COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

MAGNITUDE OF COMMON CHILDHOOD ILLNESS, HEALTH CARE SEEKING BEHAVIOR, AND ASSOCIATED FACTORS IN EFRATANA GIDIM DISTRICT, EAST AMHARA, ETHIOPIA, 2020

BY: GENANEW KASSIE (BSC)

ADVISOR: EWNETU FIRDAWEK (PhD)

A THESIS SUBMITTED TO SCHOOL OF PUBLIC HEALTH, COLLEGE OF HEALTH SCIENCES, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER'S IN PUBLIC HEALTH

JUNE, 2020

ADDIS ABABA, ETHIOPIA

Addis Ababa University

College of Health Science

School Of Public Health

Research thesis submitted by degree of Masters in Public Health student

Name of investigator	**Genanew Kassie (BSc)**
Name of Advisor(s)	**Ewnetu Firdawek (MPH, PhD)**
Title of the Research	**Magnitude of common childhood illness, healthcare seeking behavior, and associated factors in Efratana Gidim District, East Amhara, Ethiopia, 2020**
Duration of project	**March 15-April 15, 2020**
Study Area	**Efratana Gidim District, East Amhara, Ethiopia**
Total Cost of the project	**31,408**
Source of budget	**Addis Ababa University**
Address of investigator	**Mobile Phone -0943862546** **Email.*genanaw21kassaye@gmail.com***

Acknowledgment

First and foremost, I would like to thank the almighty God. I am very grateful to my advisor Ewnetu Firdawek (PhD) for his unreserved comments and generous suggestions throughout the development of this study.

I would also like to acknowledge Addis Ababa University, College of health sciences, School of Public Health for creating opportunity to conduct this research as part of the requirements of Master's degree with Public Health.

Furthermore, I would like to acknowledge the head of Efratana Gidim District health Office for giving their permission to conduct this study and the District Health Office staffs are fully acknowledged for their cooperation and providing valuable information.

Finally, I am grateful to all the study participants who gave time to respond for this interview and the data collectors with supervisors for their full cooperation throughout the data collection period.

Table of Contents

List of tables

List of figures

Acronyms and abbreviations

AOR Adjusted Odds Ratio

ARI Acute Respiratory Infection

BCC Behavioral Change Communication

CI Confidence Interval

COR Crude Odds Ratio

EDHS Ethiopian Demographic and Health Surveys

GBD Global Burden of Disease

HC Health Center

HEP Health Extension Program

HFs Health Facilities

HIT Health Information Technologist

HP Health Post

HSDP Health Sector Development Program

ICCM Integrated Community Case Management

IEC Information Education and Communication

PHC Population and Housing Census

SDGs Sustainable Development Goals

SPSS Statistical package for social sciences

UNICEF United Nations International Children's Emergency Fund

WHO World Health Organization

Abstract

Background: Childhood infectious illness mainly diarrheal diseases, febrile illnesses, and acute respiratory tract infection remain the leading causes of morbidity and mortality among children below five years. Delay and inappropriate healthcare-seeking practice of caregivers' were the major reason for under-five child death in developing countries including Ethiopia. According to WHO, a timely healthcare-seeking practice can effectively save the lives of children by 20%, particularly from ARIs, and significantly minimize its morbidities.

Objective: To assess the magnitude of common childhood illness, healthcare-seeking behavior, and associated factors in Efratana Gidim District, Ethiopia, 2020.

Methods: A community based crossectional study was conducted from March 15 to April 15, 2020, among urban and rural respondents. Multistage sampling method was employed to a total of **661** respondents by using semi-structured questioner through face to face interviews. Bivariate and multivariate logistic regression were carried out to assess association between healthcare-seeking behavior and predictive variables. Odds ratio with 95% confidence interval was used to measure the strength of associations and statistical significance was considered at p-value <0.05.

Results: the overall two weeks prevalence of childhood illness was 24.1%, (95% CI: 21.1%-27.3%) and 59.1%, (95% CI: 51.1%-66.8%) of caregivers sought treatment at health facility. Moreover, fever, cough, and diarrhea accounted for 16.9%, 16.8%, and 11% respectively. Caregivers' level of education (AOR=2.56:95%CI: 1.09, 5.99) and residence (0.26: 95%CI: 0.09, 0.73) were significant factors for childhood illness and experience of child death (AOR=3.766; 95%CI: 1.726, 8.873), diarrheal symptoms (AOR=3.914; 95%CI: 2.043, 10.828) and access to transportation (AOR=3.352; 95%CI: 1.049, 10.710) were predictors of HCSB.

Conclusion: the prevalence of common childhood illness was high however; treatment-seeking behavior of caregivers for childhood illness was low. Caregivers level of education and residence were significant factors for childhood illness and experience of child death, symptoms of diarrhea, and access to transportation were predictors of HCSB of caregiver for childhood illness. Therefore repeated health education on basic prevention of common childhood illnesses and health promotion strategies to enhance caregivers' HCSB are critically important. .

Keywords: Childhood illnesses, Healthcare seeking behavior, Ethiopia

1. Introduction

1.1. Background

Under-five child mortality is a core indicator not only for child health and well-being but also for the level of welfare in a country. Globally, under-five child mortality reduced from 93 deaths per 1,000 live births in 1990 to 39 in 2018(1). however, 5.4 million under-five children died in 2017(2), Sub-Saharan Africa countries contributed half of the worldwide death of under-five children(3) In Ethiopia, although significant achievements have been made under-five child mortality is still high costing 55 deaths per 1000 live births(4). And the top leading causes for under five-child mortality were infectious diseases; diarrheal disease (20%), pneumonia (19%) and acute respiratory infections(ARI)(5) which are also called common childhood illnesses (6)

Common childhood illnesses are communicable diseases that are responsible for considerable under-five child morbidity, mortality, and disability particularly in low and middle-income countries across the world. Acute Respiratory infection, diarrheal disease, and febrile illness are among the leading cause of common childhood illnesses which exerts a major effect on the health of children below five years (7)

To reduce under-five child morbidity, mortality and disability appropriate healthcare-seeking behavior by caregivers do have an important contribution(8), where healthcare-seeking behavior is an action provided by a caregiver who perceived his/her child has a sign and symptom of childhood illness to find the appropriate treatment, hence, enhancing appropriate healthcare-seeking reduces severity and death of a child from easily treatable causes (9)

A large number of children still die before reaching health facilities due to delayed and inappropriate healthcare seeking, despite appropriate healthcare-seeking practice has a considerable impact to reduce childhood morbidity and mortality (10).

In Ethiopia, the healthcare-seeking behavior of caregiver was reported as poor (11–13), and various factors were identified for treatment-seeking practice being low. factors such as socioeconomic, cultural and demographic factors(14), religion, level of education, residence and family size were some of the reported factors (15–17)

1.2.Statement of the Problem

Children under five years are highly vulnerable and susceptible for various infectious diseases particularly with common childhood illnesses than any other age groups (18), and health facility-based treatment for common childhood illness were considered as a powerful interventions to tackle under-five child morbidity and mortality hence these deaths are due to preventable and treatable causes and have proven antibiotic treatment (19), however, WHO advocates community and family based healthcare practices for basic healthcare services of under-five children(20,21)

Appropriate treatment-seeking behavior has a tremendous effect in order to decrease the severity and complication of common childhood illnesses (9). Hence WHO suggested that timely healthcare-seeking practice can effectively save the lives of children by 20%, particularly from an acute respiratory infection, and significantly minimize its morbidities (22).

In Africa particularly Sub Saharan region health care-seeking behavior of caregivers for common childhood illness was reported as lower than any other region, to mention (41%) in Sub Saharan Africa, (66%) in North Africa and (62%) in East Asia (23). But a study conducted in Kenya, Sudan and Tanzania showed bit higher practice of seeking modern treatment from Sub Saharan countries and reported as 60.5%, 80% and 85% respectively(9,24,25) in contrast in Nigeria 34.5% and Ethiopia 30% were reported to have lower healthcare service utilization (8,24).

Based on EDHS 2016 report, about 14%, 12%, and 7% of under-five children had fever, diarrhea, and acute respiratory infections respectively two weeks preceding the date of data collection and only 35%, 44%, and 30% of caregivers sought treatment respectively from health facility (5)

Several studies conducted in Ethiopia revealed that healthcare-seeking behavior of caregiver were low and only few caregivers' sought treatment for their sick under-five children from health facility (11–13). Studies conducted in Amhara region and North Shoa Zone also reported that healthcare-seeking behavior of caregivers for children below five years was very low(12,26)

Different literature conducted elsewhere also identified that caregivers' healthcare-seeking behavior for childhood illness were influenced by various factors including socio-demographic

characteristics, accessibility to health services, level of education, severity of disease, distance to health facility and residence(11,29,30).

It's also believed that healthcare seeking practice is a product of interest and motivation of caregivers to seek healthcare in addition to access and availability of health institutions (18).

In Ethiopia part of Sustainable Development Goals (SDGs), the government made significant strides to improve healthcare for childhood illness and to decrease death of under-five children with a minimum of 29 deaths per 1000 live births by 2020 (31). In order to improve healthcare-seeking behavior and utilization of healthcare services the ministry introduced a community-based treatment strategy called ICCM(Integrated Community Case Management) for common childhood illness through the platform of existing HEP (Health Extension Program)(32).

Even though limited knowledge is available on general healthcare-seeking behavior of caretakers for common childhood illness, some important factors like access to transportation and distance to health facility and magnitude of common childhood illness with its determinant factors were not yet sufficiently addressed. Therefore, the purpose of this study was to assess the magnitude of common childhood illness, healthcare seeking behavior and associated factors in Efratana Gidim District, East Amhara, Ethiopia, 2020.

