
| | Greater than five family members | 20 | 5.3 |

| | | | |
|---|---|---|---|
| **Monthly income of households** | <1100 | 24 | 6.34 |
| | 1100-4500 | 198 | 52.38 |
| | >5400 | 156 | 41.27 |
| **Socioeconomic status of individual/households** | Below poverty line | 81 | 21.4 |
| | Above the poverty line | 297 | 78.6 |

*Others includes widow, divorced & separated;

## 6.2. The prevalence of out-of-pocket medical expenditures among outpatients

The proportion of individuals who paid at the service delivery point was 332(87.8%) where only 37 (9.79%) had CBHI and fee waiver 9(2.41) (Figure 2)

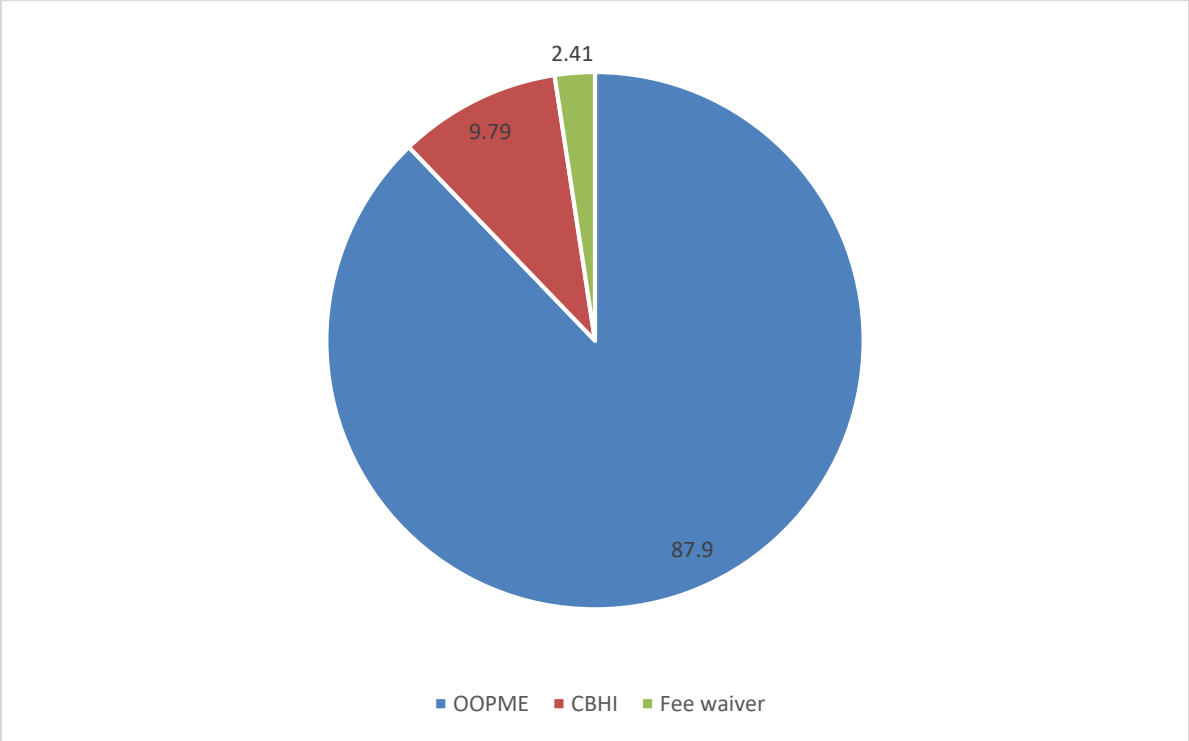


Figure 2: The prevalence of OOPME among OPD service received from hospitals in east shoa zone of Oromia region,2019

### 6.2.1. The magnitude of out-of-pocket medical expenditures

There are controversies on estimating cost data especially when the data have a skewness nature. Some studies report mean is a reasonable choice although it could be affected by the skewed distribution of cost in order to inform health care policy decisions (47). Others studies report it to be reported using median since it is not affected by skewness although it only shows the position of the distribution (48). However, we used both mean and median measurements to provide a full picture of the estimation which might help in the health policy decision making and give focus to this area.

The mean total OOP medical expenditures to get outpatient services for one visit was 351.48 ETB. The mean for the direct OOP medical costs incurred by participants and their families was 132.86 ETB which is (38% of total OOP medical expenditures for OPD services), followed by indirect cost 131.24(37.33%) ETB and the rest 87.39(24.86%) ETB was for direct none medical expenditures. With regard to residence, those who lived in Urban areas spent more out of pocket (OOP) money on medical health care (367.36 ETB) than Rural residents (343.32 ETB). From the direct none medical costs, the cost of food was estimated at median 65 (mean 69.53) ETB/patient. The study showed that the total out pocket medical expenditure for outpatient services was a median of 320.00 (mean 351.48) ETB/visit as shown on the (Table 3).

Table 3. The average of OOP medical expenditure for outpatient services in ETB for the individuals received services by cost parameters from hospitals in east shoa zone, Oromia, 2019

| Cost parameters | Urban (n=225) | | | Rural (n=153) | | | Total (n=378) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Median | % of total OOP medical expenditure | Mean | Median | % of total OOP healthcare expenditure | Mean | Median | % of total OOP healthcare expenditure |
| Transportation cost | 20.89 | 16.00 | 6 | 14.87 | 10.00 | 4.3 | 16.91 | 16.00 | 4.8 |
| Consultation cost | 12.96 | 15.00 | 3.5 | 13.38 | 15.00 | 3.9 | 13.24 | 15.00 | 3.76 |
| Investigation Cost | 47.22 | 45.00 | 12.8 | 43.99 | 45.00 | 12.8 | 45.09 | 45.00 | 12.8 |
| Medication cost | 76.08 | 65.00 | 20.7 | 73.73 | 55.00 | 21.5 | 74.53 | 55.00 | 21.2 |
| Food and other cost | 69.81 | 62.500 | 19.0 | 70.82 | 65.00 | 20.6 | 70.48 | 65.00 | 20.14 |
| Indirect cost | 140.39 | 100.00 | 38 | 126.53 | 100.00 | 36.9 | 131.24 | 100.00 | 37.3 |
| Total | 367.36 | 337.00 | 100 | 343.32 | 310.50 | 100 | 351.48 | 320.00 | 100 |

