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The Effect of Fee Waiver System on Health Service Utilization and Associated Factors Among Households in Farta District, Northwest Ethiopia, 2022

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BAHIARDAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCE

SCHOOL OF PUBLIC HEALTH

**The Effect of Fee Waiver System on Health Service Utilization and
Associated Factors Among Households in Farta District, Northwest
Ethiopia,2022**

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**A THESIS SUBMITTED TO THE DEPARTMENT OF Health Systems
Management and Health EconomicS, SCHOOL OF PUBLIC HEALTH,
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JANUARY 2023

BAHIARDAR, ETHIOPIA

BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCE
SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF GENERAL PUBLIC HEALTH
THE EFFECT OF FEE WAIVER SYSTEM ON HEALTHCARE
UTILIZATION AND ASSOCIATED FACTORS AMONG
HOUSEHOLDS IN FARTA DISTRICT, NORTHWEST ETHIOPIA,
2022

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ABSTRACT

Background: Although the Ethiopian government has been implementing fee waiver programme to increase health service utilization there is still a gap on inclusion of indigents to the system **Objective:** The purpose of this study is to assess the effect of fee waiver system on health service utilization and associated factors among households in Farta District, Northwest Ethiopia, 2022.

Methods: A community based comparative cross-sectional study was conducted from October 1 to November 14, 2022. The data was collected by using face to face interview. Using multi-stage random sampling technique a total of 1351 households were included in the study. Data was collected by epicollect5 and analyzed by using SPSS version 26 and STATA version 15 for binary logistic regression and propensity score match analysis respectively. Wealth status of households was computed by principal component analysis. At a p value less than 0.05, variables in multivariate logistic regression were considered as significant.

Results: A total of 1351 respondents (681 fee waiver users and 670 out of pocket payers) were interviewed, with an overall response rate of 96.78%. The overall health service utilization was 52.7% (58.1% for fee waiver users and 52.7% for out of pocket payers). educational level (at 95%CI, primary (AOR=2.01 (1.17, 3.46)), secondary (AOR=4.5 (2.44, 8.30)) and college and above (AOR=5.44(2.56, 11.56))), family size(AOR=0.12; at 95% CI (0.07, 0.22)), travelling time(AOR = 4.7 at 95% CI: (3.21, 6.86)) and travelling cost (at 95%CI ,no cost (AOR=3.49 (1.97, 6.20)),cheap (AOR=2.83 (1.53, 5.22))) were associated to the health service utilization among out of pocket payers. Having chronic disease (AOR=1.73 at 95%CI (1.12, 2.66)), Educational level (at 95%CI, able to read and write (AOR=. 1.71 (1.1, 2.68)), secondary (AOR=2.16 (1.24, 3.75)) and college and above (AOR=4.03 (1.78, 9.13))), travelling distance (AOR=1.44 at 95% CI (1.023, 2.02)) and Travelling cost (at 95%CI, no cost (AOR=4.26 (2.09, 8.65)), cheap (AOR=4.13 (2.38, 7.16))) were associated factors among fee waiver beneficiaries. Finally, being a fee waiver user contributes to a 14.9% (t= 4.19) increase in health service utilization.

Conclusion: health service utilization among fee waiver users were higher than out of pocket payers. Educational level, family size, traveling time, traveling cost, chronic disease and

payment mechanism were significantly associated with healthcare utilization among overall respondents. As a result, it is preferable to reduce transportation costs, improve transportation accessibility, raise community educational levels, raise awareness, and strengthen fee waiver programs for the poor, which may increase respondents' health service utilization level.

Key words: Health service utilization, fee waiver, Out of pocket payment

ABBREVIATIONS AND ACRONYMS

CBHI	Community Based Health Insurance
FU	Fee Waiver Users
HCF	Healthcare Financing
HHS	Households
HSFR/HFG	Health Sector Financing Reform/Health Finance and Governance
HSU	Health Service Utilization
LMIC	Low and Middle Income Countries
OOP	Out Of Pocket
SPSS	Statistical Package for Social Science
SSA	Sub-Sharan Africa
UHC	Universal Health Coverage
US\$	United States Dollar
WHO	World Health Organization

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1. INTRODUCTION

1.1 Background

Global health funding has consistently increased over the last two decades and is expected to continue to rise in the future, albeit at a slower rate and with significant gaps in per-capita health spending between countries(1).

Equity in healthcare finance is investigated by looking into services based on people's wants and financial capacity to pay for them. As a result, an equitable healthcare system provides equal services to persons of various social and economic statuses and expects equal remuneration(2).

Financial protection necessitates funding health services in such a way that individuals and households are protected against negative economic consequences of paying for healthcare, which are primarily incurred through out-of-pocket (OOP) expenses (3).

According to a recent report done by WHO 10% of the total household income is spent on healthcare services by almost 800 million people. Additionally, due to out-of-pocket expenses for their medical care, about 100 million individuals are still living in extreme poverty. Moreover every year, 5.7 million people in low- and middle-income countries die from an insufficient level of medical care, and 2.9 million people die from not having access to health care(4). The World Health Organization (WHO) estimates that US\$86 per capita is the minimum amount required to provide basic health care in sub-Saharan Africa. However, in Ethiopia per capita health spending only minimally grew by 10% between 2015/16 and 2016/17 to ETB274 (US\$12) in 2016/17. The country has not attained the Abuja target of allocating 15% of the budget to health care(5).

According to a survey conducted in 130 countries in 2016, there are 5.4 outpatient visits made per person per year worldwide(6). In southern Ethiopia, the average OPD visit rate in 2018 was only 0.18 new visits per person per year(7). This is substantially below the minimum level recommended by the World Health Organization and the Millennium Development Goals for sub-Saharan African nations, which is 3 to 4 outpatient visits(8). Further evidence from Ethiopia revealed that in Dessie town and South Achefer Woreda, the overall healthcare usage rate was 41.8% and 38.89% respectively (9, 10). Another study done in Tigry Ethiopia also reported that

the overall health care utilization was 44.3% (41.9 % was out of pocket users and 51.5% was fee waiver beneficiaries)(11).

The amount of healthcare utilization is influenced by a number of factors, including age, income level, employment status, insurance coverage, chronic diseases, health status, wealth status, fee waiver system and many more other factors. These elements are categorized under the Anderson healthcare use model as need, enabling, and predisposing factors.(12).

Ethiopia established mechanisms for providing free services to the poor through a fee-waiver system, as well as free provision of selected public health services (through exemption), such as health education and tuberculosis treatment, and services targeted at specific groups(e.g. Immunization of children under the age of five). There was, however, a pressing need to systematize and standardize these services. Local governments, for example, have been (and still are in some regions) giving fee waiver certificates to the impoverished, which were confirmed by local social justice systems at the time of sickness. As a result, the poor's ability to access care was hampered by lengthy procedures. This was not true for people in higher income individuals, and consequently, the system fostered health-care disparities(13).

Fee waiver beneficiaries are often identified, screened, and certified by district administrations, who are also responsible for allocating appropriate cash to cover their health-care needs. Beneficiaries are entitled to fee-free health care under this structure, which does not jeopardize the financial stability of the health facilities providing the services. Amhara region uses standardized fee waiver system, which allows its disadvantaged citizens better access to health care(14). However, the country still has a big issue with providing for the poor's medical requirements. Less than 10% of the poorest citizens of the country have thus far benefited from the fee waiver program(15).

Moreover According to a research conducted in Ethiopia, 350,000 people are thought to be living in poverty as a result of OOP direct medical costs(16).as many evidences showed that Morbidity, disability, and death can be decreased by seeking early healthcare utilization and sticking with a successful course of therapy(17).

1.2 Statement of problem

In Ethiopia healthcare service utilization rate is low. Studies done in southern Ethiopia showed that the overall healthcare utilization rate was 77.2%(18). Another study done in Dessie Amhara region the healthcare service utilization rate was only 41.8%(10). This is low level of utilization that efforts need to be made to increase utilization of modern health service in Ethiopia.

Ethiopia has made health care available to the poorest citizens at no cost. However, the system is vulnerable to 35.8% partiality and 44.5 % inappropriate treatment, stigma, and discrimination by healthcare professionals towards fee waiver users. Under-coverage and leakage affect 36% and 14.7% of the population, respectively (11).

Even though Ethiopia's government has been executing the fee waiver program since 1998 to provide financial risk protection and improve the impoverished society's access to health care, these goals remain one of the country's biggest problems for the Ethiopian health system. This program provides healthcare access for only less than 10% of the total poorest population in the country(15).

In Ethiopia, medical expense impoverishes a significant number of the population. Even though the country had piloted and initiated many reforms, like fee waiver system and community-based health insurance, a significant proportion of the poor population still lacks financial protection to access healthcare service(19). Identifying the gaps, and having regular and current data on fee waiver beneficiaries and out of pocket payers HHs are important for evidence-based decision making and baseline data for any stakeholders to take action. As evidences showed that there is little studies done on the effect of fee waiver system on health service utilization and associated factors which is not enough study in Ethiopia. Therefore the aim of the study was to assess the effect of fee waiver system on health service utilization and associated factors among households in Farta district, south Gondar, northwest Ethiopia.

1.3 Significance of the study

It is important to study fee waiver beneficiaries compared to out of pocket payers and their effect on health service utilization among household level. This study will enable to identify barriers/ factors that will hinder to health service utilization and its implementation especially to the fee waiver beneficiaries households. Moreover, the study will be useful as resources and references for the government's efforts to increase the poor's access to healthcare, which will result in the realization of UHC. The primary beneficiaries are policy makers. Moreover the government and persons with low socio-economic level will also be beneficial from this programme.

Besides it will give clues for south Gondar health office, healthcare service providers and District health office to review the activity based on the findings and recommendations of this study. In order to monitor and assess the system's appropriate operation, it will also help to generate information that can be useful to comprehend the current state of the fee waiver system. Hopefully the main finding of this study will contribute to Ministry Of Health, non-governmental organizations, and policy and decision makers to take corrective action and measures in the healthcare service programme. Additionally, it will contribute to the theory and methodology of health service management by supplying fresh scientific knowledge to the scientific community that is researching or putting pro-poor health services financing strategies into practice.

2. LITRETURE REVIEW

2.1 Healthcare financing reform in Ethiopia

The ability to collect and manage financial resources for health systems is a critical issue for developing countries, even while universal health coverage offers great prospects for eliminating poverty and securing the health care needs of a country's lower income groups(20, 21). Governments of these nations, particularly those in Sub-Saharan Africa, are presented with a conundrum regarding the best way to provide their citizens with access to just and inexpensive health care services given the stark underfunding of their health systems(22).

Numerous health equality studies have identified inadequate financial protection and lack of accessibility as factors that prevent the poor and rural people from using healthcare services(23). in1998, Ethiopia had supported a health care finance strategy that called for a variety of reform measures. It is a crucial piece of policy for the implementation of health financing changes. The main goal of the implementation of the health care financing reform is to address the overall infrastructural as well as the overall dysfunctional health care system of the country(24, 25).

The government acknowledged that health cannot be financed exclusively by government and emphasized the importance of promoting cost sharing in the provision of health services(26).This will be accomplished by finding and obtaining resources that can be devoted to preventive, promotional, curative, and rehabilitative health services, increasing absolute resources to the health sector, increasing efficiency in the use of available resources, and promoting sustainability of health care financing. It will also be accomplished by improving the quality and coverage of health services(27).

The majority of Ethiopians lacked physical access to healthcare providers, and the poorest sections of the population found it extremely harder. Because of the country's constrained overall budget, health care was not adequately funded. The delivery of health services was also ineffective and unfair, and the standard of care was often low(25).