1.3.Significance of the Study

Despite the availability of literature on magnitude and factors of healthcare-seeking behavior of caregivers' for common childhood illnesses, evidences were not available particularly with factors and magnitude of common childhood illnesses and some important factors of healthcare-seeking behavior like access to transportation and distance to health facility were not yet well addressed.

A clear understanding on magnitude of common childhood illnesses, healthcare seeking behavior and determinant factors will lead to correct decision making by a caretakers and stakeholders who is vital to improve child health and healthcare delivery at all levels. This assessment is therefore significant;

To reduce child morbidity and mortality in Efratana Gidim district and other districts with population of common characteristics by identifying major factors and recommending possible solutions.

To take actions and to support parents in seeking healthcare for severely ill children and other children in need.

The finding of this study will also be useful for the concerned stakeholders and local planners to design interventions for the enhancement of under-five child health in line with SDG targets.

Finally, this study will be used as a source of literature for scholars who wish to do further study on healthcare-seeking behavior on common childhood illness and associated factors of caregivers with a child age between 2 and 59 years.

1.4. Literature review

1.4.1. Magnitude of common childhood illnesses

Globally it has been planned to end under-five child morbidity and mortality caused by preventable infectious disease by the year 2030, hence reducing newborn and under-five child mortality was a global health priority agenda by sustainable development goals (SDGs)(2).

Common childhood illnesses were responsible for a significant number of under-five child morbidity and mortality, especially in low and middle-income countries worldwide. Diarrheal diseases, acute respiratory Infections, and febrile illnesses exert a major impact on the health of under-five children (7).

A study conducted in different countries of sub-Saharan Africa identified the high burden of common childhood illnesses within the region(33–35). For instance, a crossectional survey conducted in Tanzania Kilombero, Ulanga, and Rufiji districts, reported that the prevalence of common childhood illnesses were 25%, 12% and 6.7% for fever, diarrhea and acute respiratory infections respectively(34)

Based on EDHS 2016 report, febrile illnesses, diarrheal disease and acute respiratory infections were reported with about 14%, 12% and 7% of under-five children respectively two weeks preceding the period of data collection(5)

Different studies conducted in Ethiopia also revealed that the burden of common childhood illnesses was paramount among under-five children. For instance, a study done at Dangila District reported that the magnitude of common childhood illnesses were 26%, 24% and 20% for cough, fever, and diarrhea respectively(16,28,30,36)

Common childhood illnesses have been also creating a big burden for the study area, particularly in Amhara region. Studies done in different districts of the region specifically for diarrhea reported that the prevalence was between 13.5-23.8%(37–39)

1.4.2. Status of healthcare-seeking behavior of caregivers for childhood illness

Various literature from developing nations have reported that delay and not seeking appropriate healthcare, contributes to a large number of under-five child mortality (26,40,41)

Delayed healthcare-seeking practices were reported to be the major cause of death and complication among children under five years presenting to different hospitals with pneumonia, diarrhea, and malaria(42). On the other hand, studies reported that timely healthcare-seeking behavior had critical importance in reducing life-threatening childhood complications and deaths for a child with severe disease(43).

Timely recognition of sign and symptom and immediate healthcare seeking for treatment of common childhood illnesses can prevent many of child deaths (44), and Mothers as a primary caregiver are expected to be responsible for early identification and seeking treatment of under-five children since the ability of mothers to recognize sign and symptoms in their children is also an important step to save the life of several under-five children(45).

A facility and community based cross-sectional study conducted in Ethiopia revealed that the healthcare-seeking behavior of caregivers for common childhood illness was within the range of 26.5% - 55.4% (11,12,27,29,30).

Similar studies conducted in the study area Amhara region also showed that caretakers healthcare-seeking behavior for common childhood illness were reported even lower than the national level(12,46,47)

Analysis from EDHS 2011 and 2016 also revealed that the prevalence of healthcare-seeking behavior of caregivers particularly for acute respiratory infections were 27.2% and 36.5% respectively (48,49).

1.4.3. Factors Associated with Healthcare-seeking Behavior

1.4.3.1.Socio-demographic Factors

Several literatures conducted at different places and time reported that sociodemographic factors are associated with healthcare-seeking practices.

A community-based cross-sectional study conducted in Kenya showed that maternal and child age were significantly associated with healthcare-seeking behavior of caregivers for common childhood illness, as result maternal age 35 and older were 51% less likely to take their sick under-five children for healthcare seeking to health facility than mothers aged less than 35 years. In addition, child age was also a predictor for healthcare service utilization, where children age less than one year were more than two times more likely to have treatment from health facilities than children age four and above(9).

In Ethiopia a cross-sectional study conducted in Hadiya, Southern Ethiopia revealed that the marital status of mothers and sex of a child was significantly associated with healthcare-seeking practices. In such caregivers who were married currently were more than three times likely to receive healthcare services than mothers who were not married and being a male child were positively associated with modern treatment where male children were 1.49 times more likely to be taken to the health facility and received care than a female child (50).

With a similar study done at Northwest, Ethiopia identified that having young children were predictors of mothers' healthcare-seeking behavior, hence mothers who had under-five children above two years were nearly two times more likely to seek healthcare services compared to those who had children aged less than two years (12) .

A research conducted by Sisay at rural Ensaro District, North Shoa also revealed that healthcare-seeking for common childhood illness were more likely better when the age of caregivers' was 20-29 years compared to age greater than 35 years and those who were able to read and write was better sought treatment services than those who were unable to read and write. (27).

Besides, as far as my literature review is concerned important socio-demographic factors like religion, occupation, and the number of under-five children were not significantly associated and those predisposing factors were considered by the current study.

1.4.3.2. Enabling Factors

Access to the health facility, Family income, residence, the experience of child death before and distance from health facility was associated with healthcare-seeking behaviors.
community-based cross-sectional study conducted at Uganda identified that distance to health facility was negatively associated with healthcare services utilization hence caregivers who live less than one kilometer from a health facility were 1.65 times more likely utilized medical services than caregivers` who live above 1km(51).

Similarly, a cross-sectional study conducted in Jimma and Hararghe also showed that household distance from health institutions was associated with a lower likelihood of using healthcare services relative to home care services. Only Caregivers who walk less than 30 minutes to reach health facility were 33% more likely to utilize integrated community case management services than mothers who walk more than 30 minutes(52).

A household survey conducted in Ghana revealed that mothers from households with higher socioeconomic status were less likely to take their children to community health workers than those from lower socioeconomic status (53)

According to Sisay place of residence were appeared as an important factor which influenced healthcare-seeking, hence urban resident were more likely to seek modern healthcare than rural residents (27).

A community based study done in south-west Ethiopia and rural Nigeria reported that experience of child death before were significantly associated with healthcare-seeking behavior. Where a caregiver with child death experience was 3.5 times more likely to utilize healthcare services than their counterparts(54,55).

A facility-based study conducted in Addis Ababa, Ethiopia revealed that healthcare-seeking behavior of caregivers' for under-five children was near to four times more sought treatment of caregivers' who had experience of childhood illness, moreover, caregivers' with experience of under-five child death before were thirteen times more sought treatment compared with caregivers' with no experience of under-five child death before (11).

Access to transportation as enabling factor for healthcare seeking is not yet addressed.

1.4.3.3.Need Related Factors

Perceived severity and symptom of illness were identified as predictor of healthcare-seeking practices from health institutions.

A study conducted in Kenya, Nairobi showed that caregivers' who perceived child illness as sever were four times more likely to seek healthcare services, meanwhile, a child with diarrhea was more likely to be taken for treatment than a child with cough and fever based on the severity of illnesses (9).

A study conducted in Addis Ababa, Ethiopia by 2016 also revealed that caregivers' who perceived under-five childhood illness as sever were two times more likely sought medical treatment compared to mothers who perceived the illness as less sever (11).

1.4.4. Conceptual Framework of the Study

This study was guided by a conceptual framework adapted and modified from Andersen and Newman's (2005:96) Health Care Utilization Model.

According to this model, individuals' use of healthcare service is a function of three characteristics: predisposing, enabling, and needs-based(56).

Predisposing factors: mainly consists of sociodemographic factors which exist prior to occurrence of an illness and influences caregivers' healthcare seeking behavior and service utilization.

Enabling factors: includes access to the source of healthcare and family resources such as income level, distance to health facility, household residence, and access to transportation in order to utilize healthcare services.

Need-based factors; is caregivers' perception of the child's health and perception towards the severity of common childhood illness sign and symptoms.