Note: - The cost is in ETB, (1USD=28.45 ETB, 2018)

### 6.2.1.1. Direct medical costs

The direct medical costs paid by individuals received outpatient service from the hospitals was calculated to be mean 132.86ETB median 115.00 ETB. Medicines (mean=74.53ETB, median=55.00ETB) and investigation cost (mean= 45.09ETB, median=45.00ETB) were major contributors of direct medical cost. (Table 4)

Table 4. Direct medical cost for outpatient services in ETB for the service received by cost parameters from hospitals in east shoa zone, Oromia, 201

| Cost Parameter | Mean | Median |
|---|---|---|
| Consultation cost | 13.24 | 15.00 |
| Investigation Cost | 45.09 | 45.00 |
| Medication cost | 74.53 | 55.00 |
| Total | 132.86 | 115.00 |

### 6.2.1.2. Direct nonmedical costs

OOP on the nonmedical component of the outpatient service received by participants of the study included transportation, food, and other expenses. Table 5 presents these costs, both for patients and caregivers accompanying them to the hospitals. Mean total direct nonmedical cost spent on patients and caregivers were 87.37ETB and median=81.00ETB respectively. In these cases, food and other cost was the major component. (Table 5)

Table 5. Direct nonmedical cost for outpatient services in ETB for the service received by cost parameters from hospitals in east shoa zone, Oromia, 2019

| Cost Parameter | Mean | Median |
|---|---|---|
| Transportation cost | 16.91 | 16.00 |
| Food and another cost | 70.48 | 65.00 |
| Total | 87.39 | 81 |

### 6.2.1.3. Indirect cost

The components of indirect cost were including, costs during travel to and from the hospital and stay during hospitals visit. The time loss associated to stay during services at the hospitals was the main contributor to time loss related to both patients and their caregivers. Looking at the monetary value of the time lost, a mean total of 87.37 ETB and a median of 100.00 ETB was lost due to the hospital visit to receive outpatient services.

### 6.2.1.4. The income of the household

Regarding income, the average Patient and household's monthly income was estimated at median 2298.00 (mean 2665.39ETB/month and median 4508.00 (at mean 4396.58 ETB/ month respectively (Figure 3).

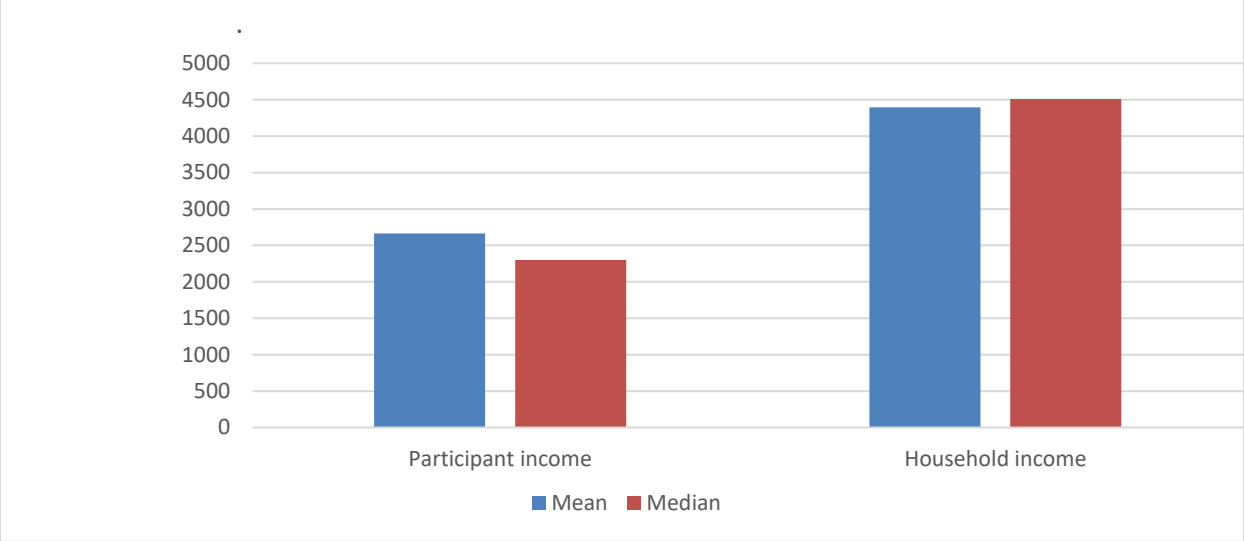


Figure 3. Monthly income of participants households in ETB for the individuals received services from hospitals in east shoa zone, Oromia, 2019

## 6.4. Out of Pocket medical expenditure for OPD services by types of illness

Overall, of the total OOP medical expenditures, acute illness (example: URTI, LRTI, parasitic disease, etc.) stand out as the major area of spending, with 49.4% of total OOP Medical expenditure for OPD going to these services. The second major functional areas where OOPME were spent were Injuries/accidents (car/motorcycle accidents, fighting and burning) which accounted for about 38.5% of total OOPME for outpatients' services that followed by chronic illness (NCDs)

which are emerging as one of the major disease burdens in the country, accounting for about 12.1% of the total OOP medical expenditures for outpatients' services. (Figure 4)