The country's main health finance problems were related to the scarcity of health resources, the overreliance on direct payments when people needed care, and the inefficient and unequal distribution of resources. Regional legislations made it legal to carry out these reform projects. In order to achieve long-term sustainability, the strategy acknowledged that health care should be

paid through a variety of financing mechanisms. The reforms include implementing revenue retention and use at the health facility level, standardizing exemption services, setting and reviewing user fees, introducing a private wing in public hospitals, outsourcing nonclinical services, and fostering health facility autonomy through the introduction of a governance system(14, 28).

The primary goal of the revenue is to address the gaps in human resources, medication, and medical equipment in order to give better and more effective service. It is used in accordance with the rules and laws of financial management (14, 29). In order to ensure more equitable health service delivery, HSNR/HFG has consistently urged District officials to allocate enough budget to pay facilities for the services they provide to people who qualify for fee waivers. As a result, the amount of government cash allocated at the District and regional levels increased over time as more recipients of fee waivers were selected (29).

2.2 Fee waiver system

One of the key elements of the health care finance reform is the fee waiver system. In public health facilities, the use of fee waiver systems is adopted to increase access for people who cannot afford the cost of healthcare, improve financial stability for healthcare facilities, and enhance the quality of healthcare services(23).

Ethiopia established procedures for providing certain essential public health services (health education and treatment of tuberculosis patients, immunization of children under the age of five) free of charge to the poor through a fee waiver system and to all residents through exemptions from fees. To lessen disparities in access to healthcare across areas, the reform comprises systematizing the fee waiver system, including the identification and certification of people who are eligible(30).

The district-Kebeles fee waiver selection committee uses procedures to identify the poor, and the District/city administration fee waiver selection committee examines and organizes the list of potential fee waivers it has received from each Kebeles fee waiver selection committee before approving the final beneficiaries. The following criteria are used by Kebeles committees to identify the households that qualify for fee waivers. For rural places Size of land holding, number of dependents, number of livestock holding, Level of harvest, physical capability to work and earn a living, earning less than minimum wage, and household size in proportion to

land holding/income. Both urban and rural areas use different objective criteria in the area to identify the poor. Kebeles fee waiver selection committees, District fee waiver selection committees, community, mobilization, labor, and social affairs bureau/office, food security, disaster prevention and preparedness commission/office, and all have specific duties and responsibilities when it comes to fee waiver selection processes(14, 30).

The waiver certificate is only valid for one year. Based on the principle that "no service is free," there is no free care in the health facility; instead, District provides reimbursement every three months through a charge waiver. The regional health agency also pays hospitals. Additionally, each facility needs to have a way to record information to make the reimbursement process easier. District health office, District/city administration, board/governing body, and health facilities receive quarterly reports on the services provided to holders of waiver certificates. These individuals and households are given waiver certificates from District(31).

2.3 Magnitude of Health service utilization

According to a study conducted in Ghana, 67.9% of public health services did not have access to medications (32).another Study done in Gamo Gofa showed that the overall health service utilization (HSU) among fee waiver beneficiaries was 59.6%(33). Evidence in Saesie Tsaeda-Emba District, Tigray Region showed that the respondents overall health service utilization both from fee waiver beneficiaries and out of pocket (OOP) payers were 44.3 %. From those overall utilization rate, fee waiver beneficiaries were 2 times more likely to use healthcare utilization than out of pocket payers (11). More over another study done in Daunt District reported that the HSU among fee waiver users were 60.98%(34). In the previous study the overall healthcare service utilization among households in Dessie community was found to be 41.8% (10),even in rural south Achefer District 39.89% of healthcare utilization rate (9).

2.4 Factors associated with health service utilization

2.4.1 Predisposing factors

Evidence showed that sex is significantly associated with health service utilization. A study in South Africa showed that women were roughly twice more likely to seek healthcare service than men(35). Study done in Ghana stated that females/women used more health service than men (36). Another study done among older adults in Ghana showed that level of residence was not associated factor to healthcare utilization (there is no difference in healthcare services in rural and urban residences) (37).The other study done in Tehran revealed that age , household income and employment status were significant factors affecting health service utilization (38). A study done in SSA showed that participants with 6 or more family size and participants lived in rural residents were not use health services well (39).

According to the study done in Addis Ababa age, educational attainment, family size , visit to private health facilities were significantly associated with fee waiver beneficiaries health service utilization(14). Moreover, Another study done in Saesie Tsaeda-Emba District, Tigray Region, marital status, educational level, family size was associated to the health service utilization among out of pocket payers. However there is no variable that is associated to healthcare utilization among fee waiver beneficiaries (11). Furthermore the other study done in dawnt district also showed that Health Services Utilization was significantly associated with family size and place of residence among fee waiver beneficiaries(34).

2.4.2 Enabling factors

A study done in Papuans, Indonesia showed that travelling time was significantly associated with health service utilization (40). A study done in Atwima Nwabiagya District of Ghana showed that low income level and poor transport system/distance reduces health service utilization among the respondents (41). Moreover the study done in Gamo Gofa showed that the failure to use fee waiver certificate was significantly associated with procedures at the public health facility, referral to a higher level , households' transportation costs and other non-medical costs(33). Another evidence in dawint District also showed that perceived distance, travelling time and perceived transport cost were associated factors to health service utilization among fee waiver beneficiaries(34).

2.4.3 Need factors

A study in Albania stated that 63% of the respondents were suffered from chronic disease (42).The study done in Shanghai, China reported that respondents who has poor health status and chronic disease had more health service utilization than their encounter part (43). Moreover, in the study done in rural South Africa, participants who had health problems with chronic diseases used more health services than acute conditions. (44). Another study in South Africa revealed that 75% of the respondents have not used public health services because of its low quality (35). the other study done in dawint District reported that Participants with a poor perception of their health used health services 6.26 times more frequently than those with a better perception(34). Furthermore another study done in Dessie also revealed that severe perceived severity of illness and having chronic health problem was associated factors to health service utilization(10).

2.5 The effect of fee waiver system on Health service utilization

A study conducted at an Indian public hospital providing tertiary care showed that (7.23%) of indigent hospitalized patients made requests for free surgical consumables, which were not always available for all patients. The provision of consumables was free and every request for a waiver or exception was granted(45). Study conducted in Addis Ababa revealed that 81% of the 273 respondents who used the waiver privilege reported that their usage of health services rose following its implementation, whereas 64% think that the free health care provided was not comparable to that provided to those who paid for the service. Among the 94 individuals with health issues who went to a medical facility but did not use their waiver certificate, 40.4% thought the services were of poor quality, 18.4% thought there were no adequate drugs, 7.4% thought there was no service available in a public health facility, 21.3% thought the provider has a poor staff approach, and 12.8% had other explanations like forgetting their waiver certificate(14). Another study done in Gamo Gofa, poverty certificate was only accepted by a small number of health facilities, and beneficiaries were less likely to receive free care through referral networks. Due to these factors, 56% of respondents paid for things out of their own pockets, while 21% received support from family members(33). Furthermore the other study done in Addis Ababa also showed that the start of the program had a significant positive impact on the city's underprivileged population. However, it has not yet proven effective in addressing the people in need, providing services, and shielding the poor from hardship. Lack of a thorough

monitoring and accountability system, inadequate program administration, and inadequate health facilities capability were found to be the main problems that hindered its effectiveness(23).

3. CONCEPTUAL FRAMEWORK

Conceptual frame work of the study is adopted from Andersen and Newman model of healthcare utilization with few modifications(46).

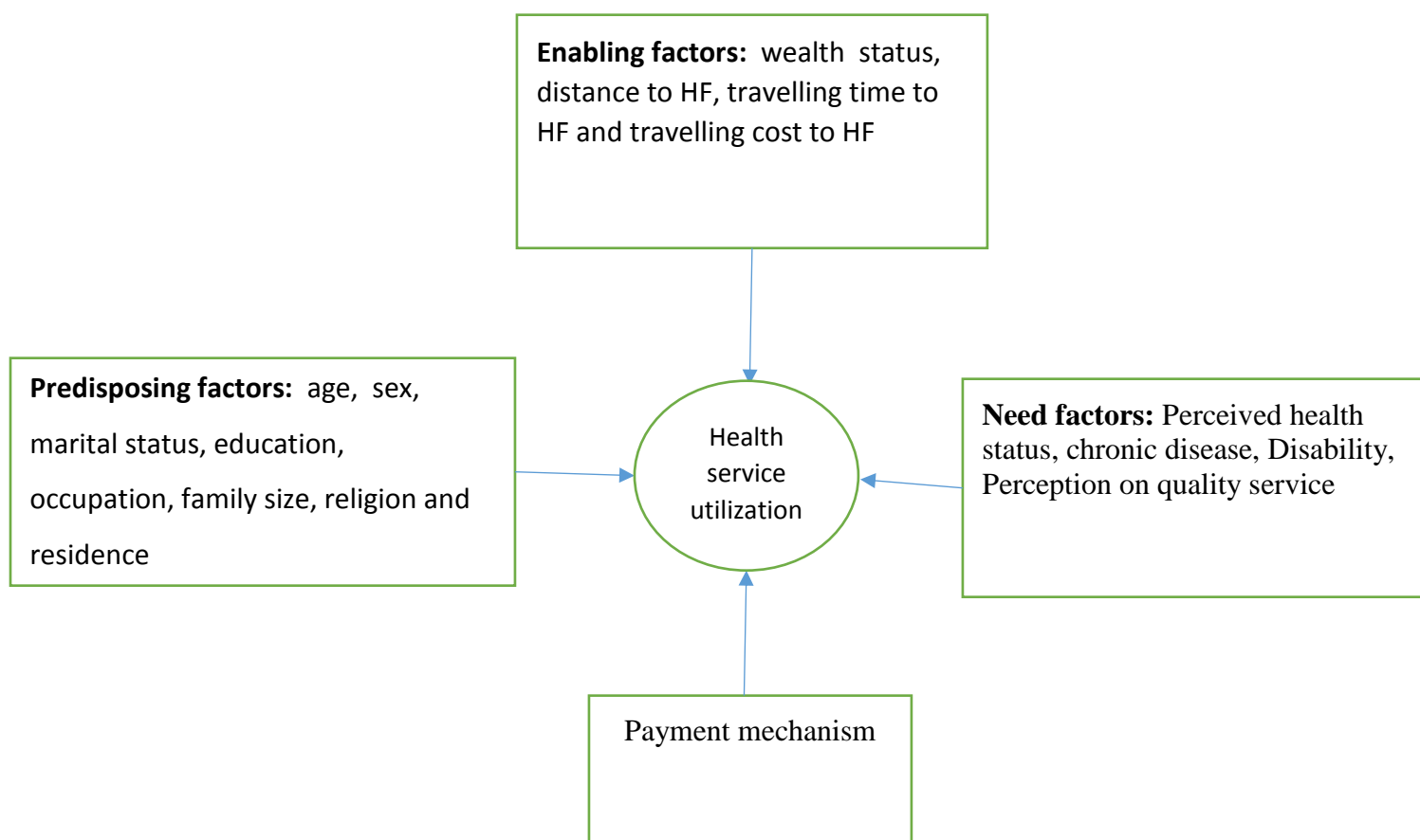


Figure 1 Conceptual framework to assess the effect of fee waiver system on health service utilization and associated factors among households(47).