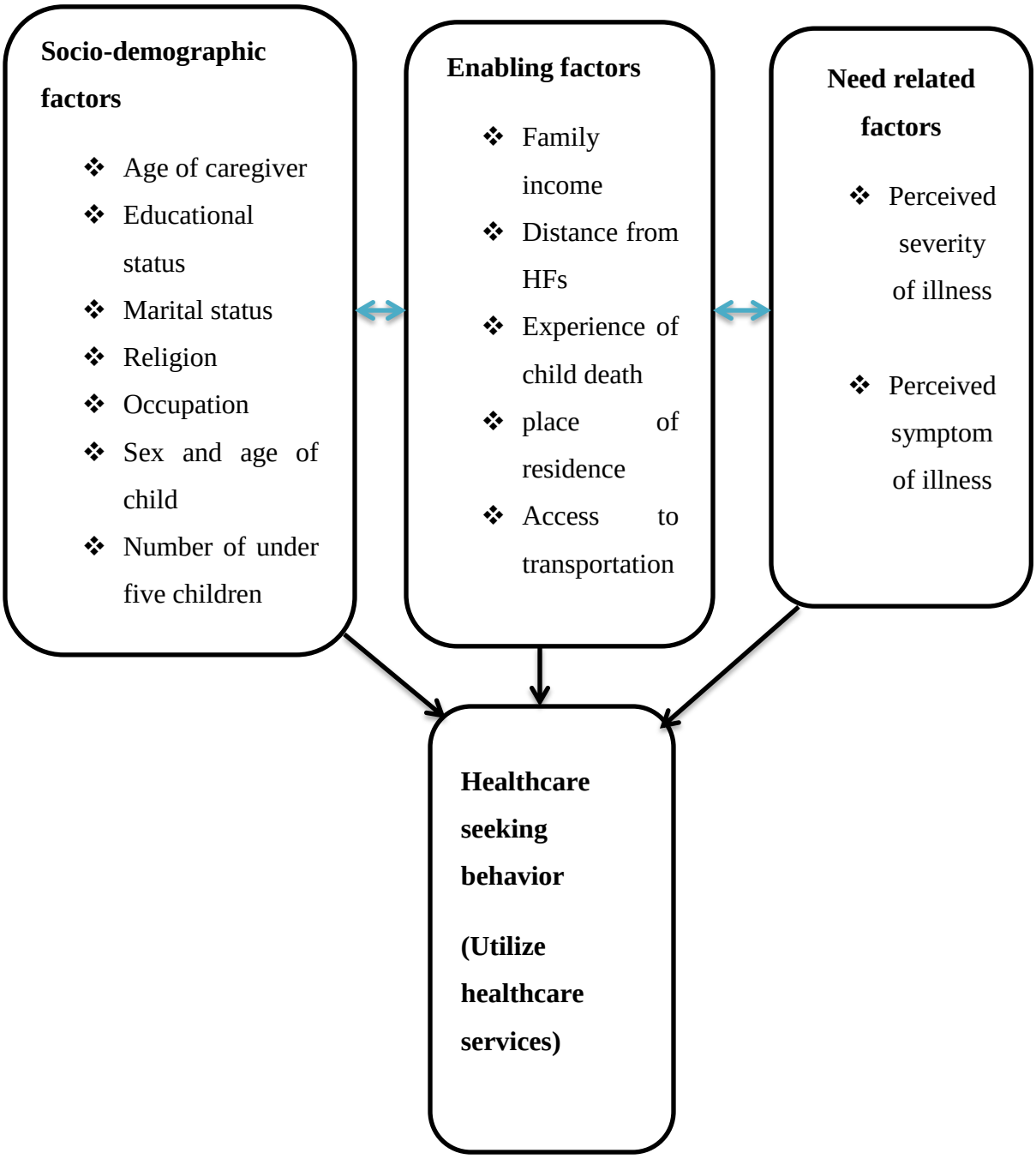

Figure 1: Adapted and modified conceptual framework for healthcare seeking behavior of caregivers for common childhood illnesses in Efratana Gidim district, 2019/20

Source: Anderson and Newman model of health care utilization (56).

2. Objectives

2.1.General objective

To assess the magnitude of common childhood illness, healthcare-seeking behavior and associated factors in Efratana Gidim District, East Amhara, Ethiopia, 2020.

2.2.Specific objectives

1. To determine the magnitude of common childhood illnesses (Fever, Cough, and Diarrhea) in Efratana Gidim District, East Amhara, Ethiopia 2020.
2. To assess the magnitude of healthcare-seeking behavior of caregivers to their sick under-five children in Efratana Gidim District, East Amhara, Ethiopia 2020.
3. To identify associated factors for childhood illness and healthcare-seeking behavior of caregivers in Efratana Gidim District, East Amhara, Ethiopia 2020.

.

3. Methods and Materials

3.1.Study Area and period

The study was conducted in Efratana Gidim District, North Shoa Zone, and Amhara regional state of Ethiopia. Efratana Gidim district is one of the 27 woredas in North Shoa. Ataye is the capital of Efratana Gidim District. It is 140 km far from Debre Birhan the capital of North Shoa Zone and 270 km far from Addis Ababa capital city of Ethiopia.

The total population of Efratana Gidim District was estimated to be 177,785 in 2019, of which 85,791 were women and 24,079 were under-five children from the projection of 2007 Ethiopian census(57). There were 24 rural and 6 urban kebeles (the smallest administrative unit) and one primary hospital, 6 Health Centers (HC), 24 Health Posts (HP), and 20 private clinics.

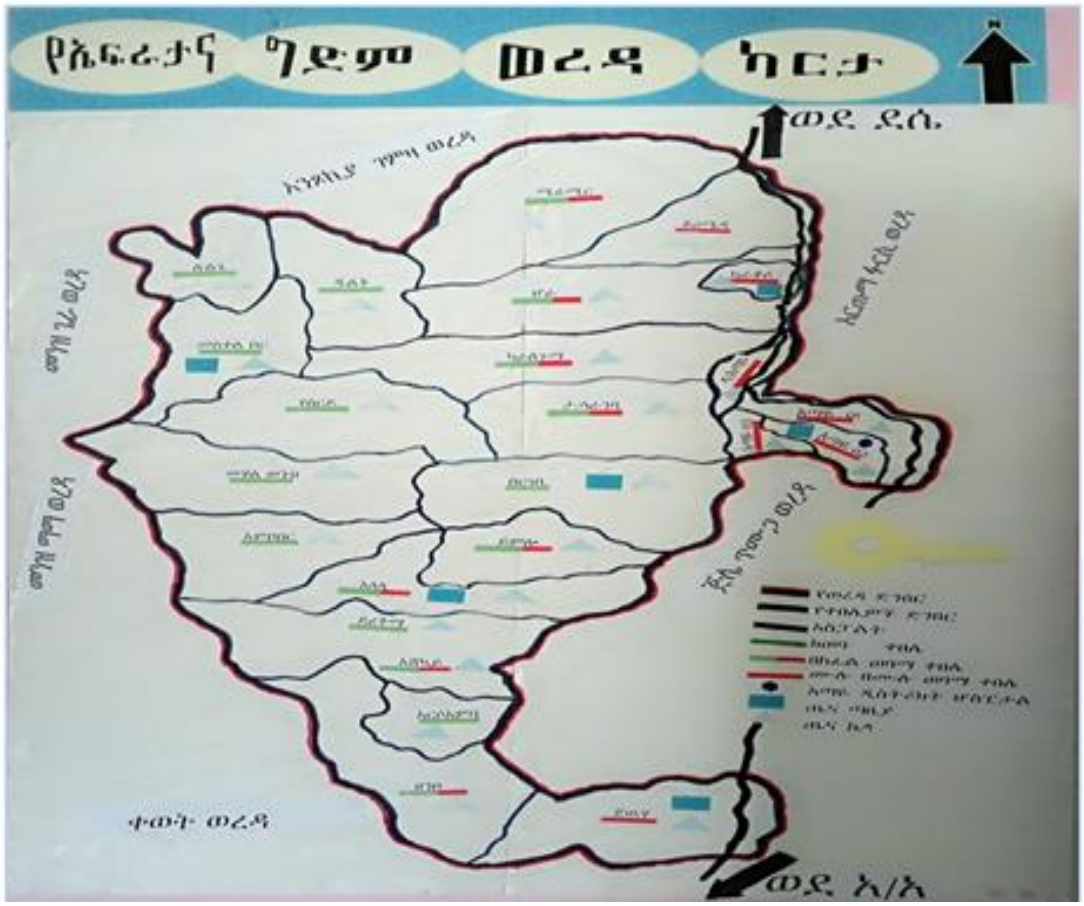

Figure 2: Map of Efratana Gidim district

The study was conducted from March 15 to April 15, 2020

3.2. Study Design

A community-based cross-sectional study was employed.

3.3. Source Population

All caregivers/mothers who had children age between 2 and 59 months and residents of Efratana Gidim District.

3.4. Study Population

Caregivers who had children age between 2 and 59 months and residents in the kebeles of Efratana Gidim District at the time of the study.

3.5.Inclusion and Exclusion Criteria

3.5.1. Inclusion Criteria

All caregivers having under-five children prior to data collection were included if they lived in selected kebeles at least six months before the study period.

3.5.2. Exclusion Criteria

Caretakers of under-five children who were unable to communicate due to hearing impairment or any other serious illness were excluded.

3.6. Sample Size Determination

The sample size was estimated using a single population proportion formula for the first objective considering the overall prevalence of childhood illnesses 26.5%(30), with a 5% margin of error and a 95% confidence level. The actual sample size was computed substituting the above values in the following formula:

$$n = \frac{(Z\alpha/2)^2 p(1-p)}{d^2}$$

$$n = \frac{(1.96)^2\ 0.265(1-0.265)}{(0.05)^2}$$

$$n = 299$$

Where:

n = is required minimum sample size

$Z\alpha/2$ = critical value for 95% confidence level which is equals to 1.96 (z value at $\alpha = 0.05$)

P = overall prevalence of common childhood illnesses from a study conducted at Bahirdar, Ethiopia

d = an absolute precision margin of error 5%.

The calculated sample size was 299, and the required minimum sample of the study brings 329 caregivers having under-five children by adding a 10% non-response rate.

For the second objective by considering the magnitude of healthcare-seeking behavior of caregivers 48.8% (12), with a 5% margin of error and 95% confidence level.