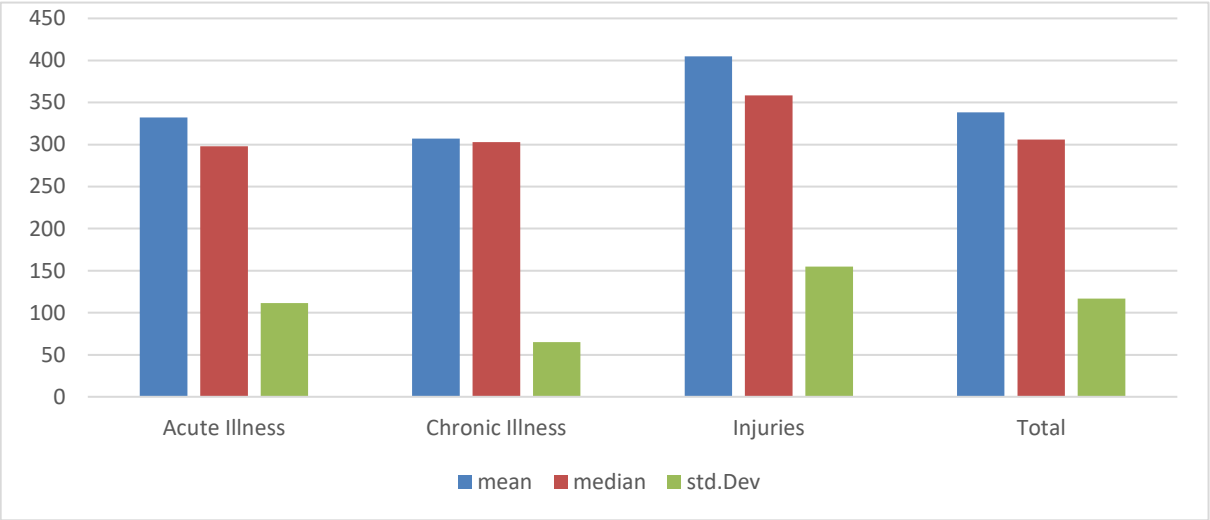


Fig 4. OOP by Types of illness among OPD services received from hospitals in east shoa zone, Oromia, 2019

## 6.5. Out-of-pocket medical expenditures (OOPME) for selected outpatient (OPD) services with individual background characteristics

The study findings indicate that out-of-pocket health expenditures differ from individual and community background characteristics. The men spent more (mean 336.44ETB) than women (mean 330.61ETB) on outpatient services and out-of-pocket medical expenditure increased with age. Average out-of-pocket spending for the age group 18-64 years was 343.34 ETB. The mean out of pocket medical expenditures that individuals with secondary education and above spent was more (345.31ETB) and those without any formal education spent (324.07ETB). Those individuals have insurance coverage was paid lower out-of-pocket medical expenditures which were a mean of 219.41 ETB per annually for the outpatient services received compared with 351.48 ETB/visit spent by those without health insurance.

The individuals who had access to an improved water source and access to an improved sanitation facility (toilet) was associated with less OOPME for outpatient services they received. Out-of-pocket medical spending for outpatient health care services was positively associated with household socioeconomic status in which the households who's their income is below the poverty line spent a mean of 325.21 ETB. Similarly, those in the above poverty line spent 341.68 ETB on the received outpatient services. Urban residents reported higher out-of-pocket spending on outpatient care than rural residents. (Table 6)

Table 6. Average out-of-pocket health expenditures for the health care services received by some individual and community background characteristics

| **Individual background** | **Categories** | **Total OOPME in ETB** | | |
|---|---|---|---|---|
| **Sex** | | Mean | Median | Std. Deviation |
| | Male | 336.44 | 307.00 | 100.59 |
| | Female | 330.61 | 300.00 | 121.70 |
| **Age** | <18 | 313.12 | 286.00 | 117.807 |
| | 18-64 | 343.34 | 315.50 | 112.881 |
| | 65+ | 320.94 | 311.00 | 76.368 |
| **Marital status** | Married | 333.13 | 306.00 | 109.433 |
| | Single | 336.00 | 304.50 | 112.719 |
| | others | 203.00 | 203.00 | |
| **Educational level of respondent** | No formal education | 324.07 | 278.00 | 122.815 |
| | Primary education | 320.69 | 296.00 | 110.523 |
| | Secondary and above | 345.31 | 316.00 | 104.681 |
| **Sanitation facilities(toilet)** | Improved | 325.39 | 301.00 | 103.511 |
| | unimproved | 339.03 | 310.00 | 114.588 |
| **Source of drinking water** | improved source | 328.70 | 299.00 | 109.402 |
| | unimproved source | 341.64 | 322.00 | 112.160 |

(continued) Table 5. Average out-of-pocket health expenditures for the health care services received by some individual and community background characteristics

| Individual background | Categories | Total out of the pocket medical expenditure | | |
|---|---|---|---|---|
| | | Mean | Median | Std. Deviation |
| Types of illness (final Diagnoses) | Acute Illness | 397.56 | 331.00 | 183.916 |
| | chronic Illness | 314.45 | 293.00 | 85.819 |
| | Injuries | 436.26 | 400.00 | 142.187 |
| Health Insurance status | Yes | 219.41 | 191.00 | 72.955 |
| | No | 354.60 | 317.00 | 112.083 |
| Total HH size recoded (number of members | <5 | 335.42 | 301.00 | 116.616 |
| | >5 | 386.95 | 371.50 | 110.245 |
| Monthly Income of House Hold recoded | <1100 | 325.21 | 283.00 | 101.483 |
| | 1100-4500 | 323.31 | 300.00 | 121.457 |
| | >4500 | 337.25 | 315.00 | 88.560 |
| Socioeconomic status recorded | Below poverty line | 325.21 | 283.00 | 101.483 |
| | Above the poverty line | 341.68 | 315.00 | 120.458 |

## 6.6. Determinants of Out-Of-Pocket Medical Expenditure (OOP)

In this section, we estimate the determinants of OOPME among outpatients (OPD) service received econometrically.

After adjustment for available covariates, bivariate analysis was done to control confounding factors, potentially associated factors were analyzed with a multivariable in which variables with p<=0.25 in the bivariate analysis were included. As a result, Residence, Education of household head, and monthly income of household were significantly associated with out of pocket medical expenditure (OOP).

Individuals from urban residents were 6.34 times more likely to pay OOP (AOR=6.34, 95% CI (**1.93 – 20.84**) compared with individual from rural residents. Educated household head those are in the educational level of secondary and above were less likely to pay OOP than those of no formal education (AOR=0.18, 95% CI (**0.05 – 0.63**). Female households were 1.34 more likely to pay out of pocket medical expenditure than male counterpart (AOR=1.34, 95% CI (**0.44 – 4.16**). Results from the logistic regression model are shown in (Table 6).