4. OBJECTIVES

4.1 General objective

To assess the effect of fee waiver system on health service utilization and associated factors among households in Farta district, South Gondar Zone, North west Ethiopia, 2022

4.2 Specific objectives

1. To estimate the magnitude of health service utilization among households in Farta District, South Gondar Zone, North west Ethiopia, 2022
2. To identify factors associated with health service utilization among households in Farta District, South Gondar Zone, North west Ethiopia, 2022
3. To determine the effect of fee waiver system on health service utilization among households in Farta District, South Gondar Zone, North west Ethiopia, 2022

5. METHODS

5.1 study area and study period

The study was done from October 1 to November 14, 2022 in Farta district, south Gondar, Ethiopia. Farta District is one of the 15 Districts found in south Gondar, located in the Amhara regional state, Ethiopia. It is 677 km away from the capital city of Ethiopia, Addis Ababa and 104 km from the capital city of Amhara Regional city, Bahir Dar. This District is subdivided into 30 Kebeles in the area and there are 10 health centers, 56 health posts and 4 private clinics. Based on the 2022 Farta District health office annual report the total population is estimated to be 237,680. Among those 118,602 (49.9%) are Male and 119,078 (50.1 %) are Female. Moreover the total number of HHS in this District is 55,274. From those 27,730 HHS are members of CBHI program, 22,341 (40.42%) HHS are out of pocket payers and 5203 (9.41%) HHS are fee waiver beneficiaries(48).

5.2 Study design

A community based comparative cross-sectional study was conducted

5.3 Population

5.3.1 Source population

All households' fee waiver beneficiaries and OOP payers residing in Farta district were source of populations.

5.3.2 Study population

All households of fee waiver beneficiaries and out of pocket payers found in the selected Kebeles of Farta district.

5.4 Eligibility criteria

5.4.1 Inclusion criteria

Both fee waiver beneficiaries and out of pocket payers' households who lived for at least 6 months were included in the study.

5.4.2 Exclusion criteria

Households who use the CBHI program were excluded among OOP payers

5.5 Variables

5.5.1 Dependent Variables

Health service utilization

Treatment variable: Fee waiver system

5.5.2 Independent Variables

Predisposing factors: age, sex, religion, marital status, residence, education, occupation and family size

Enabling factors: wealth status, distance to HF, travelling time to HF and travelling cost to HF

Need factors: Perceived health status, chronic disease, Disability, Perception on quality service

5.6 Operational definition

Health service utilization: The use of available health care services in a health facility seeking medical treatment or for diagnostic purpose either through OOP payment or a fee waiver (49). Health service utilization in the study refers to a measure of the health of the population whether the respondent went to health institution in the last 12 months before the study. It is a dichotomous variable based on the question “Did you go for healthcare in the last 12 months?”

Perceived health status: Respondents report about their health status that was assigned by numerical values according to the following scale: very good=5, good=4, medium=3, poor=2 and very poor=1(9)

Perceived quality of healthcare service: The respondents view on quality of healthcare delivery; 5 =very good, 4=good, 3=medium, poor=2 and very poor=1

Fee waiver: A fee waiver is an exemption from a requirement to pay for healthcare services for those who cannot afford health care services. Beneficiaries are the poor who have been identified for use of health services without charging or payment(50, 51).

Out of pocket payers: A payment made by the patient to the healthcare practitioner at the time of service delivery(11).

Chronic disease: A disease condition that lasts more than three month's duration(9).

Household wealth quintiles: Study households have been split into five distinct wealth quintile groups based on a score first generated by principal component analysis: poorest, lower middle, middle, upper middle, and richest.

5.7 Sample size determination

Sample size for objective one was calculated by using two population proportion formula by considering the following assumptions: confidence interval 95%, power 80%, non-response rate 10% and 1:1 ratio. By taking a comparative crosssectional study done in Tigray the magnitude of health service utilization among fee waiver beneficiaries and out of pocket payers were 51.5% and 41.9% respectively(11).

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

where $Z_{\alpha/2}$ is the critical value of the Normal distribution at $\alpha/2$ (e.g. for a confidence level of 95%, α is 0.05 and the critical value is 1.96), Z_{β} is the critical value of the Normal distribution at β (e.g. for a power of 80%, β is 0.2 and the critical value is 0.84) and p_1 and p_2 are the expected sample proportions of the two groups.

$n_1 = n_2$ the required minimum sample size

z = Level of confidence 95%, = 1.96, power 80%= 0.84

P_1 and p_2 = proportion of healthcare utilization among fee waiver users and non-users taken from previous study 0.515, 0.419, respectively.

d =Margin of error, assumed to be 5%

$\Delta=p_1-p_2=0.515-0.419=0.096$

$$\bar{p} = \frac{p_1 + p_2}{2} = (0.515+0.419)/2= 0.467$$

$$=1-0.467=0.533$$

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

$$n_1 = n_2 = \frac{(1.96\sqrt{2*0.467*0.533} + 0.84\sqrt{0.515*0.485 + 0.419*0.581})^2}{0.009216} = 423, \text{ by adding 10\% non-response}$$

rate and design effect of 1.5 $n_1=n_2=698$ total sample size=1396

The sample size determination for the second objective and third objective was calculated based on a double population proportion formula by using Epi info version 7 and according to the following assumptions 80% power, 95% confidence level, 1:1 ratio and 10% non-response rate. For factors associated with healthcare utilization sample size was determined by using key factors taken from earlier literature .The final sample size was the largest of all estimates.

Table 1 sample size estimation for factors associated with health service utilization among fee waiver beneficiaries household in Farta district, south Gondar, Ethiopia, 2022

Variables	Categorical variables	Assumptions	% (Outcome among non-exposed)	% (Outcome among exposed)	AOR	Sample Size	References
Family size	Less than three	CI=95% Power=80% Ratio=1:1	64.53	29.32	0.22	72	(34)
	Three and above						
Residence	Urban	CI=95% Power=80% Ratio=1:1	48.75	91.3	11	44	
	Rural						
Perceived health status	Poor	CI=95% Power=80% Ratio=1:1	33.6	79.4	7.6	44	
	Good						
Perceived distance to HF	Near	CI=95% Power=80% Ratio=1:1	39.7	96.5	41.8	26	
	Far						

For third objective by considering the same assumptions above the sample size was calculated as follows. effect of fee waiver which increases HSU by 81% was taken(14). Since studies conducted on only to fee waiver beneficiaries there was no literature study on out of pocket payer’s healthcare utilization. We took 50% proportion for out of pocket payers.

Table 2 sample size estimation for effect of fee waiver on healthcare utilization among households in Farta District, south Gondar, Ethiopia, 2022

Specific objective three	95% CI	Power (80%)	P1	P2	N	Design effect(1.5)	Non response rate (10%)	Total sample size
To determine effect of fee waiver on HSU	1.96	0.84	0.81	0.5	36	54	5.4	60

5.8 Sampling procedures

Studying households was done by multistage sampling technique. In the first stage 10 Kebeles (i.e. 33% of total Kebeles) was selected randomly from the total of 30 Kebeles as primary sampling units in Farta district(48). These Kebeles were named Gassay, Mahdere Mariam, Soras, Enderge, Derhina, Sahrina, Aringo, Burro, Medeb and Terraroch. According to a data obtained from health extension workers we select both fee waiver beneficiaries and out of pocket payer households by using their family folder number. Then systematic random sampling was applied to select the eligible households from each Kebeles proportionally. The first households was selected randomly from the list of household’s family folder number. The selection of the eligible study households is shown in (figure2).

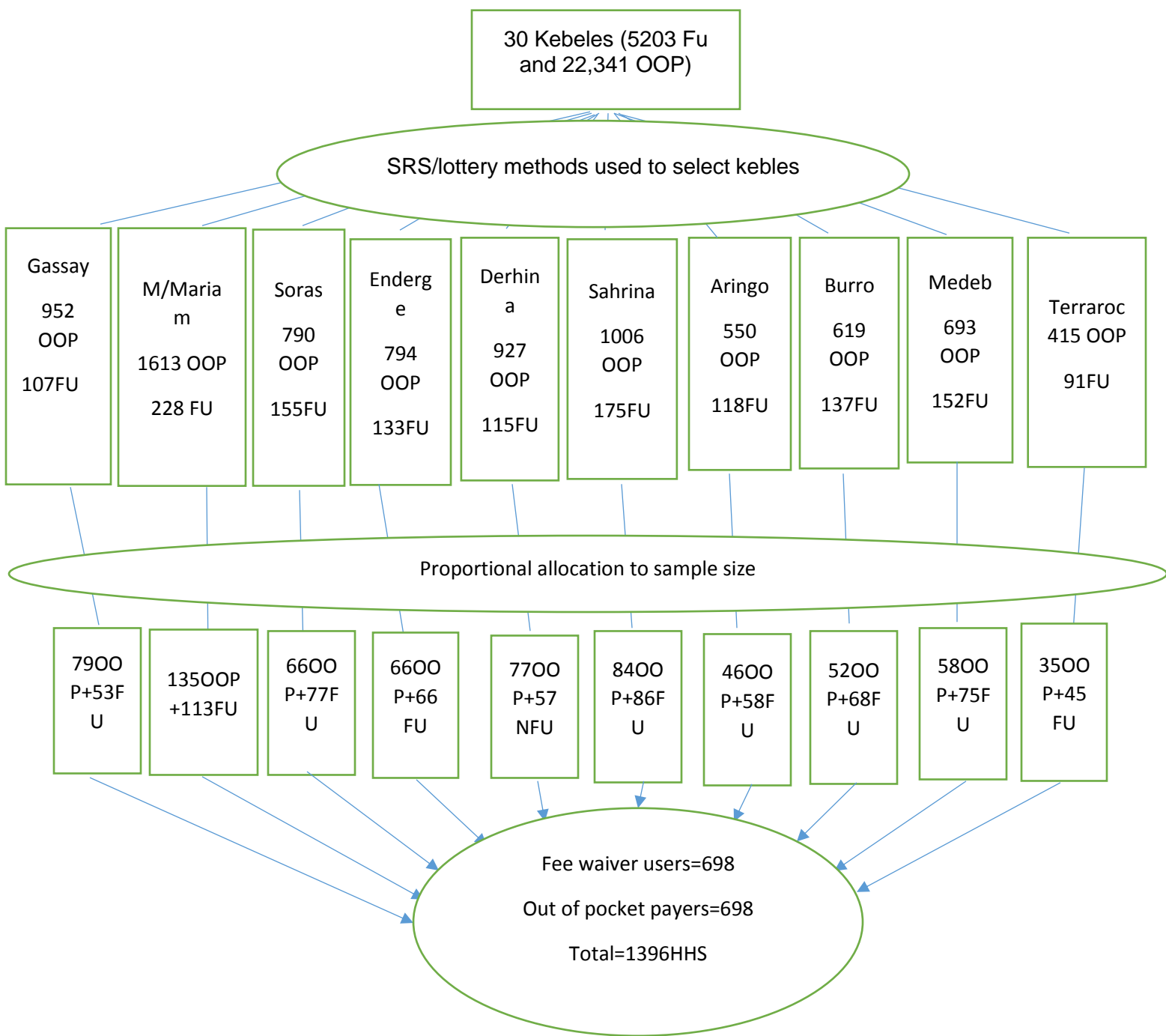


Figure 2 Schematic presentation of sampling stages in Farta district.

5.9 Data collection tools and procedures

Data was collected by face to face interview with household heads using structured questionnaire adapted from EDHS, Anderson and Newman model of healthcare utilization and other literatures (23, 52, 53). The questionnaire had 5 sections: predisposing factors, enabling factors, need factors, health service utilization and wealth index of households.