Where:

P = magnitude of healthcare-seeking behavior from the study conducted at Northwest Amhara, Ethiopia.

The calculated sample size was 384, and the total required minimum sample size for the study brings 423 of caregivers having under-five children by adding a 10% non-response rate.

For the third objective by using double population proportion formula using Epi Info7 software for individual factors at 95% confidence level with 5% margin of error, 80% power and 1:1 ratio of exposed to unexposed were calculated and presented with Table 1 below.

Table 1: Sample size determination for factors associated with healthcare-seeking behavior and common childhood illnesses using different studies, 2019/20.

Variables	**Healthcare seeking behavior**		**AOR**	**Sample size**	**Sample size with(10% nonresponse)**	**Reference**
	Exposed (%)	None exposed (%)				
Child age	<12months=36	>=36month=22	2.57	356	392	(52)
Distance to HF	<30min =35	>60min=22	1.31	408	449	
Education Status	Secondary Education=16.6	No Education=40.5	4.24	126	139	(11)
Place of residence	Urban=25.4	Rural=74.6	6.75	38	42	(27)
Perceived severity of disease	Disease severe=45.5	Disease none severe=8.1	3.75	52	57	(15)
Types of illness	Cough =66	Other symptoms=34	2.24	88	97	(50)
	Diarrhea=49.5	Other symptoms=30	1.65	216	238	(58)
	Fever=61.4	Other symptoms=38.6	1.79	166	183	(15)
Health seeking behavior				384	423	(12)
Maximum sample size				408	449	

Finally, by adding 10% possible non-response rate and design effect of **1.5** on the maximum sample size of the third objective the final sample size of the study was **674** caregivers' with under-five children.

3.7.Sampling Procedure

Within Efratana Gidim district there were 30 Kebeles 24 rural and 6 urban. A multi-stage sampling technique was conducted to select participants for the study. All eligible kebeles were divided into two clusters; rural and urban. And then two urban and six rural kebeles were selected by lottery method randomly. The total sample size allocated to each eight kebeles were estimated with proportional allocation to the number of under-five children per each selected kebeles.

Households having under-five children were identified by using a family folder from health posts and then households were selected with simple random sampling by lottery method using the household record from each health posts as a reference until the total sample size needed in each specific kebele was obtained.

Whenever there was two or more caregiver with under-five children in a family only one who were most intimate possibly biological mother of the selected under-five children were selected and if a caregiver has more than one under-five children within a household only one child was selected by lottery method.

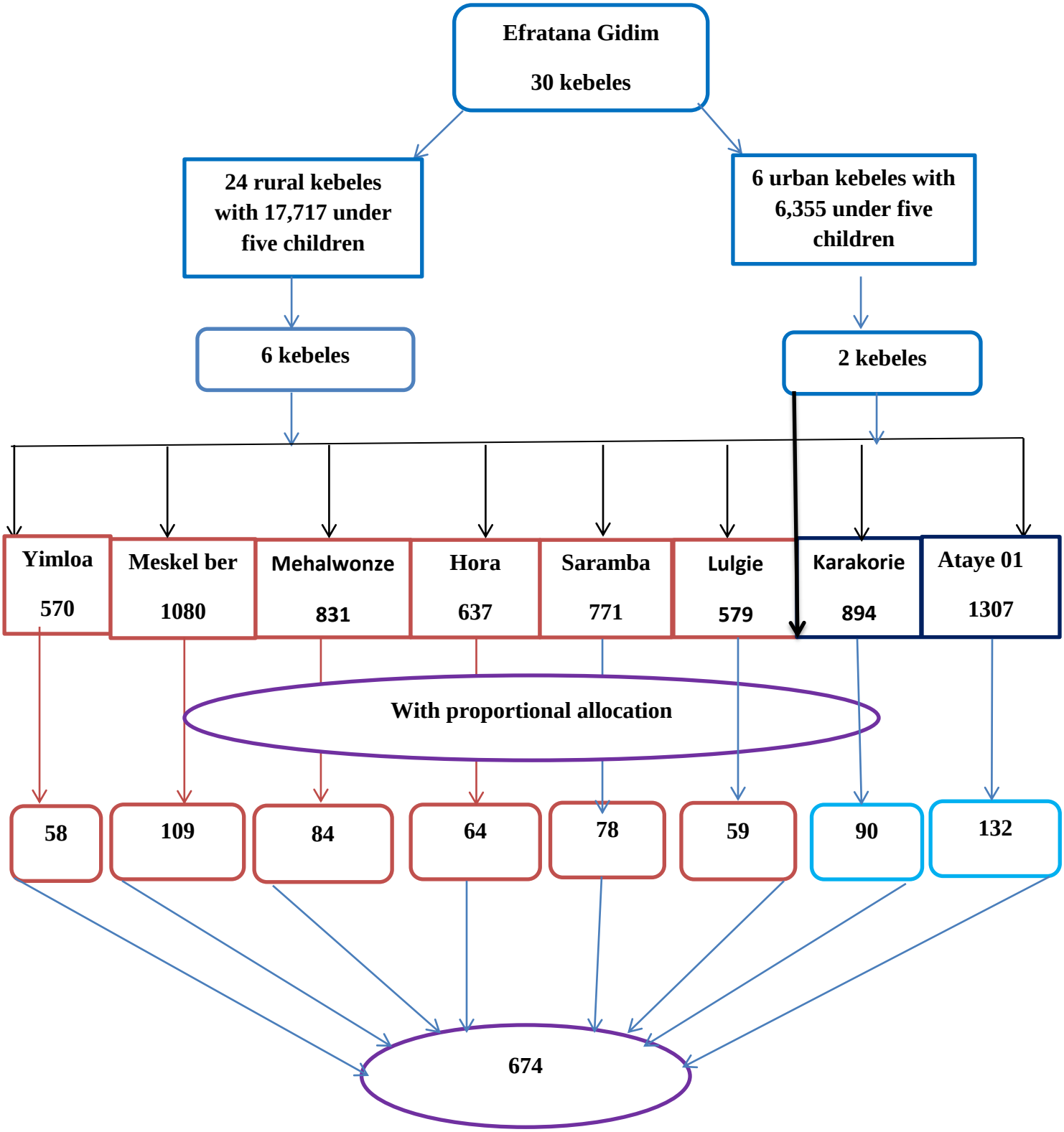

Figure 3: Schematic presentation of sampling procedure for sample size per selected Kebeles in Efratana Gidim District,, 2019/20

3.8.Data Collection Procedures

3.8.1. Data Collection Tool

The data was collected by using a semi-structured and pre-tested questionnaire. It was contextualized based on the research objective from the reviewed literature. To facilitate understanding of each question, first questionnaire were designed in English and then translated into Amharic, and translated back to English to check for consistency.

3.8.2. Data Collection Procedure

Informed voluntary written consent was obtained from each study participant after explaining the objective and purpose of the study. Data was collected through face to face interview of caregivers' by using semi-structured questionnaire. Data was collected by four clinical nurses and a public health officer was recruited for supervision.

3.9.Variables

3.9.1. Dependent Variable

Occurrence of common childhood illnesses with a child between 2 and 59 months (Cough, Diarrhea, and Fever)

Caregivers' healthcare-seeking behavior for their sick under-five children between 2 and 59 months (Yes/No).

3.9.2. Independent Variables

Socio-demographic factors: Caregivers age, educational status, marital status, family size, occupation, religion, child sex, child age and number of under-five children,

Enabling factors: monthly income, distance from health facility, Experience of child death before, place of residence, access to transportation.

Predisposing factors: perceived severity of illness, and perceived symptoms of illness.

3.10. Operational Definitions

Common childhood illnesses: includes acute respiratory infections, Diarrheal diseases, and febrile illnesses(59)

Cough: was defined as the presence of cough which was reported by caregivers' within two weeks before the date of data collection.

Diarrhea: was defined as the passage of three or more loose/liquid stools per day as perceived and reported by caregivers' within two weeks before the date of data collection (60)

Fever: were defined as a subjective feeling of increased body temperature as perceived and reported by caregivers' within two weeks before the date of data collection.

Healthcare-seeking behavior: Caregiver who responds for visiting health institutions for the recent symptom of his/her child with common childhood illness was considered as having healthcare-seeking behavior.

Presence of childhood illness: was the occurrence of at least one or more of the following symptoms (cough, diarrhea, or fever) within two weeks before the date of data collection.

Caregiver: was defined as a person who was responsible for taking care of a sick child and age 18 years and above; can be mother, father, or the relative of a child such as a guardian or legally approved person by the court.

Access to Transportation: was defined as the ability of caregivers to get safe and affordable transportation vehicles within five-kilo meters of the radius.

Manpower: was defined as the bulk of labor available for different kind of work including for carrying sick people to health institutions acute respiratory infections, Diarrhea diseases and febrile illnesses(61)

3.11. Data Quality Assurance

Data quality was assured through training of data collectors and supervisor before a date of data collection. Pilot testing was done at Kewot District, which is near to Efratana Gidim district and has similar socio-demographic characteristics. Pretesting was done with 5% of the sample size and five percent of the data were double entered to compare and assure the quality of the data.

3.12. Data Processing and Analysis

Data entry was made using Epi-data version 3.1 and then exported to Statistical Package for Social Sciences (SPSS) version 26 for further analysis. Before analysis, data were cleaned for possible errors and completeness and consistencies of questionnaires were checked. Descriptive statistics was made for categorical and continuous variables in the form of percentage and means respectively.