Table-7: Logistic regression analysis for the determinants of out-of-pocket expenditure for out-patient visiting Hospitals in east shoe zone, Oromia, Ethiopia,2019 (n=378)

| Na of variables | Category | OOPME | | COR (95%CI | AOR (95% C.I) |
|---|---|---|---|---|---|
| | | Yes | No | | |
| RESIDENCY | Urban | 214(95%) | 11(5%) | 0(0.069,0.284) | 6.34(1.93, 20.84) |
| | Rural | 112(73.2%) | 41(26.7%) | 1 | 1 |
| SEX | Male | 196(94.7%) | 11(5.3%) | 1 | 1 |
| | Female | 130(76%) | 41(24%) | 0.178 (0.088, 0.359) | 2.74 (1.14,6.55) |
| Sex of house hold head | Male | 277(86%) | 45(14%) | 1 | 1 |
| | Female | 49(87.5%) | 7((12.5) | 6.916(3.007 15.905) | 1.34 (.44, 4.16) |
| Education of household head | No formal education | 41(67.2%) | 20(32.8%) | 1 | 1 |
| | Primary education | 72(75%) | 24(25%) | 40.00(5.298 02.017) | 1.25 (0.48,3.19) |
| | Secondary And above | 213(96.3%) | 8(3.6%) | 9.032(1.092 74.703 | 0.18(0.05, 0.63) |
| Monthly income household | <1100 | 23(95.8%) | 1(4.2%) | 1 | 1 |
| | 1100-4300 | 172(86.8%) | 26(15.2%) | 1.697(.614, 4.694) | 6.63 (0.66, 66.31) |
| | >4300 | 131(84%) | 25(16%) | .609 (.227, 1.636) | 2.49(0.25, 24.59) |
| Family size of household | <5 | 215(91%) | 22(9%) | 1 | 1 |
| | >5 | 111(78.7%) | 30(21.2%) | 0.379(0.209 0.687) | 1.35 (.64, 2.86) |
| Types of toilet | improved | 153(92%) | 13(8%) | 0.377(0.194 0.732) | 0.74 (.27, 2.05) |
| | unimproved | 173(82%) | 39(18%) | 1 | 1 |
| Type of (Illness) Morbidity | Acute | 295(90.8%) | 30(9.2%) | 1 | 1 |
| | Chronic | 11(68.7%) | 7(31.3%) | 0.339(0.186, .616) | .31(.08, 1.21) |

## 7. DISCUSSION

The main focus of this study was to examine the magnitude of out-of-pocket medical expenditures and its determinants of out of pocket medical expenditures among outpatients visiting hospitals in east shoa zone of Oromia region. Because the level of out-of-pocket medical expenditures is related to health care utilization, which is above three fourth of the services given by public health facilities that we assessed was outpatient care services received(29).

This is the first study to compute the magnitude and determinants of out of pocket medical expenditures among outpatients received services from public hospitals.

Majority of the respondents 332(87.8%) stated that they often rely on the out of pocket medical expenditure for the service received which is much higher than the study conducted in Kenya which is 33% of the respondents stated that they often use cash to pay for medical services they received(38).

The finding was comparable with the results indicated on the 6$^{th}$ Ethiopian health account (EHA) (29)

The mean of out of pocket medical expenditures among outpatients of this study was 351.48 ETB which is 24% of the (1466 ETB) monthly per capita household income which is slightly comparative to the research conducted in Burkina Faso on the OOP spending by OPD service users which was 27% of the minimum legal monthly income(49).

The other study conducted in northwestern Ethiopia that assessed costs incurred by outpatient and/or their families visited the hospital was estimated to median total cost by patients was found to be more than 22.25 USD (556 ETB) per visit which is higher than the current findings(5).

The study conducted in Lao People's Democratic Republic (PDR) was reported with a higher mean total cost of the outpatient visit was 23.7 USD(593ETB) which have the same results with the report from Ethiopia (42). Within the similar fashion this study showed that the total out of pocket medical expenditure was estimated at mean 351.48 (median 320.00) birr/ visit, which was significant compared to the patient monthly income and household's monthly income that was estimated at median 2298.00 (mean 2665.39 birr/ month and median 4508.00 (at mean 4396.58 birr/month respectively.

The other important result is, the mean direct medical cost was 133 ETB which is (38%) of total OOP expenditures for OPD services which were comparable to a finding from Bolivia with a median of 6.54 USD incurred by patients and the current study reported a lower median cost

compared to the finding from northwestern Ethiopia which was (10.76 USD)(5, 50). The components of indirect cost are summarized, which included loss during travel to and from hospital and stay during hospital visit which was found to be a mean time lost estimated to 1 day (131ETB) in which less than the study conducted in northern Ethiopian hospital 4 days (3.66 USD)(5, 51). The time loss associated to stay during services at the hospital was the main contributor to time loss related to both patients and their caregivers(51).

With the similar fashion, our findings come up with comparable mean total cost of outpatient visit, which was reported on the latest Ethiopian national health account ($6^{th}$ NHA) for outpatient OOP medical expenditures for each of the incidences/contacts of utilization was 392 ETB that varies by residence(29), and a little bit low when compared to the research conducted in Democratic Republic of Congo (DRC) and Namibia in which the magnitude was $17 and $18 USD respectively(21). The result of magnitude was much higher when compared with the research conducted in Rwanda which was $4 USD of the average out-of-pocket expenditure for outpatients per month (21). Our result was also compared to the study conducted in Bangladesh, which focused on the cost of patient visits to public hospitals which were reported with higher mean costs of 132.31 USD per month which may be from the large data they have used (39).