5.9.1 Data Quality Control

The quality of data was assured by proper designing of the questionnaires before the actual data collection and giving training for the data collectors and supervisors. The questionnaire was filled by using Epi collect 5 and first prepared in English ,then translated to Amharic by language expertise and retranslated back to English to observe its consistency and conceptual equivalence. The questionnaire was also pretested on 5% (70) of the total sample size at Guna Woreda other than the study area. Necessary modifications were made on the questionnaire based on the findings of the pretest. Five Nurses were participated in the data collection process. The data collection process was supervised by two public health officer professionals and the investigator. Both data collectors and supervisors were trained for 2 day about the contents of the questionnaire and on how to collect the data properly using Epi collect 5 in order to minimize errors. The investigator and supervisors made a daily supervision during the whole data collection process. Every day after data collection, questionnaire was reviewed and checked for completeness and relevance by the supervisors and investigator and the necessary feedback was offered to data collectors in the next morning.

5.9.2 Data Processing and Analysis

Data was collected by Epicollect 5 and downloaded to excel, then exported to SPSS version 26 and STATA version 15 statistical packages for analysis. SPSS was used for binary logistic regression while STATA was also used for propensity score match analysis through logit model. Wealth index of the household was computed by principal component analysis (PCA). Data cleaning was done to check for frequency, consistency, accuracy and missing values of the data. Frequency, proportion and summary statistics was used to describe the study population in related to study variables. Bivariate and multivariable logistic regression was conducted to estimate the effect of independent variables on the outcome variables. Independent variables in

the bivariate analysis with p value less than 0.25 was entered to multivariable logistic regression to identify factors of healthcare utilization. The association between the dependent and the independent variables was measured by using odds ratio (OR) with 95 % Confidence Interval (CI). Those variables with p-value of less than 0.05 in the multivariable analysis were considered as statistically significant. Goodness of fit test was checked by Hosmer and Lemeshow test. Propensity score matching analysis was used to determine the effect of fee waiver system on healthcare utilization. The outcome variable (healthcare utilization), treatment variable (fee waiver system) and covariates were used to calculate propensity score.

5.9.3 Ethical Consideration

Ethical clearance was obtained from Bahiadar University College of medicine and health science Ethical Clearance Review Committee. An official letter of cooperation was given to south Gondar health office. The district health office and the 10 Kebeles were asked for an official letter to get permission. The exclusion of study participants' names during the data gathering period would ensure confidentiality. The data entered to software was protected by password and used only for the study purpose. Participants in the study were received a thorough explanation of the study's objectives, methods, length, probable risks, and advantages. Participants were advised to participate in the study if they were willing, and written informed consent with their signature was obtained from respondents prior to data collection. Any study participant who was willing to participate in the study might do so, and anyone who wants to end an interview were exited at any time.

6. RESULTS

6.1 Predisposing factors

From a total of 1396 respondents, 1351 households (670 OOP payers and 681 Fee waiver users) participated in the study with a response rate of 95.99% for OOP payers and 97.56% for fee waiver users. The mean age of the respondents was 45.91 ± 9.56 years. Half of study participants, 347 (51.8%) and 350 (51.4%) were males in both OOP payers and fee waiver users respectively. Majority 1219 (90.2%) were from rural areas and three fourths 1018 (75.4%) were married individuals. Of the total respondents' educational status, 235 (35.1%) were unable to read and write and 183 (26.9%) were able to read and write for OOP payers and Fee waiver users, respectively. Regarding other sociodemographic characteristics, 648 (48%) were farmers and 938 (69.4%) were orthodox Christians in religion. From over all study participants, household family sizes ranged from 1 to 12 with sizes 4.73 ± 1.36 and 530 (79.1%) household family sizes were less than five in OOP payers and 506 (74.3%) family sizes were less than five members in Fee waiver users (**Table 3**).

Table 3 : Socio-demographic characteristics of respondents in Farta District, South Gondar, North West Ethiopia, 2022 (n=1351)

Variables	Categories	Fee waiver Users (n=681)		OOP Payers (n=670)		Total (N=1351)	
		Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Sex	Male	350	51.4	347	51.8	697	51.6
	Female	331	48.6	323	48.2	654	48.4
Age	18-24	18	2.6	30	4.5	48	3.6
	25-44	312	45.8	304	45.4	616	45.6
	45-64	321	47.1	290	43.3	611	45.2
	≥ 65	30	4.4	46	6.9	76	5.6
Religion	Orthodox	516	75.8	422	63.0	938	69.4

	Muslim	165	24.2	248	37.0	413	30.6
Residence	Urban	53	7.8	79	11.8	132	9.8
	Rural	628	92.2	591	88.2	1219	90.2
Marital status	Single	17	2.5	36	5.4	53	3.9
	Married	496	72.8	522	77.9	1018	75.4
	Divorced	70	10.3	53	7.9	123	9.1
	Widowed	83	12.2	38	5.7	121	9.0
	Separated	15	2.2	21	3.1	36	2.7
Educational level	Unable to read and write	174	25.6	235	35.1	409	30.3
	Able to read and write	183	26.9	172	25.7	355	26.3
	Primary	169	24.8	113	16.9	282	20.9
	Secondary	100	14.7	94	14	194	14.4
	College and above	55	8.1	56	8.4	111	8.2
Occupational Status	Farmer	318	46.7	330	49.3	648	48
	House wife	66	9.7	118	17.6	184	13.6
	Daily laborer	117	17.2	49	7.3	166	12.3
	Merchant	82	12	88	13.1	170	12.6
	Other	98	14.4	85	12.7	183	13.5
Family size	< 5	506	74.3	530	79.1	1036	76.7
	≥ 5	175	25.7	140	20.9	315	23.3

6.2 Enabling factors

Of the study participants, 264 (39.4%) and 394 (57.9%) were less and equal to 5 km from a health service facility to their home for out-of-pocket payers and Fee waiver users, respectively. However, majority of the study participant 406 (60.6%) were greater than 5 km distance from their home to health facility in Out of pocket payers. Regarding travelling time, nearly half, 331 (49.4%) of the study participants walked to the health facility for less than 30 minutes with out of pocket payers, and 265 (38.9%) study participants walked to the health facility for less than 30 minutes with fee waiver users. Less than half, 285 (42.5%) out of pocket payers and 148 (21.7%) of fee waiver users reported transport costs were expensive from their home to the nearest health facility (**Table 4**).

Table 4 : Enabling factors of health service utilization among study participant in Farta District, south Gondar, northwest Ethiopia, 2022.

Variables	categories	Fee waiver Users (n=681)		OOP Payers (n=670)		Total (N=1351)	
		Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Distance at home to HF	≤ 5 km	394	57.9	264	39.4	658	48.7
	> 5 km	287	42.1	406	60.6	693	51.3
Time taken from home to HF through walking	< 30 minutes	265	38.9	331	49.4	596	44.1
	≥ 30 minutes	416	61.1	339	50.6	755	55.9
Perceived transport cost	no cost	74	10.9	109	16.3	183	13.5
	Cheap	134	19.7	84	12.5	218	16.1
	Medium	325	47.7	225	33.6	550	40.7
	Expensive	148	21.7	252	37.6	400	29.6

6.3 Need factors

Among study participants, 353 (52.7%) respondents among out-of-pocket payers and less than half of 289(42.4%) study participants among fee waiver users perceived their health status as good. Regarding their health status, 136 (20.3%), and 163 (23.9%) respondents had chronic disease among out of pocket payer and fee waiver users respectively. Out of all respondents, 76 (11.3%) and 77 (11.3%) households, respectively, among OOP payers and fee waiver users, had disability health problems. Additionally, among all respondents, more than half, 408 (60.9%) and 303 (44.5%) of those who paid out of pocket for their healthcare and those who used a fee waiver system, respectively, felt that the quality of the services provided was good (**Table 5**).

Table 5: Need factors of health service utilization among study participant in Farta District, south Gondar, northwest Ethiopia, 2022.

Variables	Categories	Fee waiver Users (n=681)		OOP Payers (n=670)		Total (N=1351)	
		Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Perceived health status	Very good	34	5.0	35	5.2	69	5.1
	good	289	42.4	353	52.7	642	47.5
	medium	245	36	231	34.5	476	35.2
	poor	75	11	32	4.8	107	7.9
	Very poor	38	5.6	19	2.8	57	4.2
Chronic disease	Yes	163	23.9	136	20.3	299	22.1
	No	518	76.1	534	79.7	1052	77.9
Disability health problem	Yes	77	11.3	76	11.3	153	11.3
	No	604	88.7	594	88.7	1198	88.7
Perceived quality of health service provision	Very good	17	2.5	37	5.5	54	4.0
	Good	303	44.5	408	60.9	711	52.6
	Medium	217	31.9	180	26.9	397	29.4
	Poor	108	15.9	28	4.2	136	10.1
	Very poor	36	5.3	17	2.5	53	3.9

6.4 Health service utilization

Health service utilization among fee waiver users and out of pocket payers was 58.1% (at 95% CI, (54.5, 61.8)) and 47.2% (at 95% CI (43, 50.9)) respectively. Among overall respondents,

712(52.7%) used health services. Of the total respondents, 132(19.7%) study participants visited the health facility one times by out of pocket payers and 157 (23.1%) of study participants visited the health facility two times by fee waiver users. From the overall 264 (19.5%) of study participant visit the health facility two times. Of the total participants, 446 (33%) who used government hospitals, 177 (26.4%) were out of pocket payers and 269 (39.5%) of study participants were fee waiver users. The majority of the study participants from out of pocket payer 263(39.3%) responded that health care costs were covered by themselves. In contrast, 330 (48.5%) of fee waiver user health care costs were covered by the government (**Table 6**).

Table 6 Health service utilization among fee waiver users and OOP payers in Farta District, south Gondar, northwest Ethiopia, 2022

Variables	Fee waiver users		OOP payers		Overall health service utilization	
	Frequenc	Percenta	Frequenc	Percenta	Frequenc	Percenta

		y	ge (%)	y	ge (%)	y	ge (%)
Use of health service	Yes	396	58.1	316	47.2	712	52.7
	No	285	41.9	354	52.8	639	47.3
Facility visit frequency	One times	58	8.5	132	19.7	190	14.1
	Two times	157	23.1	107	16.0	264	19.5
	Three times	131	19.2	53	7.9	184	13.6
	Four or more times	50	7.3	24	3.6	74	5.5
Preferred health facility for seeking care	health post	15	2.2	10	1.5	25	1.9
	Health center	83	12.2	86	12.8	169	12.5
	Government hospital	269	39.5	177	26.4	446	33.0
	Private clinic	11	1.6	22	3.3	33	2.4
	Private hospital	13	1.9	15	2.2	28	2.1
	Drug vender/pharmacy	5	0.7	6	0.9	11	0.8
Get all the treatment needed	Yes	304	44.6	275	41.0	579	42.9
	No	92	13.5	41	6.1	133	9.8
Who covered the healthcare cost?	Self	39	5.7	263	39.3	302	22.4
	Government	330	48.5	0	0	330	24.4
	Community	15	2.2	20	3.0	35	2.6
	Other	12	1.8	33	4.9	45	3.3

Reasons not seek healthcare service

The major reasons for not visiting healthcare services at the time of illness were equally both shortage of money for transport and health facility was too far (17.8%) among out of pocket

payers. Also, shortages of money for transport (18.25%) and illness were not severe (16.84%) were a major reason for not visiting healthcare facilities when sick among fee waiver users (Fig 3, 4)