Binary logistic regression model were carried out to identify variables that could independently associate with healthcare-seeking behavior. Variables whose p-value less than 0.25 in bivariable analysis were included in the multivariable model. Odds ratio along with a 95% confidence level were estimated to measure the strength of association. Variables were interpreted as having a statistically significant association when the p-value was < 0.05.

3.13. Ethical Considerations

Ethical approval was obtained from the Research and Ethical Committee of the School of Public Health, Addis Ababa University. A letter of cooperation was written from the school of public health to the Efratana Gidim district health office.

Data collection was made after written and signed voluntary consent was taken from each participant of the study. In order to maintain privacy and confidentiality of study participants' information revealing identification were not collected.

4. Results

4.1.Demographic and socio-economic characteristics of respondents

A total of 661 caregivers' were interviewed giving an overall response rate of 98%, and the majority 92.6% of them was married. Almost all, 99.1%, of the study participants were mothers as primary caregivers.

The mean (±SD) age of caregivers' was 37.44 (±7.29) with a range of 21 to 68 years. Most of the respondents (84.6%) were in the age group of 25-45 years and all most all 623 (94%) of participants were Orthodox by religion.

Regarding the occupational status of respondents, the majority 473 (71.6%) were housewives followed by government-employed (19%), and nearly two-thirds of the respondents 419 (63%) had only one under-five child.

With regard to the sex of the child nearly half 333 (50.4%) were males and the rest 49.6% were females. The mean (±SD) age of children was 24.19 (±13.3) months ranging from 2-58 months. Two hundred seventy four (41.5%) of them were within the age group of 25-36 months.

The median monthly income of respondents were 900 birr with the range of 100 to 8000 birr per month and only 306 (46.3%) of respondents have attended formal education.

Table 2: Demographic and socio-economic characteristics of study participants in Efratana Gidim district, east Amhara, Ethiopia, 2020 (n=661).

Variables	Category	Frequency (n)	Percent (%)
	Female	655	99.1
Sex	Male	6	0.9
	<25	22	3.3
	25-45	559	84.6
	46-65	79	12
Age	>65	1	0.2
	Married	612	92.6
	Widowed	24	3.6
Marital status	Divorced	25	3.8
	Illiterate	355	53.7
	Elementary	105	15.9
	Secondary	142	21.5
Education	Higher	59	8.9
	Orthodox	623	94.3
	Muslim	23	3.5
Religion	Protestant	15	2.3
	Housewife	473	71.6
	Merchant	46	7
	Government Employed	126	19.1
Occupation	Others+	16	2.4
	1	419	63.4
Number of under five Children	2	238	36
	3	4	0.6
	<500	34	5.1
	500-1000	383	57.9
	1001-5000	223	33.7
Monthly Income	>5000	21	3.2
	Female	328	49.6
Child sex	Male	333	50.4
	2-12 Months	203	30.7
	13-24 months	88	13.3
	25-36 Months	274	41.5
Child Age	37-59 Months	96	14.5

Others+ includes Farmers and Daily laborers

4.2.Enabling and need related characteristics of respondents

Of the total 661 participants responded the average (mean) household size was four in numbers and nearly one third 209 (31.6%) of the respondents were urban residents.

Regarding distance from the health facility and access to transport one-fourth of respondents 161(24.4%) were living more than five-kilo meters far from health institutions, meanwhile, the majority of 302 (45.7%) respondents reported that they did not have any access to transportation services.

Out of the total study, participants interviewed only 38 (5.75%) reported that the household had an experience of child death before the time of interview and only two percent of participants had a sick child with severe disease as perceived by the respondents.

Table 3: Enabling and need related factors of respondents in Efratana Gidim district, east Amhara, Ethiopia, 2020 (n=661).

Variables	Category	Frequency (n)	Percent (%)
Distance from Health Facility	<=5 km	500	75.6
	>5 km	161	24.4
Residence	Rural	452	68.4
	Urban	209	31.6
Family Size	<=5	546	82.6
	>5	115	17.4
Severity of disease	Severe	13	2
	None severe	648	98
Experience of Child death	Yes	38	5.75
	No	623	94.25
Access to Transportation	Yes	209	31.6
	Sometimes	150	22.7
	No	302	45.7

4.3.Childhood illness prevalence

The overall prevalence of common childhood illnesses which have one or more symptoms among under-five children between two and fifty-nine months was 24.1%, (95% CI: 21.1%-27.3%). Out of 661 households surveyed, presence of cough, diarrhea and fever were 16.8%, (95% CI: 14%-19.9%), 11%, (95% CI: 8.8%-13.7%) and 16.9%, (95% CI: 14.2%-20%) *respectively*.

Furthermore, 2.4%, (95% CI: 1.4%-3.9%) of children between the age of 2-59 months had symptoms of cough, fever, and diarrhea simultaneously.

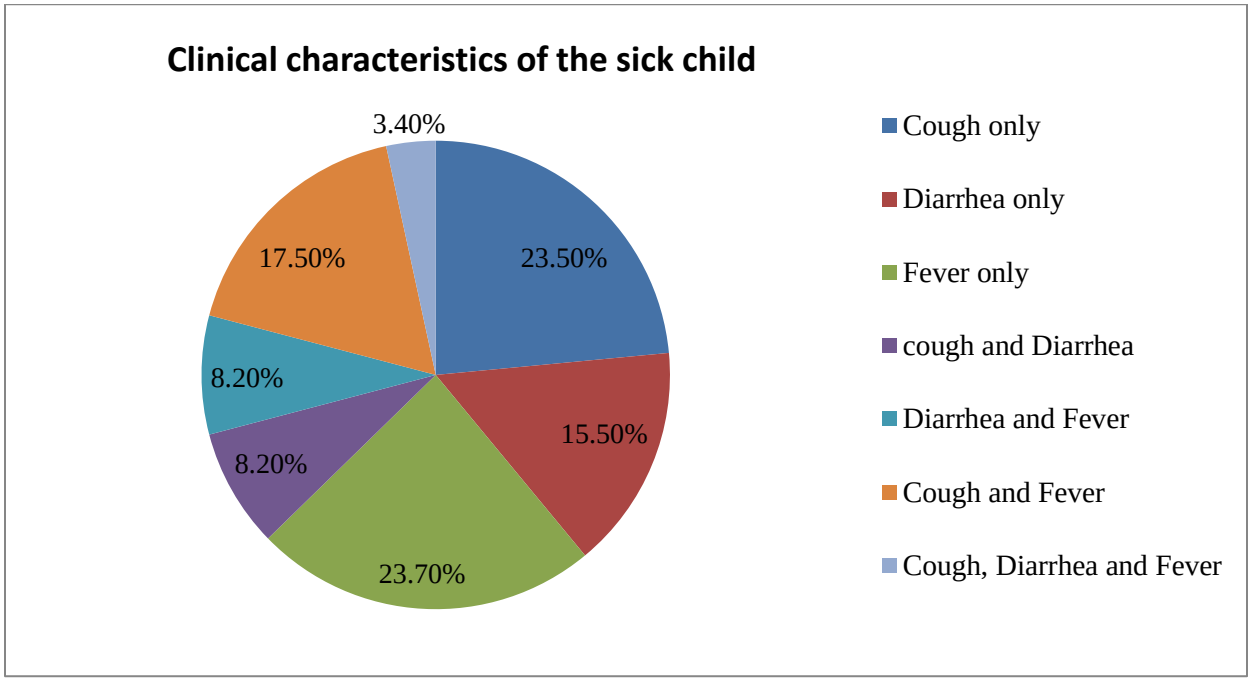

Figure 4: Clinical characteristics of sick under-five children between 2 and 58 months in Efratana Gidim district, east Amhara, Ethiopia, 2020 (n=159).

4.4.Healthcare Seeking Behavior

Overall 59.1%, (95% CI: 51.1%-66.8%) of respondents sought healthcare for their sick child. Out of 94 caregivers who have sick children and sought modern medical treatment the most 28.7% of respondent's primary preference were health institutions followed by traditional healers 17%, holy water 16%, religious institutions 13.8%, at home 12.8% and from pharmacy 11.7%.

For caregivers who preferred health facilities, health centers were the most chosen source of healthcare services where treatment was chosen by 50% of caregivers and the rest 35.1% sought treatment from health posts, 8.5% from the hospital, and 6.4% from a private clinic. The major reasons for treatment-seeking from health facilities were the child's condition worsened 51.1% followed by fear of complication 26.6%, people's advice 18.1%, and facility was nearly 4.3%.

Table 4: Caregivers healthcare seeking behavior for common childhood illnesses in Efratana Gidim district, east Amhara, Ethiopia, 2020.(n=159)

Variables	Category	Frequency(n)	Percent (%)
Did you sought treatment (n=159)	Yes	94	59.1
	No	65	40.9
Where did you first sought Treatment? (n=94)	Religious Institution	13	13.8
	Health institution	27	28.7
	Holy water place	15	16
	Traditional healer	16	17
	At home	12	12.8
	From pharmacy	11	11.7
What type health institution? (n=94)	Health post	33	35.1
	Health center	47	50
	Hospital	8	8.5
	Private clinic	6	6.4
Reason for seeking healthcare (n=94)	Child's condition worsened	48	51.1
	Other peoples advice	17	18.1
	Fear of complication	25	26.6
	Facility is near by	4	4.3
Time of healthcare seeking (n=94)	Hours	2	2.1
	Days	72	76.6
	Weeks	20	21.3

Ninety four of caregivers who sought treatment were asked for the time of healthcare-seeking after the onset of symptoms, the majority 72 (76.6%) of caregivers brought medical treatment within days of symptom recognition and 20 (21.3%) were sought treatment weeks after the onset of symptoms and very few caregivers 2 (2.1%) were sought treatment immediately within hours of symptom recognition.