The study identified the different determinants of out-of-pocket medical expenditures among outpatients like residence (urban community), educational level of household head and sex of household were significantly associated with out-of-pocket medical expenditures for outpatient services. Health expenditure was more significantly associated with the urban communities which are consistent with the argument that rural communities used health insurance mechanisms and many of its inhabitants continue to seek help from traditional for their health care needs which is the same with findings from earlier studies conducted Bangladesh and in Ethiopian on the $5^{th}$ national health account(16). Similarly, the report of study from Kenya indicated that being living in urban increases the probability of incurring out of pocket (OOP) health expenditure (14). Contrasting to the current findings, with the studies reported from Zambia, the result shows that people who reside in rural areas generally live further from health facilities which increase their OOP payments through travel cost(52). Clearly, OOP payments increase with increasing remoteness where health care facilities were not accessible which is not a great issue for this study.

Other findings that, a possible explanation can talk for the positive association between education of household head and the magnitude of OOP payments could be that better-educated individuals/household head may have health-seeking behavior that could increase a tendency to choose better-quality, more costly healthcare options in which it came up with the same findings from Zambia, that conducted on the determinants of out of pocket (OOP) (53).

Our study also reveals that level of education is associated with OOPME among outpatients which are similar with the study conducted in Kenya that revealed education level of household head was the determinants of out of pocket medical expenditures(6). This is supported by similar studies in Nigeria, Eritrea, and Uganda where the educated household head was a significant determinant of out of pocket medical expenditure (OOPME)(33, 36), but, in contrast with a study in a South African which was the level of education was not associated with out of pocket medical expenditure (OOPME)(49, 52).

The research conducted in Rwanda shows that sex was the significant determinant that being female household had increased the out-of-pocket health expenditures which are comparative with the current findings(21). The other research is done in Debre Markos, Gojjam, Ethiopia showed that sex of the household, found to have a statistically significant association with out of pocket health expenditure which is a line with the current findings (54). Moreover, the study conducted in Kenya showed that being in female household was significantly determine OOP health expenditures which may be they may not be exposed to illness(9).

## 8. Strength of the study

This study obtained the required data that collected all information like direct and indirect cost, monthly or/and yearly individual/household income and expenditure from outpatients received services from different departments and came to purchase the prescribed medicine and medical supplies from pharmacy. Information required in calculating costs was based on an investigation of patients and their households rather than documenting review.

## 9. Limitation of the study

The first limitation of the study, since the study design was institution based in which many numbers of populations could not access because of affordability and limited availability most patients' households were more likely with relatively higher income status. patients who left the hospital with no medicine prescribed to them were not represented in this finding since interviewing conducted on patients who came to the outpatient pharmacy of the hospital after they received services in a different department of the hospitals. The second limitation as the data was collected in a limited period of time, possible seasonal variations which may affect the level of OOP expenditure may not be fully captured or exaggerated by the current findings.

The third, getting reliable information on the household annual income and expenditure was also another problem due to recall bias.

The fourth limitation of the study was unable to include all hospitals by their level of care because of the sampling method used which was simple random sampling.

## 10. Conclusions

The study showed that most of outpatient's service users were pay OOPME (87.8%) with high mean of out of pocket medical expenditure compared to the mean monthly per capita household income and identified some significant determinants of out-of-pocket medical expenditure among outpatients, namely, place of residence, educational level of household head and sex of the household. Even though, the presence of significant levels of OOP shows that the population is most probably wealthy to afford healthcare: however, payment through OOP is not an equitable or efficient health financing mechanism. So, If Ethiopia is to move towards achieving universal health coverage (UHC), there is a need for the country to devise a strategy to protect and prevent such households from financial risk. Importantly, based on international literature, the country should rely more on health financing mechanisms that can be pooled equitably and that do not impose an undue hardship on the poor and vulnerable.

## 11. Recommendations

Poor Health Care Financing remains a major challenge for the health system of Ethiopian which leaves the households vulnerable to impoverishment and catastrophic health expenditures that occurred due to OOP expenditures so, how to reduce the current level of OOP medical expenditure without reducing access to the needed health care services(17).

Based on the findings from the study, the following recommendations would be pointed out: -

- Government should urgently ensure financial protection and realize universal health coverage by acting on risk pooling mechanism – for example, strengthening and fully implementation of community-based health insurance (CBHI) and start SHI mechanisms – that can help in reducing the magnitude of OOP medical payments since there was a big difference between the insurance premium paid per year and money incurred by individuals from out of pocket expenditure for those do not have insurance.
- More research is needed on out of pocket health care expenditure and associated factors as there was no sufficient study conducted in the country.

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## 13. Annex 1: Information sheet

Addis Ababa University, College of Health science department of health Economics Study prepared to collect data on Magnitude and Determinants of Out -of –Pocket medical Expenditure Among Out Patients in public hospitals in East shoa zone, Oromia, Ethiopia.

**Introduction**

**G**ood morning/good afternoon! My name is Deraro Bedado. This information sheet is prepared to explain the research project that you are asked to join with a group of research investigators. Therefore, I am here today to collect data on the Magnitude and Determinants of Out -of –Pocket medical Expenditure Among Out Patients in public hospitals in East shoa zone. The study is being conducted by Ato Deraro Bedado from Dukem Town Health office, from the Department of planning and budgeting to attain a post-graduate program.

**The purpose**

The study is institutional based correctional design to assess Magnitude and Determinants of Out -of –Pocket medical Expenditure Among Out Patients in public hospitals in East shoa zone. You are being asked to take part in this study and to respond genuinely. Your cooperation and willingness are greatly helpful in identifying Magnitude and Determinants of Out -of –Pocket medical Expenditure among outpatients in public hospitals. you will be benefited from this study results in the future in order to decide which methods health expenditures to be used and no risk faced by involving this study.

**Incentives/Payment for Participating:**

You will not be provided any incentives or payment to be gained by taking part in this project.

**Confidentiality**

All information given by you will be kept strictly confidential. The information collected from this research project will be kept confidential. Information will be accessed by the researcher and research assistant only.

**Right to refuse or withdraw**

Your participation is voluntary and you are not obligated to answer any question you do not wish to answer. If you feel discomfort with the question, it is your right to drop it any time you want.