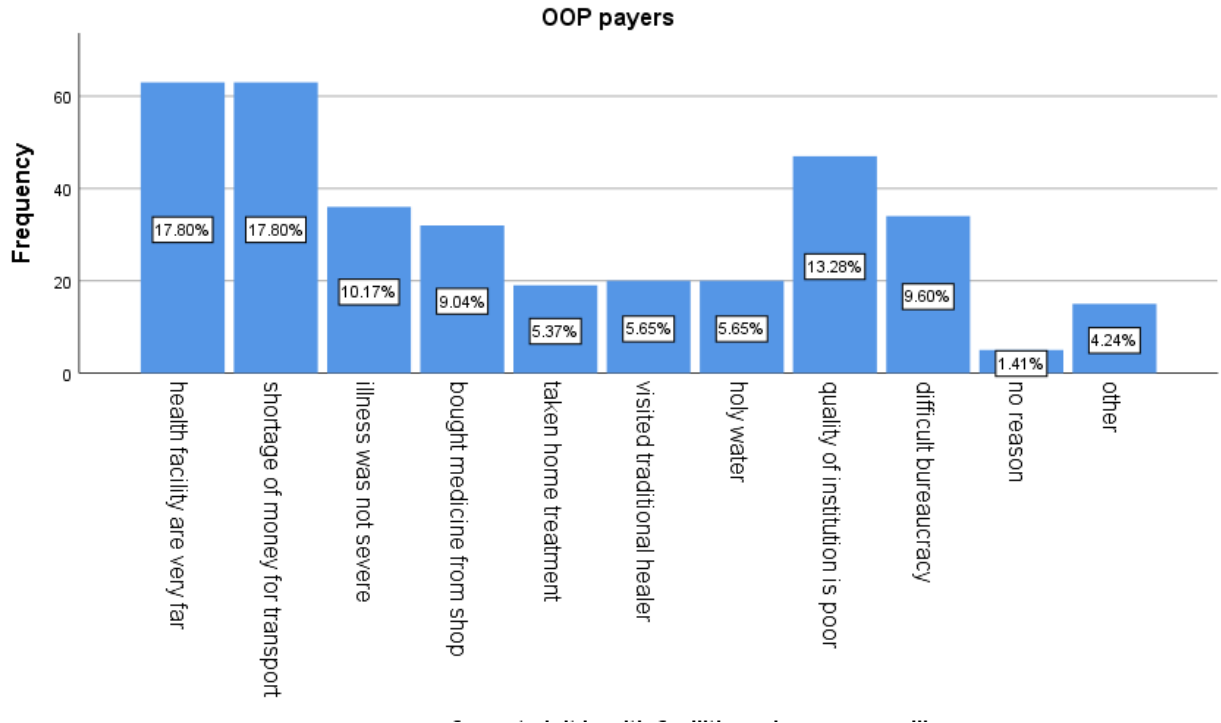


Figure 3 : Reasons for not visiting a health institution among out of pocket payers in Farta District, south Gondar, North West, Ethiopia, 2022

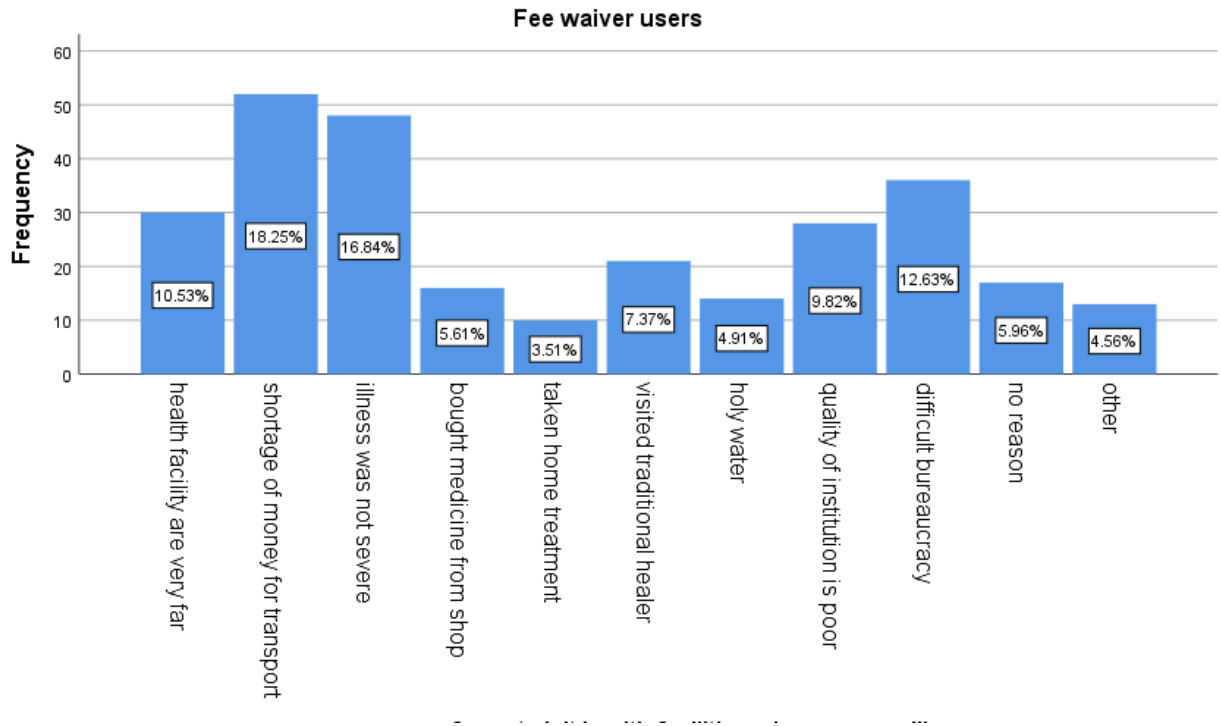


Figure 4: Reasons for not visiting a health institution among fee waiver users in Farta District, south Gondar, North West, Ethiopia, 2022

6.5 Factors associated with overall health service utilization

In the final multivariable logistic regression analysis, level of education, family size, traveling time, traveling cost, chronic disease, and payment mechanisms were significantly associated with

health service utilization among overall respondents. As a result, study participants who able to read and write (AOR=1.64 at 95%CI: 1.20, 2.24), primary (AOR=1.7 at 95%CI: 1.22, 2.37), secondary (AOR=3.07 at 95%CI: 2.09, 4.53), and college and above (AOR=4.9 at 95%CI: 2.91, 8.23) used more health service than study participants who were unable to read and write. Participants with families size of five or more were decreased health service utilization by 46% as compared with participants with family size of less than five (AOR = 0.54; 95% CI: 0.41, 0.72). moreover, study participants who traveled for less than 30 minutes were 2.09 times more likely to use health services than study participants who traveled for more than 30 minutes (AOR=2.09; 95%CI: 1.64, 2.67). Study participants who said their travel cost was no cost (AOR=4.22; 95% CI: 2.8, 6.37) and cheap (AOR=3.55; 95% CI: 2.41, 5.23), on the other hand, used more health services than those who said their travel cost was expensive. Participants who had a chronic disease were 1.5 times more likely to utilize health services than participants who had no chronic disease (AOR = 1.5; 95% CI: 1.11, 2.02). Being a fee-waiver user as a payment mechanism made users 1.65 times more likely to use health care services as compared to out-of-pocket payers (AOR = 1.65; 95% CI: 1.25, 2.18) (**Table 7**).

Table 7. Predictor variables for overall health service utilization in Farta District, south Gondar, northwest Ethiopia, 2022.

Variables	Category	HSU		COR (95% CI)	AOR (95% CI)
		Yes	No		
Educational level	Unable to read	160	249	1	1

	and write				
	Able to read and write	181	174	1.62 (1.21, 3.509)	1.64 (1.20, 2.24)***
	Primary	153	129	1.85 (1.36, 2.51)	1.7 (1.22, 2.37)***
	Secondary	131	63	3.24 (2.26, 4.64)	3.07 (2.09, 4.53)***
	College and above	87	24	5.64 (3.44, 9.24)	4.9 (2.91, 8.23)***
Family size	< 5	578	458	1	1
	≥ 5	134	181	0.59 (0.46, 0.76)	0.54 (0.41, 0.72)***
Distance	≤ 5 km	379	279	1.47 (1.19, 1.82)	1.05 (0.82, 1.34)
	> 5 km	333	360	1	1
Travelling time	< 30 minutes	377	219	2.16 (1.73, 2.69)	2.09 (1.64, 2.67)***
	≥ 30 minutes	335	420	1	1
Travelling cost	no cost	137	46	4.86 (3.29, 7.18)	4.22 (2.8, 6.37)***
	Cheap	159	59	4.40 (3.07, 6.31)	3.55 (2.41, 5.23)***
	Medium	264	286	1.51 (1.16, 1.963)	1.18 (0.89, 1.57)
	Expensive	152	248	1	1
Chronic disease	Yes	184	115	1.59 (1.22, 2.06)	1.5 (1.11, 2.02)***
	No	528	524	1	1
Wealth status	Poorest	194	219	1	
	Lower middle	75	63	1.34 (0.91,1.98)	1.37 (0.89, 2.11)
	Middle	77	65	1.34 (0.91,1.96)	1.19 (0.77, 1.83)
	Upper middle	193	155	1.41 (1.06,1.87)	1.03 (0.73, 1.45)
	Richest	173	137	1.43 (1.06,1.92)	1.11 (0.77, 1.62)
Payment mechanism	OOP payers	316	354	1	1
	Fee waiver users	396	285	1.56 (1.26, 1.93)	1.65 (1.25, 2.18)***

Notes: ** Significant variables with a p-value less than 0.05; *** Significant variables with a p-value less than 0.01. Abbreviations: **COR**, Crude odds ratio, **AOR**, Adjusted odds ratio; and **CI**, Confidence interval.

6.6 Factors associated with health service utilization among out of pocket payer

In the final multivariable logistic regression analysis, level of education, family size, travel time, and travel cost were significantly associated with health service utilization among out of pocket payers. As a result, participants whose educational level was primary (AOR = 2.01; 95%CI: 1.17, 3.46), secondary (AOR = 4.5; 95%CI: 2.44, 8.30), and college and above (AOR = 5.44;

95%CI: 2.56, 11.56) utilized more health services than study participants who were unable to read and write. Among Study participants who had family sizes of five and above the health service utilization had decreased by 88% as compared with participants who had family sizes of less than five (AOR=0.12; 95% CI: 0.07, 0.22). study participants who traveled for less than 30 minutes were 4.7 times more likely to use health services (AOR = 4.7 at 95% CI: 3.21, 6.86) than study participants who traveled for more than 30 minutes. On the other hand, study participants who reported that their travel costs as no cost and cheap were more likely to use health care services than study participants whose transport costs were expensive among out-of-pocket payers (AOR = 3.49 (1.97, 6.2) and AOR=2.83 (1.53, 5.22) at 95% CI) respectively (**Table 8**).

6.7 Factors associated with health service utilization among fee waiver users

. In the final multivariable logistic regression analysis, educational level, distance, travel cost, and chronic disease were significantly associated with health service utilization among fee waiver beneficiaries. Respondents who able to read and write (AOR=. 1.71; 95%CI: 1.1, 2.68), secondary (AOR=2.16; 95%CI: 1.24, 3.75) and college and above (AOR=4.03; 95%CI: 1.78, 9.13) utilized more health services than study participants who were unable to read and write. Participants in the study who walked less than five kilometers away from the health facility were 1.44 times more likely to use the health service than participants who walked more than or equal to five kilometers away (AOR = 1.44 ; 95%CI : 1.02, 2.02). Study participants who said their travel costs were free or low were 4.26 and 4.13 times more likely to use health services than those who said their travel costs were expensive among fee waiver users (AOR = 4.26 at 95% CI: 2.09, 8.65) and AOR=4.13 at 95% CI: 2.38, 7.16) respectively (**Table 8**).

Table 8 : Predictor variables for health care utilization among fee waiver users and OOP payers in Farta District, south Gondar, northwest Ethiopia, 2022.