As reported by participants the main reason for not seeking healthcare were identified and mentioned as treatment cost being expensive 19 (29.2%) followed by illness was not serious 16 (24.6%), lack of transportation 13 (20%), lack of money 11 (16.9%), and long-distance from health facility 6 (9.2%).

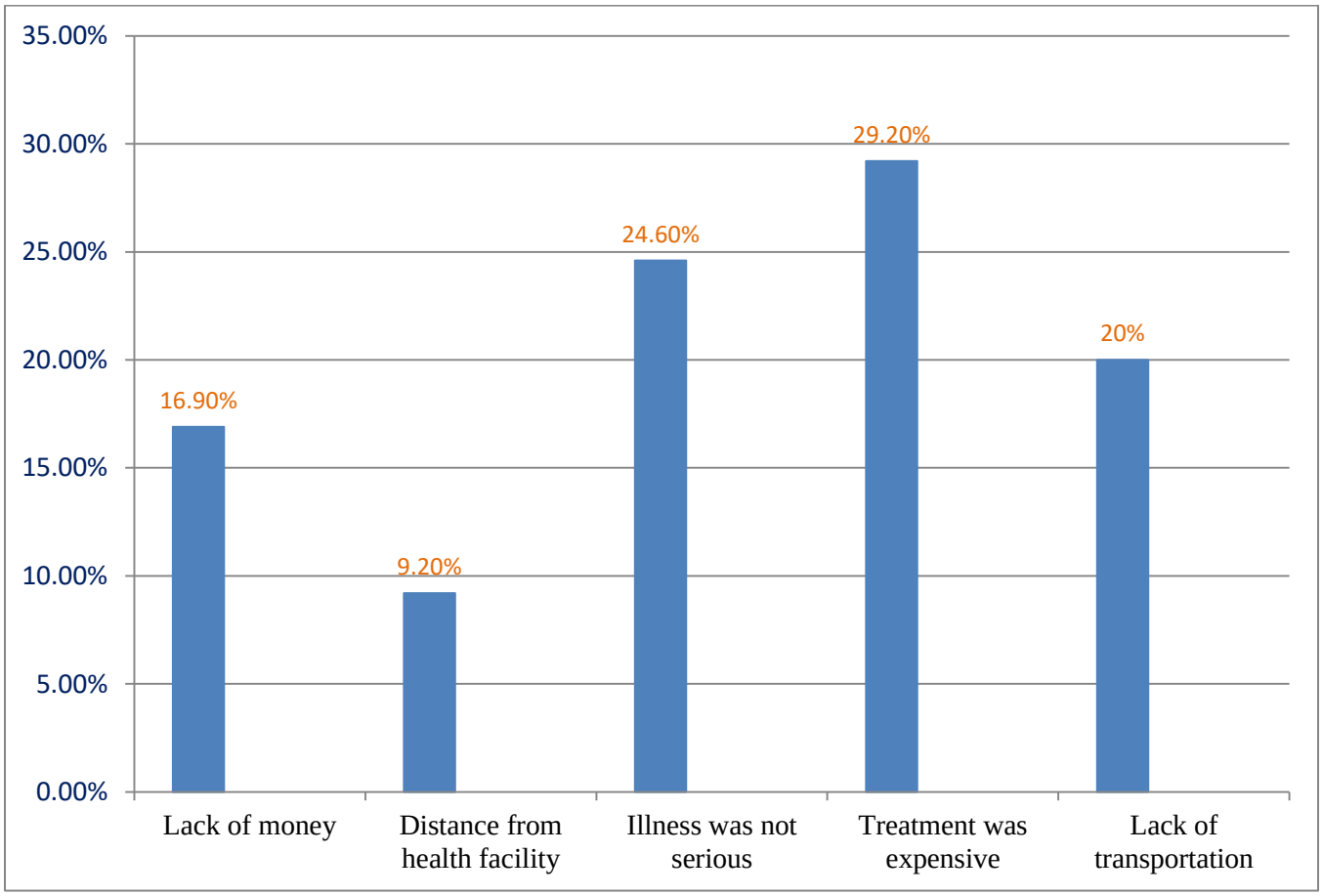

Figure 5: Reasons reported for not visiting health facilities for common childhood illnesses in Efratana Gidim woreda, east Amhara, Ethiopia, 2020. (n=65)

4.5.Factors affecting common childhood illnesses

In the bivariate analysis caregivers' level of education, religion, occupation, monthly income, residence of caregiver, number of under-five children, and child age were associated with common childhood illness.

However religion of caregiver, occupation, monthly income, and number of under-five children were not significantly associated with childhood illness by multivariable logistic regression analysis.

Meanwhile level of education (AOR=2.56:95%CI: 1.09, 5.99) and caregivers' residence (AOR=0.26: 95%CI: 0.09, 0.73) were determinant factors of common childhood illnesses at p value <0.05.

Table 5: Factors affecting childhood illness in Efratana Gidim district, Ethiopia, 2020 (n=661)

Variables	Childhood illness		COR (95%CI)	AOR (95% CI)
	Yes	No		
Educational Status				
Illiterate	93	263	1.06(0.57, 1.98)	0.96(0.34, 2.75)
Elementary	34	71	0.78(0.38, 1.57)	0.81(0.27, 2.48)
Secondary	16	125	2.74(1.27, 5.88)	**2.56(1.09, 5.99)***
Higher	16	43	1	1
Religion				
Orthodox	145	478	1.65(0.55, 4.90)	3.21(0.92, 11.24)
Muslim	9	14	0.78(0.19, 3.04)	0.67(0.15, 2.93)
Protestant	5	10	1	1
Occupation				
Housewife	125	348	0.58(0.22, 1.55)	0.82(0.26, 2.58)
Merchant	7	26	0.77(0.22, 2.77)	0.82(0.19, 3.45)
Government Employed	22	104	0.99(0.34, 2.87)	0.49(0.13, 1.83)
Others	5	24	1	1
Number of under-5 children				
1	98	321	0.95(0.65, 1.38)	8.02(0.70, 91.88)
2	58	180	0.11(0.01, 0.99)	8.30(0.72, 95.37)
3	3	1	1	1
Average monthly income				
<500	10	22	0.52(0.14, 1.94)	0.49(0.11, 2.41)
500-1000	106	279	0.62(0.21, 1.88)	0.79(0.19, 3.24)
1001-5000	39	184	1.11(0.35, 3.48)	1.21(0.35, 4.14)
>5000	4	17	1	1
Residence				
Urban	33	181	2.06(1.35, 3.15)	**0.26(0.09, 0.73)****
Rural	122	321	1	1
Child Age				
2-12 Months	61	142	0.61(0.34, 1.09)	0.86(0.44, 1.65)
13-24 Months	20	68	0.89(0.44, 1.81)	1.13(0.52, 2.45)
25-36 Months	58	216	0.98(0.55, 1.74)	1.23(0.65, 2.33)
37-59 Months	20	76	1	1

significant at (P<0.05), *significant at (P<0.01), ***significant (P<0.001)

4.6.Determinant factors associated with healthcare-seeking behavior

The result of bivariate analysis revealed that educational status of caregiver, caregivers occupation, number of under-five children, monthly income, distance to the health facility, household residence, child age, a caregiver who had an experience of child death before, presence of diarrheal symptoms, presence of cough, diarrhea, and fever together and accesses of transportation were significantly associated with healthcare-seeking behavior and were a candidate for multivariable logistic regression, whereas the age of caregiver, marital status, household size, caregivers religion, sex of caregiver, presence of cough symptom, child sex and perceived severity of childhood illness by caregivers were not significant at p-value <0.25.

Moreover, the result of multivariable logistic regression analysis showed that experience of child death before [AOR=3.766; 95%CI: 1.726, 8.873], presence of diarrheal symptom [AOR=3.914; 95%CI: 2.043, 10.828] and accesses to transportation [AOR=3.352; 95%CI: 1.049, 10.710**]** were independent predictors of healthcare-seeking behavior of caregivers for common childhood illnesses. However, caregivers level of education, caregivers occupation, household monthly income, distance from a health facility, place of residence, number of under-five children, child age and presence of cough, diarrhea and fever symptoms together were not significantly associated with healthcare-seeking behavior of caregivers for common childhood illnesses in the multivariable analysis at p-value <0.05.