**Persons to contact:**

If you have questions regarding this study I would like to be informed of the results after its completion, please feel free to contact the principal investigator.

**Address of the principal investigator:**

**Name: DerarоBedado**

- Cell phone: +251 913668121
- Email: derarobed@gmail.com

**Annex 2: Consent form**

I am giving my consent to participate in the study entitled "Magnitude and Determinants of Out - of –Pocket medical Expenditure Among Out Patients in public hospitals in East shoa zone". I have been informed that the purpose of this study. I have understood that participation in this study is entirely voluntarily. I have been told that my answers to the questions will not be given to anyone else and no reports of this study ever identify me in any way. I have also been informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks and only takes about 20-30 minutes.

I understood that Deraro Bedado is the contact person if I have questions about the study or about my rights as a study participant.

**I thank you for your genuine responses and cooperation**

**Annex 3: Questionnaire**

**Annex II: Data collection tool in the English version**

Magnitude and Determinants of OOPME among outpatients in hospitals working in East shoa Zone, Ethiopia: Addis Ababa, Ethiopia 2018/19.

| | Name of the hospital: _____<br>Interviewer's name: _____<br>signature: _____ | Code no: _____<br>Date of the interview: ____/___/___ |
|---|---|---|
| Code | Questions | Coding categories/Response |
| I | Socio-demographic characteristics of the patient (Patient level) | |
| 100 | Where is your residence area? | □1 Urban □ 2 Rural |
| 101 | Sex | □1 Male □2 Female |
| 102 | How old are you? (in years) | □1 <18 □2 18-64 □3 65+ |
| 103 | What is your marital status? | □1Single □2Married □3 Others |
| 104 | What is your level of education? | □1 No formal education □2 1-8 Grade<br>□3 9-12 Grade □4 College and above |
| 105 | What is your occupation (individual)? | □1Farmer □2Government employee<br>□3Private employee □4Own private business<br>□5Retired □6Housewife/Husband □7Student<br>□8Others (specify)_____ |
| | Socio-demographic characteristics of the patient (**Household)** | |
| 200 | What is the sex of household head? | □1 Male □2 Female |
| 201 | What is the age of household head? (in years) | □1 <24 □2 24-44 □3 45-64<br>□4 65+ |
| 203 | What is the educational level of the household head? | □1 No formal education □2 1-8 Grade<br>□3 9-12 Grade □4 College and above |

| | | |
|---|---|---|
| 204 | What is the household head occupation (HH head)? | □1Farmer □2Government employee<br>□3Private employee<br>□4Own private business □5Retired<br>□6Housewife/Husband □7Student<br>□8Others (specify)_____ |
| 205 | What is household composition? | 1 Children (<16years old) _____<br>2 Adult (17-64 years old) _____<br>3Geratrics (>65years old) _____ |
| 206 | What is the source of drinking water in your household? | **Improved source ----------1**<br>(**if** Piped into dwelling/yard/plot, Piped to a neighbor Public tap/standpipe, Tube well or borehole Protected dug well, Protected spring Rainwater, Bottled water, improved source for drinking)<br>**Unimproved source ----------2**<br>(**if** Unprotected dug well, Unprotected spring Tanker truck/cart with small tank Surface water) |
| 207 | What is the type of sanitation facilities or toilets you have? | **Improved ----------1**<br>(If, Flush/pour flush to piped sewer system Flush/pour flush to the septic tank<br>Flush/pour flush to pit latrine, Ventilated improved pit (VIP) latrine<br>Pit latrine with slab, Composting toilet) if not<br>**Unimproved sanitation----------2** |
| 208 | What is the Reason for Seeking health care? | Final diagnosis---------- |
| 209 | Types of Illness | □1 Acute □2 Chronic<br>□3 Injuries/accidents |
| | | |
| II | **Patients/Households Health insurance status** | |
| 300 | Do you have any health insurance? | □1----------Yes □2----------No |

| | | |
|---|---|---|
| 301 | If yes, Which health insurance company | □1 ----------CBHI □2---------- Private HI |
| 302 | How much money do you pay on average? | ----------ETB/Monthly<br>----------ETB/Annually |
| III | **OOPME made by Patients/Patient's household and their income (Please put your answer in ETB)** | |
| 400 | Over the last 1 month, how many times did you visit the hospital for OPD service providing health facilities for your illness? | _____times |
| 401 | Have you paid money from your own pocket to receive the services? | 1□----------Yes □2----------No |
| 402 | During this OPD visit, how much ETB did you spent for the following services: (Please put your answer in ETB) | Total_____<br>1Consultation cost_____<br>2Investigation/imaging cost_____<br>3Medicines and medical supply cost_____<br>4Transportation cost_____<br>5.Food cost_____ |
| 403 | With whom do you come to health facility (if with caregiver not the member of your family, please fill the cost) | 1. caregiver<br>monthly income _____<br>2. Alone |
| 404 | How much is the patient's current monthly income? | _____ETB/month (if not, proceed to next Question number,) |
| 405 | How much is the household total monthly income? | _____ETB/1 month<br>_____ETB/12 months |
| 406 | Total days wasted in order to get the medical services for this illness? | 1. One day<br>2. Two days<br>3. Three and above days |

| | | |
|---|---|---|
| 407 | What is your Source of finance for the service you received? | □1 Current income □2 Saving<br>□3 Family support □4Borrowing<br>□5Asset sale |
| **IV** | **Patient's household food consumptions (Please put your answer in ETB)** | |
| 500 | On average in the last 7 days, how much does your household spend for food and food items; (staple foods, fruits and vegetables...) | _____ETB/Week<br>_____ETB/Month |

**Thank you very much for your time and answers!**

**Afaan Oromo version**

**Annex: 1 The translation of questionnaire's into Local Language (Afaan Oromo)**

**Unkaa Ragaa Odeeffannoo (Information sheet)**

Akkam ooltan/bultan, aaga badhaadhaa! Ani Daraaroo Badhaadhoo Jedhama. Kan dhufes waajjira Eegumsa fayyaa Magaala Duukam irraayyi. Kaayyoon unkaa raga odeeffanoo kana qo'annoo barnoota digrii sadarkaa lammaffaa mata duree Hangaa fi waantoota baasii faayyaa irratti dhiibbaa fidan addaan baasuun filanno gabatee keessatti qophaa'ee kaa'ame kan gaaffi dhiyaate deebii ta'uu danda'uu irratti maruu ykn mallatto "x" itti gochuu dha.