Variables	Categories	Fee waiver users	OOP Payers
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		HSU		COR (95% CI)	AOR (95% CI)	HSU		COR (95% CI)	AOR (95% CI)
		Yes	No			Yes	No		
Residence	Urban	38	15	1	1	35	44	1	
	Rural	358	270	0.52 (0.28, 0.97)	0.73 (0.37, 1.44)	281	310	1.14 (0.71, 1.83)	
Marital status	Single	9	8	1		15	21	1	1
	Married	294	202	1.30 (0.49, 3.41)		242	280	1.21 (0.61, 2.40)	1.83 (0.80, 4.20)
	Divorced	41	29	1.26 (0.43, 3.64)		24	29	1.16 (0.49, 2.73)	1.48 (0.53, 4.15)
	Widowed	44	39	1.00 (0.35, 2.85)		25	13	2.69 (1.05, 6.91)	3.84 (1.22, 12.11)
	Separated	8	7	1.02 (0.25, 4.08)		10	11	1.27 (0.43, 3.76)	1.70 (0.46, 6.28)
Educational level	Unable to read and write	78	96	1		82	153	1	1
	Able to read and write	108	75	1.77 (1.17, 2.70)	1.71 (1.1, 2.68)**	73	99	1.38 (0.92, 2.06)	1.43 (0.88, 2.31)
	Primary	97	72	1.66 (1.08, 2.54)	1.36 (0.86, 2.14)	56	57	1.83 (1.16, 2.89)	2.01 (1.17, 3.46)***
	Secondary	67	33	2.45 (1.50, 4.17)	2.16 (1.24, 3.75)***	64	30	3.98 (2.39, 6.63)	4.5 (2.44, 8.30)***
	College and above	46	9	6.29 (2.90, 13.65)	4.03 (1.78, 9.13)***	41	15	5.1 (2.66, 9.76)	5.44 (2.56, 11.56)***
Family size	< 5	281	225	1	1	297	233	1	1
	≥ 5	115	60	1.54 (1.07, 2.20)	1.32 (0.89, 1.96)	19	121	0.12 (0.07, 0.21)	0.12 (0.07, 0.22)***
Distance	≤ 5 km	225	139	1.9 (1.39, 2.59)	1.44 (1.02, 2.02)**	124	140	0.99 (0.72, 1.35)	
	> 5 km	141	146	1		192	214	1	
Time	< 30 minutes	155	110	0.98 (0.72, 1.34)		222	109	5.31 (3.82, 7.40)	4.7 (3.21, 6.86)***
	≥ 30 minutes	241	175	1		94	245	1	1
Perceived Transport	no cost	61	13	5.99 (3.03, 11.44)	4.26 (2.09, 8.71)	36	33	4.37 (2.69, 7.09)	3.49 (1.97, 6.14)

cost				11.84)	8.65)***				6.2)***
	Cheap	107	27	5.06 (2.97, 8.62)	4.13 (2.38, 7.16)***	52	32	3.08 (1.85, 5.14)	2.83(1.53, 5.22)***
	Medium	163	162	1.29 (0.87, 1.70)	1.1 (0.73, 1.65)	101	124	1.55 (1.07, 2.24)	1.19 (0.77, 1.85)
	Expensive	65	83	1	1	87	165	1	1
Perceived health status	Very good	23	11	1		16	19	1	
	Good	174	115	0.72 (0.34, 1.54)		174	179	1.15 (0.58, 2.32)	
	Medium	125	120	0.5 (0.23, 1.07)		100	131	0.91 (0.44, 1.85)	
	Poor	50	25	0.96 (0.40, 2.27)		14	18	0.92 (0.35,2.42)	
	Very poor	24	14	0.82 (0.31, 2.17)		12	7	2.04 (0.65,6.4)	
Chronic disease	Yes	121	42	2.55 (1.72, 3.76)	1.73 (1.12, 2.66)**	63	73	0.96 (0.66, 1.4)	
	No	275	243	1	1	255	281	1	
Disability	Yes	53	37	1.04 (0.66, 1.63)		41	35	1.36 (0.84, 2.19)	1.68 (0.92, 3.06)
	No	343	248	1		275	319	1	1

Notes: ** Significant variables with a p-value less than 0.05; *** Significant variables with a p-value less than 0.01.

Abbreviations: **COR**, crude odds ratio, **AOR**, adjusted odds ratio; and **CI**, confidence interval.

6.8 Effect of fee waiver system on health service utilization

The effect of fee waivers system on healthcare utilization has been estimated using the average treatment effect on the treated (ATT). Before matching was done healthcare utilization of fee waiver users (58%) were higher than out of pocket payers (47%). In this study the best matching algorithm was kernel matching with band width 0.25 among fee waiver users (treated, n=673) and OOP payers (control, n=646). The covariates used for matching were sex, age, religion, residence, marital status, educational level, occupation, family size, distance, travelling time, travelling cost, perceived health status, chronic disease, disability, perceived quality of healthcare service and wealth status. As a result, table 9 revealed that the average treatment effect on the treatment group was 0.149 (t=4.19). This showed that households participating in fee waiver system contributes a 14.9% increase in healthcare utilization (**Table 9**).

Table 9: The average treatment effect of fee waiver system on healthcare utilization, Farta District, south Gondar, Ethiopia, 2022 (n=1351)

Outcome	Mean before matching		Difference	p-value	ATT	S.E	T	No of cases	
	Fee waiver users	OOP payers						Fee waiver users	OOP payers
HSU	0.58	0.47	11	< 0.001	0.149	0.035	4.19	673	646

HSU health service utilization, **ATT** average treatment effect on treated, **SE** standard error **t** student's distribution

7. DISCUSSION

This study was conducted to assess the effect of fee waiver system on healthcare utilization and associated factors among households in Farta district, south Gondar, Ethiopia, in 2022. Health service utilization among fee waiver beneficiaries and out-of-pocket payers was 58.1% and 47.2%, respectively. This suggests that out-of-pocket payers may be price sensitive when it comes to using health services. Furthermore, in this study, the health service utilization level among fee waiver beneficiaries was 58.1%, which is consistent with another study done in Dessie (62.4%), Dawint (60.98%), Gamo Gofa (59.6%), and Hawassa (65%) (33, 34, 50, 51). Being a member of a fee waiver program was a significant predictor of health service utilization, which was 1.65 times more likely to use health services compared to out-of-pocket payers (AOR = 1.65; 95CI: 1.25, 2.18). This result is in line with the study conducted in Tigray, where fee waiver users were 2 times more likely to use health services as compared to OOP payers (11). This might be due to the result of implementation of fee waiver programme from those District and accessibility of services for beneficiary HHS.

Moreover the study reported that the major reason for not visit health facilities were shortage of money for transport (18.25%) for fee waiver users and (health facility was too far (17.8%) and absence of transport (17.8%)) for OOP payers respectively. The second reason for not visiting a health facility was difficult bureaucracy and low quality of health services, which were 12.63% and 13.28% for fee waiver users and OOP payers, respectively. This study is in line with the study done in Dawint District in the north Wollo zone, which identified that a shortage of money for transport and health institutions was too far away as a potential problem for using healthcare services among respondents(34). This might be due to providers giving less attention to distant health facility services and problems in the implementation of a fee waiver program to address the issue of poor individuals.

Cost of travel to reach a health facility was a significant predictor of health service utilization, indicating that among out-of-pocket payers, households who perceived transportation costs as free or cheap were 3.49 and 2.83 times more likely to use the health service than who perceived transport costs was expensive, respectively. Furthermore, among fee waiver users, households that perceived transportation costs as free or low were 4.26 and 4.13 times more likely to use health services, respectively, than households that perceived transportation costs as expensive. This finding is in

line with the study done in Dawunt District, where transport costs were related to health service utilization (34), and a similar study done in Gamo Gofa also reported that household transportation cost was a barrier to health service utilization, which showed that as transportation costs increased, health service utilization decreased. (33). This could be because rising transportation costs have an impact on health service utilization.

Furthermore Study participants less than five kilometers from the health facility were 1.44 times more likely to use the health service than participants greater than or equal to five kilometers away from the health facility among fee waiver beneficiaries. This study is in line with the study done in northwestern Burkina Faso, which found that the rate of health service utilization decreased with increasing distance from health facilities (54). The possible reason might be due to their financial situation and health, the majority of people do not go more than a few kilometers for medical care.

The health service utilization was also influenced by family size. Study participants who had family sizes equal to or greater than five had decreased healthcare utilization by 88% as compared with participants who had family sizes of less than five among OOP payers. This finding is supported with a study conducted in Tigray, Ethiopia, which found that families with fewer than five use more health services than families with more than or equal to five (11). This could be the household head's workload for managing and meeting the needs of the family. Additionally, financial problems might be a possible reason for lower health service utilization.

Also, study participants who traveled for less than 30 minutes were 4.7 times more likely to use health services than study participants who traveled for more than 30 minutes. This study was consistent with research done on Papuans in Indonesia, where respondents who traveled less than or equal to 30 minutes used more health services than those who traveled for more than 30 minutes (40). This could be due to the physical closeness of a health facility affecting the utilization of services.

Moreover, in this study, for both fee waiver users and out-of-pocket payers, respondents who were able to read and write , primary, secondary, and college levels and above were more likely to utilize health services than study participants who were unable to read and write. This study is consistent with the study done in Tigray, which reported that respondents who could read and

write had better health service utilization than those who couldn't read and write (11). This could be because education can increase an individual's elasticity.

Furthermore, households that had chronic diseases used more health services than respondents who did not have chronic diseases. This result was supported by the study done in Dessie, China, and Albania. (42, 43, 50). This might be Patients with chronic diseases may have required ongoing medical care and monitoring.

8. LIMITATION OF THE STUDY

Participants who use exemption services were not excluded from the study. Therefore, it might be falsely increase the overall health service utilization of respondents. There may be a recall bias as well, when respondents may not completely recall their problems with utilizing health services.

9. CONCLUSION

Health service utilization among fee waiver users was significantly higher than out of pocket payers. Having a chronic disease, travel time, distance to a health facility, and educational level were significantly associated with fee waiver beneficiaries. Family size, educational level, traveling time, and perceived transport cost were also associated with the utilization of health services among OOP payers. Moreover, as we saw, the fee waiver system had an effect on healthcare utilization. Participation in a program that waived costs increased the use of healthcare services.

11. RECOMMENDATION

For Farta District health beauru

- Long distance and travelling costs were still factors affecting health service utilization, thus the government and local administrative bodies need to pay attention to these issues through improving physical accessibility of health facilities and alleviating transport costs.
- Participating to fee waiver program increases health service utilization, thus the government and other concerned bodies should be strengthen the fee waiver programme to escalate health service utilization.

For researchers

- A deeper investigation of other aspects relating to the use of health services shall be done by utilizing a mixed study design.

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12. APPENDIXES

Appendix 1: Participant consent information sheet

a) Participants Information sheet

Bahir Dar University

School of public health

Greeting: Good morning/good afternoon

My name is..... I'm here on behalf of Mr. Dessie Teshager, a public health student at Bahir Dar University. In order to partially meet the requirements for a master's degree in public health at the Bahir Dar University School of Public Health, he is conducting research on the effect of fee waiver on healthcare service utilization and associated factors in Farta Woreda. He was given approval to carry out this study by the Farta health office, the administrator of the zonal health office, and the school of public health at Bahir Dar University. The purpose of this study is to assess the effect of a fee waiver system (policy) on the use of healthcare services and related variables. The study will assist in providing baseline data on issues pertaining to the fee waiver system for policy makers and other scholars. Your willingness is the only factor determining your participation. You have the entire right to agree to take part in this study or decline it. You have the option to terminate the interview at any point if you decide not to participate in the study. Additionally, you are free to decide not to participate in this study. There is no danger or harm associated with taking part in this study. You won't face any bad treatment whether you choose to join, decline, or ultimately decide to quit.