Table 6: Factors associated with healthcare seeking behavior in Efratana Gidim woreda, east Amhara, Ethiopia, 2020. (n=159)

Variables	Healthcare seeking		COR (95%CI)	AOR (95% CI)
	Yes	No		
Educational Status				
Illiterate	48	44	1.058(0.481, 2.328)	1.136(0.440, 2.936)
Elementary	18	16	0.159(0.034, 0.734)	0.218(0.024, 1.936)
Secondary	15	2	0.275(0.073, 1.029)	0.233(0.018, 3.046)
Higher	13	3	1	1
Occupation				
Housewife	70	55	0.636(0.182, 2.224)	0.626(0.112, 3.506)
Merchant	6	6	0.283(0.090, 0.884)	0.452(0.045, 4.502)
Government Employed	18	4	1	1
Number of under-5 children				
1	53	45	0.576(0.290, 1.141)	0.439(0.177, 1.084)
2	40	18	2.558(0.224, 29.156)	2.934(0.155, 55.627)
3	1	2	1	1
Average monthly income				
<500	7	3	2.006(0.492, 8.178)	1.909(0.345, 10.561)
500-1000	55	51	0.805(0.174, 3.722)	0.681(0.077, 6.034)
1001-5000	29	10	0.778(0.056, 10.861)	3.398(0.102, 113.41)
>5000	3	1	1	1
Distance				
< 5 km	74	44	1.90(0.926, 3.90)	1.084(0.441, 2.663)
> 5 km	20	21	1	1
Residence				
Urban	26	7	2.971(1.201, 7.349)	0.175(0.009, 3.441)
Rural	68	58	1	1
Child Age				
2-12 Months	36	25	0.830(0.290, 2.379)	1.087(0.281, 4.212)
13-24 Months	13	7	0.811(0.385, 1.711)	0.932(0.377, 2.305)
25-36 Months	38	20	2.312(0.824, 6.488)	3.624(0.994, 13.209)
37-59 Months	7	13	1	1

Experience of child death				
Yes	30	5	5.625(2.048, 15.446)	**3.766(1.726, 8.873)***
No	64	60	1	1
Diarrhea				
Yes	53	19	3.130(1.598, 6.130)	**3.914(2.04, 10.83)*** **
No	41	46	1	1
Cough, Diarrhea and Fever				
Yes	13	3	3.133(0.855, 11.478)	1.396(0.233, 8.343)
No	81	62	1	1
Access of Transportation				
Yes	41	9	4.813(2.134, 10.857)	**3.352(1.049, 10.710)***
No	53	56	1	1

significant at (P<0.05), *significant at (P<0.01), ***significant at (P<0.001)

5. Discussion

In this study, the overall prevalence of common childhood illness of under-five children between 2 and 59 months was 24.1%, (95% CI: 21.1%-27.3%). Of these 16.9% were fever, 16.8% were cough and 11% were diarrhea. Which was high compared with the national figure EDHS 2016 report (5). However, this finding is lower than studies conducted at Addis Ababa Ethiopia, Tanzania, and India(9,11,34,62). The discrepancy might be due to the difference in the socio-demographic characteristics, the time of the study, and methods of data collection. For example, a study conducted in Addis Ababa Ethiopia was a facility-based study done in 2016 and the study populations were caregivers with sick under-five children only which might increase the prevalence proportional to all sick child and another study done at Tanzania were conducted at the most rural districts with a high burden of common childhood illness as well as poor access and utilization of healthcare services which have a potential to increase the prevalence of common childhood illness.

Similarly, the two weeks period prevalence of common childhood illnesses was low compared with studies conducted in different parts of the Amhara region(37–39). The difference in such prevalence could be due to the study period, sample size, and was primarily focused on diarrheal illnesses. For instance, a study conducted in Farta district North West Ethiopia was conducted in 2014 and focused mainly on diarrhea and it was done with respondents from only rural kebeles of the district where a child can acquire any illness due to poor access to basic healthcare services like immunization might contribute to high prevalence.

Further caregivers' level of education and caregivers' residence were significant factors of common childhood illnesses.

Caregivers' level of education was significantly associated with childhood illness after controlling other socio-demographic and enabling factors. In such a caregiver with secondary education were 2.5 times more likely to have a child with childhood illness compared with higher educated caregiver. This finding is supported by previous studies done at Jimma, Ensaro, and EDHS 2016 analysis(27,48,52). This might be due to the fact that more educated caregivers' could have knowledge and adequate information about prevention mechanism of childhood illness and can easily comprehend with health messages.

Occurrences of childhood illness were decreased by 74% among urban caregivers' compared with rural caregivers. This finding was consistent with other study findings(29,38). This might be due to the difference with socio-economic status and infrastructures like access to water supply and provision of latrine facility.

The current study revealed that the healthcare-seeking behavior of caregiver for common childhood illness was 59.1%, (95% CI: 51.1%-66.8%). Of 159 children with one or more symptoms, their respective caregivers sought treatment for 53(73.6%) of diarrhea, 68(61.8%) of fever, and 63(57.8%) of cough. Which is in agreement with a study conducted at Ensaro District North Shoa 59.9%, Kenya Nairobi slums 60.5% and Rwanda 58.6% (9,27,43). However, it is higher than the EDHS 2016 report and studies conducted in Addis Ababa and northwest Ethiopia (5,11,12). This might result from differences in study setting, differences in the study period, and sample size. The study of Northwest Ethiopia particularly in the Aneded district was conducted in 2016 and only rural mothers participated for the interview, which could reduce their healthcare-seeking behavior due to poor awareness, distance, and poor access to the health facilities.

In contrast, this finding is lower than previous similar studies conducted in different regions of Ethiopia (15,30,36,50). The possible explanations for this might be due to some of the above studies were done in urban settings which can have access to healthcare and quality of services near to their household and in the other way, most of the study was primarily focused on diarrheal disease which could be perceived by caregivers' as more sever and they might seek treatment better for their sick child.

The current study also identified main reasons reported by caregivers' for not seeking treatment from health facilities and the major reasons were caregivers' perception that the illnesses were not serious (24.6%), expensiveness of treatment (29.2%), and lack of transportation (20%). These might be due to rural caregivers' limited awareness to recognize illness severity and when to seek treatment in addition to limited resources and poor economic status.

Findings from multivariate logistic regression analysis showed that experience of child death before, presence of diarrheal symptoms, and access to transportation were independent predictors of healthcare-seeking behavior of caregivers for common childhood illnesses.

The caregiver's previous experience of child death was a strong predictor of healthcare service utilization. The healthcare-seeking behavior of caregivers with experience of child death before was nearly four times the odds to utilize healthcare services than their counterparts. This finding was in line with a study finding from Addis Ababa, southwest Ethiopia, and Nigeria(11,54,55). This might be due to the fact that previous bad experience of child death might motivate caregivers to recognize danger signs and symptoms of an ill child that is necessary to take immediate action and appropriate management for disease conditions, which can also reduce complication and deaths. On the other way, a caregiver with experience of child death before could be more sensitive to save the life of the rest live children.

Treatment was sought better for children with diarrhea as compared to cough and fever. The sick under-five children with symptoms of diarrhea were four times the odds to utilize healthcare than symptoms of cough and fever. This finding was comparable with the finding reported from different studies(13,30,50). This could be due to the fact that rural caregivers might consider diarrheal illnesses as more severe than symptoms of cough and fever since diarrhea is more visible for caregivers than cough or fever. On the other hand, it could be due to the fact that the availability of effective treatment that can be safely administered at home and provision of information to the rural community about the treatment services.

Moreover, the odds of healthcare-seeking behavior of caregiver having access to transportation were nearly three times more utilized healthcare services compared with caregivers who did not have any transport access. This might be justified by children living in the most rural communities far from health institutions without access to transportation were denied of access to treatment services for common childhood illnesses which could lead to increased occurrence of childhood morbidity and mortality. In the other hand caregiver who has access to transportation might have better socioeconomic status and good attitude to seek modern treatment for their sick under-five children and can better comprehend to health messages and choose cost-effective interventions.

With the current study, it was noted that factors like age of caregiver, marital status, occupation, level of education, religion, age and sex of the sick child, household income, residence, distance from the health facility and perceived severity of illness, did not show significant association with healthcare-seeking behavior. The reason for this might be due to the fact that most of the

respondents were housewives and married, had no formal education and most of caregivers sought treatment from health facilities when the diseases get worsened.

Strengths and limitations of the study

Strength: Being a community-based study and minimal none response rate.

Limitation

Measurement of common childhood illness was not validated clinically since it was taken only by caregivers' perception of common childhood illness. Since the data was collected based on self-report of caregivers' healthcare-seeking, thus might be susceptible to recall, reporting, and social desirability bias. Finally, hence a cross-sectional study design was used the association might not imply temporal relationship.

6. Conclusions and Recommendations

6.1.Conclusions

In conclusion, the two weeks prevalence of common childhood illness was high compared with the national figure EDHS 2016 report(5) and, treatment-seeking behavior of caregivers' for common childhood illness was low compared with some studies conducted in the Amhara region(16,58).

Most caregivers sought treatment from health facilities after worsening of common childhood illness manifestations. Furthermore, caregivers' level of education and residence were significant factors for common childhood illness and experience of child death before, symptoms of diarrhea, and access to transportation were independent predictors of healthcare-seeking behavior of caregivers' for common childhood illnesses.

6.2.Recommendations

Based on findings from the current study I would like to suggest the following,

Efratana Gidim District health office; to enhance the provision of basic preventive measures like immunization and repeated health education about proper housing, hygiene, and sanitation which helps to reduce child morbidity and mortality and to improve the health status of under-five children.

The office should also strengthen infrastructures for transport access and health facility for the most neglected rural population.

Healthcare professionals: should provide health education to enhance caregivers' awareness about childhood illnesses and to promote healthcare-seeking practices of caregivers by using IEC/BCC materials.

7. References

1. Children: reducing mortality [Internet]. [cited 2019 Nov 10]. Available from: https://www.who.int/en/news-room/fact-sheets/detail/children-reducing-mortality

2. United Nations Inter-agency Group for Child Mortality Estimation (UN IGME). 'Level &Trends in Child Mortality : Report 2018. 2018;6–9. Available from: https://data.unicef.org/wp-content/uploads/2018/09/UN-IGME-Child-Mortality-Report-2018.pdf

3. Chao F, You E. National and regional under-5 mortality rate by economic status: a systematic assessment. Lancet Glob Heal [Internet]. 2018;6(5):e535–47. Available from: http://dx.doi.org/10.1016/S2214-109X(18)30059-7

4. Institute E public health, ICF. Mini Demographic and Health Survey: key indictors [Internet]. Handbook of Federal Countries, 2005. 2019. 136–148 p. Available from: www.DHSprogram.com.