Maqaa Qu'ataa:Daraaroo Bdhaadhoo (BSC)

Maqaa Gorsaa: Dr.Alamaayyoo Dassaaleny (PhD)

Qaama Inpoonsara ta'ee: MEFF

**Galma Qu'anno (purpose)**

Qu'annoon kun ragaa jiruu irratti hundaa'ee Hospitaalota moottummaa Godina Shawa bahatti argaman keessaati tajaajilamtoota tajaajila yaala deddeebiif dhufan irratti Hangaa fi wantoota baasii tajaajila fayyaa irratti dhiibaa fidan xinxaluudhaan arganno bu'aa isaa addaan baasanii akka qaama ilaaluun furmaata argachuu danda'uu yaada dhiyeessuu dha.

**Sodaa/Iddoo haali mijaa'an hin jirree**

Maqaan keessan unkaa odeeffanno kana irratti hin barreeffamu. Odeeffannoo isiin unkaa kana irratti guutan waa'ee qu'anno kanaan alaa dhimma biraatiif dabree hin oluu, qaama biraatti dabree hin keennamus. Waan kana irratti waan hirmaataniif rakkoon tokko kan dhufuu hin jiruu, saa'aatii isaa guutuuf hin irraa fudhatuun alatti. Yeroon unkaa odeeffannoo kana guutuuf isin barbaachisuu daqiiqaa 20-30tti.

**Faayidaa argamuu**

Tajaajilamtoon bu'aa qoranno kan irraa fayyadamoo ta'uun ni mala. Arganno bu'aan qoranno kana baasii tajaajila fayyatiif amma kanfalaa jirtan addaan baasuun kan inshuuransii fayyaa naannoo keessan jiruun wal bira qabuu issa xiqaa keessaa fudhachuun fayyadamoo ta'uu nimaltuu.

**Onnechiiftuu/Kaffaltii**

Ragaa kana waan guutaniif, kaffaltiin dhimma kanaan walqabatee onnechiiftuu/kaffatiin isinii raawwatamuu hin jiru.

**Iciitii Eeguu**

Odeeffanoon tajaajilamtoota gaafanno kana irratti hirmaataniin guutamee iciitiin isaa ofeegganoo cimaan kan eegamuu dha. Odeeffanno kana kan hubachu danda'uu abbaa qu'annoo gaggeessu qofaadha.

**Mirgaa dhiisuu fi keessaa bahuu**

Ragaan kun kan guuttamuu fedhii qofa irratti hundaa'ee waan ta'eef, hojjetaan yeroo kamiyyu yoo barbaade dhiisuu yookiin addaan kuutuu mirga qaba.

**Namaa qunnamuu dandeessan**:-

Dhimma odeefaanno gaaffi qoranno kanaan walqabatee yeroo unkaan guutameen booda bu'aan isaa abbaa qu'anoo kana gaggeessee qofaan isinitti himamuu ni danda'ama. Rakkoo tokko malee osoo homaa isinitti hin dhagahameen gaafachuu mirgaa guutuu qabdaan.

Teessoo Dursaa Qo'annaa

**Maqaa:Daraaroo Badhaadhoo**

Lakk.Bil. Mobaaylii: +251 913668121

Email: derarobed@gmail.com

Gorsaa: Dr. Alamaayyoo Dassaleny

Lakk.Bil. Mobaaylii: +251913579507

Email: alemayehu4all@gmail.com

Annex 2:- **Waliigaltee taasifame**

Yeroo raga kana guutuuf ofitti fudhuu gaaffilee hangaa fi waantoota baasii tajaajila fayyaan waliqabatan irratti dhiibbaa fidan mata duree qu'anna jedhuu kan dhaabbilee fayyaa hospitaala ummataa Godina shawaa bahaa keessatti argamuu irratti kan hirmaadhee fi kan guutuu ta'uu waligaltee jira.

Kana kan waliigaltee raawwadhees ragaan kun gama kamiinuu anaa irratti kan dhiibba hin finnee ta'uu fi guutumaan guututti feedhii kiyyaa waan ta'eef. Ragaan deebbiii gaaffi kanaafi kan kennes iciitiin garaa namni tokko hin beekneen ta'uu waan natti himamee fi beekeef.

Gara biraatiin wantiin hubadhee Obbo Daraaroo Badhaadhoo waa'ee kanaaf kan qunnamuu dandeenyuu ta'uu fi gaaffii kamuu dhimma kana ilaachisee gaaffachuu kan mirgaa qabnu ta'uu dha.

**Baayee Galatoomaa waan tolaan hirmaanaa taasiftaniif!**

**Annex III: Gaaffannoo Oddeeffannoo Afaan Oromo**

Mata duree Hangaa fi wantoota baasii mallaqa yaala deddebiif kiisii keessaa bahu irratti dhiibba geessan kan hospitaalota godina shawaa bahaa keessaa jiranitti tajaajilaaf dhufan shawaa baha Oromiya,Etiyoophiyaa 2019.