If you are agreed to involve in the study conducted the questionnaire will take about 5-10 minutes.

All of the questions will be classified for anonymity, identities won't be written or mentioned, and we'll keep whatever information you share private. The principal investigator will be the only person with access to the non-coded data, aware of the specifics, and he will throw it away once analysis is finished. The information won't be utilized for anything but the study. Your

readiness and active involvement are crucial to the outcome of this study. Contact information for the principal investigator and the person who can be reached whenever you need further information.

Principal investigator: Dessie Teshager

Phone no – 0918502953

E-mail: destesha63@gmail.com

b) Informed Consent agreement form

I understand all of the terms listed above, having read this form or having it read to me in a language I can understand. I was given the chance to ask questions, and the answers I received satisfied me. It is totally up to me whether or not I take part in this study. I am aware that my data will be kept private and that I have the right to withdraw at any time.

Accept to take part in the study?

Yes no

1. If yes, carry on with the interview

2. If no, write down your reasons for declining before moving on to the next person

Informed consent Certified by:

Respondent's signature/thumb print _____ Date _____

Name of Interviewer: Name _____ Signature _____

Number assigned to the Questionnaire (ID number) _____

Date of the interview _____ Time begin at _____ completed time _____

Interview result:

1. Completed

2. No response from Respondent

3. Refused

4. Achieved in part

Supervisor: Name _____, checked Signature _____

Appendix 2: Questionnaire

English Questionnaire

Date..... Study location..... Code of conduct for the interview

Section I: predisposing factors (sociodemographic characteristics)

No	Questions	Response	
100	What is the Sex of house hold head?	1.male 2.female	
101	What is the Age of household head?	_____	
102	What is your religion?	1.orthodox 2.muslim 3.other	
103	Residence	1.urban 2.rural	
104	Your Marital status?	1.single 2.married 3.divorced 4.widowed 5.separeted	
105	What is your educational level of the house hold head?	1.unable to read and write 2.able to read and write 3.primary 4.secondary 5.college and above	
106	Occupational status of households head?	1. Farmer 2. House wife 3.daily laborer	

		4.merchant 5.other	
107	What is the size of the family of the household?	_____in number	

Section II: assessment of enabling factors

No	Question	Response	Skip
200	Have you used fee waiver programme?	1.yes 2.no	If no skip to 202
201	If yes, How did you get information about this programme?	1. Sign posted at the health facility 2.from health providers 3. Relative 4. Friends 5. Media 99. Others (specify)	
202	How far does it take to reach the nearby health facility from your home?	_____kms	
203	How long does it take to reach the nearby health facility from your home?	_____minutes	
204	How much does it cost to travel to the nearest health facility?	1. no cost 2. cheap 3. medium 4. expensive	
205	How much is the total Income of your family per month?	_____Ethiopian birr	

Section III: assessment of Need factor

No	Question	Response	Skip
300	How do you evaluate your current health status??	1. very poor 2. poor 3. medium 4. good 5.very good	
301	Have you a chronic disease?	1.yes 2.no	If no skip to 303
302	If yes, which type of chronic disease you have?	1. Cancer 2. Diabetes 3. Hypertension 4. Heart disease 5. Stroke 6. Mental illness 7. Respiratory illness (COPD) 8. Kidney disease 99.other(specify)	
303	Have you physical disability problem?	1. Yes 2. No	
304	How did you perceive quality of the health care service in this area?	1.very poor 2.poor 3.medium 4. good 5. very good	

Section IV: health service utilization

No	Question	Response	Skip
400	Have you used any health facilities when sick in the last 12 months?	1. Yes 2. No	If no skip to 404
401	If yes for question no 500 How many times did you visit the health facilities in the last 12 month?	_____	
402	Which health facility you prefer when you are sick?	1.health post 2.health center 3.goverment hospital 4.private clinic 5.private hospital 6.drug vender/pharmacy	
403	Were you able to get all the treatment you needed?	1. Yes 2. No	
404	If no for question no 400 what is the reason for not visit health facilities when you are ill?	1.health facilities are very far 2.shortage of money for transport 3.the illness was not severe 4.bought medicine from a shop 5.had taken home treatment 6.visited a traditional healer 7. holy water 8.percieved quality of institution is poor 9.difficult bureaucracy 10.no reason 99. other(specify)	

405	Did you pay?	3. Yes 4. no	
406	If yes Who covered the health care cost?	1. Self 2. Government/free 3. Community 99. Other (specify)	

SECTION V: Household wealth index

No	Question	Response	Skip
500	Among the following materials, which one do you own?	Do you have these materials? 1= yes 2= no	How much the number
	1. Functioning radio/tape 2. Modern beds 3. Cotton/sponge/spring mattress? 4. Mobile/cell-phone/wireless 5. Modern stoves 99. Other (specify)		
501	Ask the household if they have any of the following livestock assets	Do you have these animals? 1=Yes 2=No	How many of these animals do this household currently own?

	1. ox 3. cow 4. horse 5. donkey 5. mule 6. goat 7. sheep 8. chicken 99. Others (specify)		
502	Ask the household if they have any of the following crop productions produced in the previous last years	1=Yes 2=No	If yes how much the amount in quintals
	<i>1. Teff</i> <i>2. Barley</i> <i>3. Wheat</i> <i>4. Maize</i> <i>5. Sorghum</i> <i>6. bean</i> <i>7. Pea</i> 99. Others		
503	What kind of latrine does your family have?	1. water flush 2. VIP 3. Traditional latrine 4. open field 99. Other (specify)	
504	What is the type of roof of the house?	1. Metal 2. Plastic sheet 3. Thatch	

		4. wood 5.tiles 99. Other (specify)	
505	Do you have kitchen?	1. Yes 2. No	
506	Do you have separate rooms for cattle?	1.yes 2.no	
507	What is the wall of your residence house made of?	1. Concrete 2. Cement 3. Wood planks 4. Carpet 5. Mud 99. Other,(specify)	

ባህር ዳር ዩኒቨርሲቲ
ህክምና እና ጤና ሳይንስ ኮሌጅ
ህብረተሰብ ጤና ት/ት ቤት
የጠቅላላ ህብረተሰብ ጤና ት/ት ክፍል
አባሪዎች

አባሪ 1: የተሳታፊዎች ስምምነት መረጃ ወረቀት እና በመረጃ የተደገፈ የስምምነት ቅጽ

ሀ) ለተሳታፊዎች የመረጃ ወረቀት

ሰላም እንደምን ዋሉ/አደሩ!

ስሜ _____ እባላለሁ፤ በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ተማሪ በሆኑት በአቶ ደሴ ተሻገር ስም ነው የመጣሁት። በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ት/ት ቤት በህብረተሰብ ጤና ሁለተኛ ዲግሪ ለማግኘት የሚጠበቅባቸውን መስፈርቶች በከፊል ለማሟላት በፋርጣ ወረዳ የጤና አገልግሎት አጠቃቀምና ተያያዥ ጉዳዮች ላይ የጤና አጠባበቅ ክፍያ ማስቀረት ላይ የሚያደርሰውን ተፅእኖ ላይ ጥናት በማድረግ ላይ ይገኛል። ይህንን ጥናት እንዲያካሂድ በፋርጣ ጤና ጥበቃ ጽ/ቤት፣ በዞኑ ጤና ጥበቃ ጽ/ቤት አስተዳዳሪ እና በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ትምህርት ቤት ፈቃድ ተሰጥቶታል። የዚህ ጥናት አላማ የክፍያ ማቋረጥ ስርዓት (ፖሊሲ) በጤና አጠባበቅ አገልግሎቶች አጠቃቀም እና በተዛማጅ ምክንያቶች ላይ ያለውን ተጽእኖ ለመገምገም ነው። ጥናቱ ለፖሊሲ አውጪዎች እና ለሌሎች ምሁራን ከክፍያ ነጻ የጤና አገልግሎት ስርዓት ጋር በተያያዙ ጉዳዮች ላይ የመነሻ መረጃን ለማቅረብ ይረዳል። ተሳትፎዎን የሚወስነው ፍቃደኝነትዎ ብቻ ነው። በዚህ ጥናት ለመሳተፍ ወይም ላለመቀበል የመስማማት ሙሉ መብት አለዎት። በጥናቱ ላለመሳተፍ ከወሰኑ በማንኛውም ጊዜ ቃለ መጠይቁን የማቋረጥ አማራጭ አለዎት። በተጨማሪም፣ በዚህ ጥናት ላለመሳተፍ የመወሰን ነፃነት አለዎት። በዚህ ጥናት ውስጥ ከመሳተፍ ጋር የተያያዘ ምንም አይነት አደጋ ወይም ጉዳት የለም። ለመቀላቀል ቢመርጡ፣ ውድቅ ቢያደርጉ ወይም በመጨረሻ ለማቆም ብትወስን/ኝ ምንም ዓይነት መጥፎ አያያዝ አይኖርብዎትም። በሚካሄደው ጥናት ላይ ለመሳተፍ ከተስማሙ መጠይቁ ከ 5-10 ደቂቃ ይወስዳል። ለሁሉም ጥያቄዎች ስመዎት እንዳይገለጽ ይከፋፈላሉ፣ ማንነቶች አይጻፉም ወይም አይጠቀሱም፣ እና እርስዎ የሚያጋሩትን ማንኛውንም መረጃ በሚስጥር እናስቀምጣለን። ዋናው መርመሪያ ኮድ ያልሆነውን መረጃ የማግኘት ብቸኛ ሰው ይሆናል፣ ዝርዝሩን እያወቀ፣ እና ትንታኔ እንደጨረሰ ይጠቀማል። መረጃው ለጥናቱ ካልሆነ በቀር ለምንም ጥቅም ላይ ሊውል አይችልም። ለዚህ ጥናት ውጤት የእርስዎ ዝግጁነት እና ንቁ ተሳትፎ ወሳኝ ናቸው። ከዋናው ተመራማሪ ተጨማሪ መረጃ በሚፈልጉበት ጊዜ የሚከተሉትን መረጃዎች መጠቀም ይችላሉ።

ዋና ተመራማሪ፡ ደሴ ተሻገር

ስልክ ቁጥር፡ 0918502953

ኢሜል፡ destesha63@gmail.com

ለ) በመረጃ የተደገፈ የስምምነት ቅጽ

ይህንን ቅጽ አንብቤ ወይም በምረዳው ቋንቋ እንዲያነብልኝ በማድረግ ከላይ የተዘረዘሩትን ቃላት በሙሉ ተረድቻለሁ። ስለሆነም በዚህ ጥናት መሳተፍ አለመሳተፌ ሙሉ በሙሉ የእኔ ውሳኔ እንደሆነ፤ የእኔ መረጃ በሚስጥር እንደሚጠበቅ እና በማንኛውም ጊዜ የመውጣት መብት እንዳለኝ ተረድቻለሁ።

በጥናቱ ውስጥ ለመሳተፍ ፈቃደኛ ነዎት?

አዎ አይደለ

ምላሽዎ አዎ ከሆነ፣ ወደ ቃለ መጠይቁ ይቀጥሉ

የተሳታፊ ፊርማ/አውራ ጣት ህትመት: _____ ቀን _____

የጠያቂው ስም: _____ ፊርማ _____

የተቆጣጣሪው ስም: _____ ፊርማ _____

ለመጠይቁ የተሰጠ ቁጥር (መታወቂያ ቁጥር): _____

ቃለ መጠይቁ የተካሄደበት ቀን: _____

ቃለ መጠይቁ የጀመረበት ሰዓት: _____ የተጠናቀቀበት ሰዓት: _____

አባሪ 2: የአማርኛ መጠይቅ

ክፍል I: ቅድመ ሁኔታዎች (ማህበራዊ ስነ-ሕዝብ ባህሪያት)

ተ.ቁ	ጥያቄዎች	ምላሽ
100	ጾታ	1. ወንድ 2. ሴት
101	የአባወራወ/ዋ ዕድሜ	_____
102	ሃይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 99. ሌላ (ይግለጹ) _____
103	የመኖሪያ ቦታ	1. ከተማ 2. ገጠር
104	የጋብቻ ሁኔታ	1. ያላገባ 2. ያገባ 3. የተፋታ 4. ባሉዋ/ሚስቱ የሞተበት 5. የተለየ
105	የአባወራወ/ዋ የትምህርት ደረጃ	1. ማንበብ እና መጻፍ የማይችል 2. ማንበብ እና መጻፍ የሚችል 3. የመጀመሪያ ደረጃ 4. ሁለተኛ ደረጃ 5. ኮሌጅ እና ከዚያ በላይ
106	የአባወራወ/ዋ የሥራ ሁኔታ	1. ገበሬ 2. የቤት አመቤት

		3. የቀን ስራተኛ 4. ነጋዴ 5. ሌላ
107	በቤተሰብ ውስጥ ያሉ የቤተሰብ አባላት ብዛት?	ጠቅላላ ብዛት _____

ክፍል II : የጤና አጠባበቅ እንዲኖረን የሚያደርጉ ሁኔታዎች

ተ.ቁ	ጥያቄዎች	ምላሽ	ዝላል
200	የድሃድሃ ነፃ ህክምና ፕሮግራምን ይጠቀማሉ?	1.አዎ 2.አልጠቀምም	አልጠቀምም ከሆነ ወደ ጥያቄ ቁጥር 203 ዝላል
202	አዎ ከሆነ ነፃ የጤና አገልግሎት መረጃ እንዴት አገኙ?	1. በጤና ተቋም ላይ በተለጠፈ ማስታወቂያዎች 2.ከጤና ባለሙያዎች 3. ከዘመድ 4. ከጓደኛ 5. ከሚዲያ 99. ከሌሎች	
203	ከቤትዎ እስከ አቅራቢያዎ ወዳለ ጤና ተቋም ለመድረስ ምን ያህል ይርቃል?	_____ ኪ.ሜ	
204	ከቤትዎ እስከ አቅራቢያዎ ወዳለ ጤና ተቋም ለመድረስ ምን ያህል ጊዜ ይወስዳል?	_____ ደቂቃ	
205	በአቅራቢያዎ ወደሚገኝ የጤና ተቋም ለመጓዝ ምን ያህል ያስከፍላል?	1. ምንም ወጪ የለውም 2. ርካሽ 3. መካከለኛ 4. ውድ	
206	የቤተሰብዎ ጠቅላላ ገቢ በወር ስንት ነው?	_____ የኢትዮጵያ ብር	

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ክፍል III: የጤና አጠባበቅ አጠቃቀም እና አስፈላጊነት

ተ.ቁ	ጥያቄዎች	ምላሽ	ዝላል
300	የእርስዎን እና የቤተሰብዎን የጤና ሁኔታ እንዴት ይገልፁታል?	<ol style="list-style-type: none"> 1. በጣም ታማሚ 2. ታማሚ 3. በመጠኑ ጤነኛ 4. ጤነኛ 5. በጣም ጤነኛ 	
301	ሥር የሰደደ በሽታ አለብዎት?	<ol style="list-style-type: none"> 1. አዎ 2. የለብኝም 	የለብኝም ከሆነ ወደ ጥያቄ ቁጥር 303 ይዝለሉ
302	ለጥያቄ ቁጥር 301 ፣ መልስዎ አዎ ከሆነ፣ የትኛው አይነት በሽታ አለብዎት?	<ol style="list-style-type: none"> 1. ካንሰር 2. የስኳር በሽታ 3. የደም ግፊት 4. የልብ ሕመም 5. ስትሮክ 6. የአእምሮ ሕመም 7. የመተንፈሻ አካላት በሽታ (COPD) 8. የኩላሊት በሽታ 99.ሌላ (ይግለጹ) _____ 	
303	የአካል ጉዳት ችግር አለብህ/ሽ?	<ol style="list-style-type: none"> 1.አዎ 2.የለኝም 	
304	አሁን ባለው የጤና አገልግሎት አቅርቦት አጠቃላይ ጥራት ላይ ያለዎት አመለካከት ምን ይመስላል?	<ol style="list-style-type: none"> 1. በጣም ጥሩ አይደለም 2. ጥሩ አይደለም 3. መካከለኛ 4. ጥሩ 5.በጣም ጥሩ 	

ክፍል IV: የጤና አጠባበቅ አጠቃቀም ሁኔታ

ተ.ቁ	ጥያቄዎች	ምላሽ	ዝላል
400	ባለፉት 12 ወራት ውስጥ ወደ ጤና ተቋም ሂደው ታክመው ያውቃሉ?	1. አዎ 2. አላወቅም	አላወቅም ከሆነ ወደ ጥያቄ ቁጥር 404 ዝላል
401	ለጥያቄ ቁጥር 500 መልስዎ አዎ ከሆነ ባለፉት 12 ወራት ውስጥ ለምን ያህል ጊዜ ወደ ጤና ተቋም ለህክምና ሄድኩ/ሽ ?	_____	
402	ሲታመሙ የትኛውን የጤና ተቋም ይመርጣሉ?	1. ጤና ፖስት 2. ጤናጣቢያ 3. የመንግስት ሆስፒታል 4. የግል ክሊኒክ 5. የግል ሆስፒታል 6. መድሃኒት አቅራቢ / ፋርማሲ	
403	የሚፈልጉትን ህክምና ሁሉ ማግኘት ችለዋል?	1. አዎ 2. አላገኘሁም	
404	ለጥያቄ ቁጥር 400 ተጠቅሜ አላወቅም ከሆነ በሚታመሙበት ጊዜ የጤና ተቋማትን የማይጎበኙበት ምክንያት ምንድን ነው?	1. የጤና ተቋሙ በጣም ሩቅ ስለሆነ 2. ለትራንስፖርት የሚሆን ገንዘብ ስለሌለኝ 3. በሽታው ከባድ ስላልንበር 4. መድሃኒት ከሱቅ ስለምገዛ 5. የቤት ህክምና ስለምጠቀም 6. ከባህል ሀኪም ስለምሄድ 7. ፀበል ስለምጠቀም 8. የተቋሙ ጥራት ዝቅተኛ ስለሆነ 9. አስቸጋሪ ቢሮክራሲ ስላለ 10. ምክንያት የለኝም። 99. ሌላ	

405	ከፋይ ነህ/ሽ ?	1. አዎ 2. አልከፍልም	
406	አዎ ከሆነ የህክምና ወጪውን የሚሸፍነው ማን ነው?	1. ራሴ 2. መንግስት/ነጻ ህክምና 3. ማህበረሰቡ 99. ሌላ (ይግለጹ)	

ክፍል V: የሃብት መጠን መለኪያ

ተ.ቁ	ጥያቄዎች	ምላሽ	ዝላል
500	ከዚህ በታች ከተዘረዘሩት ንብረቶች በቤታችሁ ውስጥ ያላችሁ የቱ ነው? (ከአንድ በላይ መልስ ይቻላል)	እነዚህ ቁሳቁሶች አሉዎት? 1=አዎ 2=የለም።	ምንያህል በቁጥር
	1. የሚሰራ ሬዲዮ/ቴፕ 2. ዘመናዊ አልጋዎች 3. ጥጥ/ስፖንጅ/ስፕሪንግ ፍራሽ? 4. ሞባይል / ተንቀሳቃሽ ስልክ 5. ሀይል ቆጣቢ ምድጃዎች 99. ሌላ (ይግለጹ)		

501	<p>ቤተሰቡን ከሚከተሉት ዉስጥ የትኛው የእንስሳት ሀብት እንዳላቸው ይጠይቁ</p>	<p>እነዚህ እንስሳት አሉዎት? 1=አዎ 2=አይ</p>	ብዛት
	<p>1. በሬ 2. ላሞች 3. ፈረስ 4. አህያ 5. በቅሎ 6. ፍየል 7. በግ 8. ዶሮ 99. ሌሎች (ይግለጹ)</p>		
502	<p>ባለፉት ዓመታት ከተመረቱት የሰብል ምርቶች ዉስጥ የትኛውን ያመርታሉ</p>	<p>1= አዎ 2= አላመርትም</p>	አዎ ከሆነ ምን ያህል መጠን በኩንታል
	<p>1. ጤፍ 2. ጉበስ 3. ስንዴ 4. በቆሎ 5. ማሽላ 6. ባቄላ 7. አተር 99. ሌሎች</p>		
503	<p>ቤተሰብዎ ምን ዓይነት መጻዳኛ ቤት አላቸው?</p>	<p>1. በውሃ የሚታጠብ 2. የአየር ማናፈሻ የተሻሻለ መጻዳኛ ቤት (VIP) 3. ባህላዊ መጻዳኛ ቤት 4. ሜዳ ላይ</p>	

		99. ሌላ (ይግለጹ)	
504	የቤቱ ጣሪያ ከምን የተሰራ ነው?	1. የቆርቆሮ ብረት 2. ፕላስቲክ 3. ሳር 4. እንጨት 5. ሰቆች 99. ሌላ(ይግለጹ) -----	
505	ኩሽና ቤት አለህ/ሽ?	1. አዎ 2.የለም	
506	ለኩባቶች የተለየ ክፍል አለህ/ሽ?	1. አዎ 2.የለም	
507	የመኖሪያ ቤትዎ ግድግዳ ከምን የተሠራ ነው?	1. ከኮንክሪት 2. ከሲሚንት 3. ከእንጨት 4. ምንጣፍ 5. ጭቃ 99. ሌላ (ይግለጹ) -----	

አመሰግናለሁ!

Declaration form

Declaration

I, the under signed, declared that this is my original work, has never been presented in this or any other university, and that all the resources and materials used for the research, have been fully acknowledged.

Student Name: Dessie Teshager (BSC NURSE)

Signature: _____

Date of Submission: _____

Declaration form

BAHIR DAR UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCES, SCHOOL OF PUBLIC HEALTH DEPARTMENT OF HEALTH SERVICE MANAGEMENT AND HEALTH ECONOMICS

Final Approval of research Thesis report sheet

I hereby certify that I have supervised, read, and evaluated this thesis report “the effect of fee waiver system on health service utilization and associated factors among households in Farta district, south Gondar, Ethiopia, 2022” by Dessie Teshager, prepared under my guidance and support. Hence I approved as this thesis can be submitted as the final thesis draft for different purposes.

Advisors

1. Name _Mr Desta Debalkie(Assistant Professor In HSM)_____ Signature _____ Date _____

2. Name MR Melese Belaynh(MPH-MHA)_____ Signature _____ Date _____

EXAMINERS

Name DR Mohammed Hussien (MPH-MHA)

Signature _____ Date _____

Department Head

Name _____ Signature _____ Date _____

Declaration form

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Advisors

1. MR Desta Debalkie (Assistant Professor in HSM) Signature _____ Date _____

2. MR Melese Belayneh (MPH-MHA)

Signature [Signature] Date 20/06/15

EXAMINERS

DR Mohammed Hussien (MPH-HSM)

Signature [Signature] Date 20/06/15
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Department Head

Name Habtamu

Signature [Signature] Date 21/06/15