| | Maqaa hospitaalaa: _____<br>Maqaa gaafataa: _____<br>Mallattoo: _____ | Lakka addaa: _____<br>Guyyaa gaafannoo: ____/___/___ |
|---|---|---|
| Lak. Addaa | Gaaffii | Deebii |
| I | Amaloota duubee dhukkubsataa (sadarkaa dhuunfaa) | |
| 100 | Iddoon jireenyaa keessan eessa? | □1 Magaala □ 2 Baadiyaa |
| 101 | Saala | □1 Dhiira □2 Dhalaa |
| 102 | Umriin keessan meeqa? (wagaadhaan) | □1 <18 □2 18-64 □3 65+ |
| 103 | Haalii fuudha heerumaa keessan? | □1kophaa □2kanfuudhe/kan heerumtee<br>□3 kan biroo |
| 104 | Haalii barnootaa keessaan hanga meeqaatti? | □1 barnoota qalamaa hinqabu □2 kutaa1-8<br>□3 kutaa 9-12 □4 kolleejjii fi isaa oli |
| 105 | Hojiin keessan maalii dha? | □1 Qotee bulaa □2Hojjetaa mootummaa<br>□3 Hojetaa dhaabata dhuunfa □4 Hojii daldala dhuunfa □5 Soorama kan bahee □6<br>Haadha manaa/abba mana □7 Barataa □8<br>Kan biroo (yaa ibsamu)_____ |
| | Amaloota duubee dhukkubsataa (**sadrkaa maatii)** | |
| 200 | Saala | □1 Dhiira □2 Dhalaa |
| 201 | Umriin keessan meeqa? (wagaadhaan) | □1 <24 □2 24-44 □3 45-64<br>□4 65+ |

| | | |
|---|---|---|
| 203 | Haalii barnootaa keessaan hanga meeqaatti? | □1 barnoota qalamaa hinqabu □2 kutaa1-8<br>□3 kutaa 9-12 □4 kolleejjii fi isaa oli |
| 204 | Hojiin keessan maalii dha? | □1 Qotee bulaa □2Hojjetaa mootummaa<br>□3 Hojetaa dhaabata dhuunfa<br>□4 Hojii daldala dhuunfa □5 Soorama kan bahee<br>□6 Haadha manaa/abba mana □7 Barataa<br>□8 Kan biroo (yaa ibsamu)_____ |
| 205 | Baayyina maatii mana keessa waliin jiraatan meeqa? | Waliigala ----------<br>1 Daa'iman waggaa 16 gadii) _____<br>2 Nama guddaaa waggaa (17-64 ) _____<br>3 Maanguddoo wagga 65olii) _____ |
| 206 | Maddii bishaan dhugaatii maatii keessanii maalii dha? | **Maddaa fooyya'aa ----------1**<br>(yoo bishaan sararaa,bishaan boola ittifamaa bishaan burqa ittifamaa,bishaan boolaa fi roobaa maddaa qulqulluu ta'e)<br>**Maddaa fooyyee hintaane ----------2**<br>(kaneen gubbaatti ibsameen ala kan qulqullina qabu yoo hin taanee tankerii xixxiqoo harkaan waraabamu ta'e immo) |
| 207 | Akkaakkuun mana fincaanii keessan isa kam? | **Fooyya'aa ----------1**<br>(yoo kan bishaan qabuu. kan bishaan itti naqamuu.tankerii bishaani kan qabuu fi mana kan qabuu, Flush/pour flush to piped sewer system Flush) Kanaan ala yoo ta'e immo<br>**Kan fooyya'aa hin taane----------2** |
| 208 | Dhibeen sababa deemsa hospitaalaatif ta'ee maaliidha jedhamtan? | Kan haakimaan adda bahee---------- |
| 209 | Qooddii gosa dhibee | □1 kan ammaa/Acute □2 kan bubule/Chronic |
| II | **Akaakuu inshuuraansii fayyaa dhukkubsataa/Maatii** | |
| 300 | Inshuuraansii fayyaa qabdu? | □1----------Eeyye □2----------Lakki |

| | | |
|---|---|---|
| 301 | Gaafiin 300 yoo eeyyee ta'e inshuuransii fayyaa isa kam? | □1 ----------IFH □2---------- IFDH |
| 302 | Inshuuransiidhaaf mallaqa meeqa kanfaltu? | ----------mallaqa/ji'atti<br>---------- mallaqa/waggatti |
| III | **Galii fi mallaqa kiisii keessaa dhukkubsataan /bulchaan manaa kanfalu (mallaqaan yabarra'u)** | |
| 400 | Ji'atti dhukkubbi isa amma kanaaf yeeroo meeqa dhaabata fayyaa deemtan Kanaan dura? | Yeeroo/marsaa_____ |
| 401 | Tajaajila kana argachuudhaaf mallaqa kiisii keessan keessa kanfaltaniirtuu? | 1□----------Eeyyee □2----------Lakki |
| 402 | Yaala deddeebii amma kanaaf mallaqaa tajaajila adda addaatiif baasitan meeqa? | Waliigala _____<br>1 kaardiidhaaf _____2 qorannoo laboraatorii _____<br>3 Qorichaa fi meeshaalee yaala _____<br>4 Geejibaaf _____ |
| 403 | Galiin dhukkubsataa yeeroo ammaa meeqa? | _____mallaqa/Ji'atti (hin jiru taanaan gara 403 cee'aa) |
| 404 | Nama wajjiin dhufte mo qofaa keeti?( nama maatiin ala ta'e wajjiin taanaan yaaguutamu) | 1. Nama yaalchisu waliin<br>Galii ji'a _____<br>2. kophaa |
| 405 | Galiin maatii waliigaa yeeroo ammaa meeqa? | _____mallaqa/ji'atti<br>_____mallaqa/waggatti |
| 406 | Tajaajila yaala kana argachuudhaaf guyyaa meeqa isinitti fudhate? | 1. Guyyaa tokko 2. Guyyaa lama<br>2. Guyyaa sadii oli |
| 407 | Maddii mallaqa tajaajila yaala kana ittiin argatee eessaayi? | □1 Galii ji'aa irraa □2 Qusannaa qabu irraa<br>□3 Deeggarsa maatii □4 Liqii<br>□5 Gurgurtaa qabeenyaa |
| **IV** | **Baasii nyaataa kan maatii (mallaqaan yaabarreefamuu)** | |
| 500 | Giddugaleesaan baasii guyyoota 7 (turban) darbanii nyaataaf kaneen akka nyaata,kuduraa fi muduraa …maatii keessaaniif meeqaa baastan? | _____mallaqa/ji'atti<br>_____mallaqa/waggatti |

**Yeeroo keessanii fi deebii nuulaataniif guddaa galatoomaa!**