5. Survey H. Ethiopia. Rockville, editor. Maryland, USA. CSA and ICF 2016; 2016.

6. Oluwole D, Mason E, Costello A. Management of childhood illness in Africa. Br Med J. 2000;320(7235):594–5.

7. Johnson HL, Liu L, Fischer-Walker C, Black RE. Estimating the distribution of causes of death among children age 1-59 months in highmortality countries with incomplete death certification. Int J Epidemiol. 2010;39(4):1103–14.

8. Adedire Elizabeth A etal. Maternal Perception and HealthCare-Seeking behaviors for Childhood Febrile Illnesses in Rural Communities of Osun State, Nigeria. Sci J Public Heal. 2015;2(6):636.

9. Taffa, Chepngeno G etal. Determinants of healthcare seeking for childhood illnesses in Nairobi. Trop Med Int Heal. 2005;10(3):240–5.

10. Estimation CM. levels and trends in Child Mortality 2017. WHO. 2017;15–6.

11. Abegaz NT. Caregivers healthcare seeking behavior towards childhood illness in selected

health centers in Addis Ababa, Ethiopia: BMC Pediatr. 2019;19(1):1–9.

12. Simieneh MM, Mengistu MY, Gelagay AA, Gebeyehu MT. Mothers' health care seeking behavior and associated factors for common childhood illnesses, Northwest Ethiopia: Community based cross-sectional study. BMC Health Serv Res. 2019;19(1):1–7.

13. Alene M, Yismaw E. Healthcare utilization for common childhood illnesses in rural parts of Ethiopia: Evidence from the 2016 EDHS. BMC Public Health. 2019;19(1):1–12.

14. Shaikh BT, Etal. Healthcare seeking behaviour and health service utilization in Pakistan: J Public Health (Bangkok). 2005;27(1):49–54.

15. Kolola T, Gezahegn T, Addisie M. Health care seeking behavior for common childhood illnesses in jeldu district, oromia regional state, Ethiopia. PLoS One. 2016;11(10):1–11.

16. Dagnew AB, Tewabe T, Murugan R. Level of modern health care seeking behaviors among mothers having under five children in Dangila town , north West Ethiopia , 2016 : a cross sectional study. 2018;1–6.

17. Jordan HT, Prapasiri P, Areerat P, Anand S, Clague B, Sutthirattana S, et al. A comparison of population-based pneumonia surveillance and health-seeking behavior in two provinces in rural Thailand. Int J Infect Dis. 2009;13(3):355–61.

18. Patra S, Perianayagam A, Goli S. Mother ' s health knowledge and practice and their linkage with childhood morbidity , medical care in India. 27th IUSSP Int Popul Conf 26-31 August, 2013, Busan, South Korea. 2013;164322:0–22.

19. WHO. WORLD HEALTH MONITORING FOR THE SDGs. World Heal Organ. 2016;1:1.121.

20. Unicef WHO. WHO / UNICEF JOINT STATEMENT Integrated Community Case Management An equity-focused strategy to improve access to essential treatment services for children. (iCCM).

21. Development WHOD of C and AH and. IMCI information : information sheets on Integrated Management of Childhood Illness. Geneva World Heal Organ [Internet].

1999;(Imci):1–6. Available from: http://apps.who.int/iris/handle/10665/65002

22. Victora CG, Bryce J, Fontaine O, Monasch R. Reducing deaths from diarrhoea through oral rehydration therapy. Bull World Health Organ. 2000;78(10):1246–55.

23. Harrison K. Killer children. 2008.

24. Noordam A c. HealthCare Seeking Behaviour for Children with Pneumonia in Sub-Saharan Countries with High Pneumonia Mortality. PLoS ONE 10(2). 2015;1–14.

25. Centers C, Khalil MM, Malik EM, Mohamed N, Alnair A, Ismail I, et al. Factors Affecting Health Seeking Behaviors Among Mothers of Under Five Children Attending Primary Health. 2019;7(6):181–6.

26. Kebede ZT. High common childhood illnesses while treatment-seeking behavior of care givers' was low. Res Sq. 2019;1–22.

27. Sisay S, Endalew G, Hadgu G. Assessment of HealthCare Seeking Behavior for Childhood Illness in Rural Ensaro District, Ethiopia 2014. Res gate. 2017;(May 2016).

28. Status C. High common childhood illnesses while treatment seeking behavior of mothers '/ care givers ' was low at rural northwest Ethiopia. :1–28.

29. Tsion, Assefa T, Etal B. Assefa T,Belachew T. et al.caregivers' HealthCare Seeking Behavior for common Childhood Illnesses in Derra District, Ethiopia. Ethiop J Heal Sci;2008; 2008;18(3):(6):87–94.

30. Worku A. Prevalence of common childhood illness and caregivers ' healthcare seeking behavior in Bahir Dar , Ethiopia: J Prev Med. 2013;3(2):155–9.

31. Ethiopian Federal Ministry of Health. Health Sector Transformation Plan (2015/16-2019/20). 2015;20(May):1–118.

32. Miller NP, Etal. ICCM of common childhood illness in Ethiopia: Implementation strength and quality of care. Am J Trop Med. 2014;91(2):424–34.

33. Thiam S, D. Prevalence of diarrhoea and risk factors among under five children in Mbour,

Senegal: Infect Dis Poverty. 2017;1–12.

34. Kanté AM eatal. Prevalence of common childhood Illness and Healthcare Seeking Behavior of caregivers' in Rural Tanzania. BMC Public Health [Internet]. 2015;15:951:1–12. Available from: http://dx.doi.org/10.1186/s12889-015-2264-6

35. State CR, Ekpo O. Careseeking for childhood diarrhoea at the primary level of care in communities in. J Epidemiol Glob Health [Internet]. 2017;6(4):303–13. Available from: http://dx.doi.org/10.1016/j.jegh.2016.08.002

36. Fissehaye T, Etal D. Healthcare seeking behaviour of caregivers towards diarrheal disease of under-five children in Mekelle city, Ethiopia. BMC Res Notes [Internet]. 2018;11:749:1–7. Available from: https://doi.org/10.1186/s13104-018-3850-3

37. Azage M, K. Childhood diarrheal disease in high and low hotspot districts of Amhara Region, Ethiopia. J Heal Popul Nutr [Internet]. 2016;35:13:1–14. Available from: http://dx.doi.org/10.1186/s41043-016-0052-2

38. G.etal G. Magnitude and Associated Factors of Diarrheal disease among Children below five years in Farta District, Ethiopia. Qual Prim Care. 2017;25 (4)(January):199–207.

39. Gedefaw M, Moges.etal. Diarrheal Diseases and determinant factors in the Rural Dejen District, Ethiopia, 2014. Am Sci Res J. 2015;5: 1,(January 2014):1-13 [3].

40. Beer N, Ali AS, Eskilsson H, Jansson A, Abdul-Kadir FM, Rotllant-Estelrich G, et al. A qualitative study on caretakers' perceived need of bed-nets after reduced malaria transmission in Zanzibar, Tanzania. BMC Public Health [Internet]. 2012;12(1):1. Available from: ???

41. Patil S, Parbhankar S, Bansode-Gokhe S, Shelke P, Singh R. Study of health seeking behavior and its determinants among attendees of urban health center, Dharavi, Mumbai, India. Int J Community Med Public Heal. 2016;3(7):1856–61.

42. Leonard KL, Masatu MC. Variations in the quality of care accessible to rural communities in Tanzania. Health Aff. 2007;26(3):380–92.

43. Sciences H. Healthcare seeking behavior of caregivers for sever respiratory infections,. 2017;

44. Bocquenet G, Chaiban T, Cook S, Escudero P, Franco A, Romo CG, et al. A fair chance for every child. 2016.

45. Liu L. Global, regional, and national causes of under-5 mortality in 2000–15: Lancet [Internet]. 2016;388(10063):3027–35. Available from: http://dx.doi.org/10.1016/S0140-6736(16)31593-8

46. Azage M, Haile D. Factors affecting healthcare service utilization of mothers who had children with diarrhea in Ethiopia : evidence from a population based national survey. 2015;(January 2016).

47. Woldemariam YT. Utilization of integrated community case management services in three regions in Ethiopia after two years of implementation UTILIZATION OF INTEGRATED COMMUNITY CASE MANAGEMENT SERVICES. 2015;(November).

48. Etal TM. Factors determining under-five children with symptoms of acute respiratory tract infection in Ethiopia: based on the 2016 DHS. 2018;

49. Astale T, Chenault M. Help-Seeking Behavior for Children with Acute Respiratory Infection in Ethiopia : Results from 2011 Ethiopia Demographic and Health Survey. 2015;1–10.

50. Demissie B, Demeke HZ, International P, Sagaro G, Haidar J. The Ethiopian Of Health Development Joint Scholarly Publication of the Ethiopian Public Health Association and the School of. 2014;(January).

51. Gerald M, C.etal. Acceptability and Utilization of Community Health Workers after the Adoption of the ICCM in Kabarole District, Uganda. Malar Control Elimin. 2015;05(01):1–6.

52. Shaw B, Amouzou A, P M. Determinants of Utilization of Health Extension Workers in the Context of Scale-Up of ICCM of Childhood Illnesses in Ethiopia,. Am Soc Trop Med. 2015;93(3):636–47.

53. Ferrer BE. ICCM and community based health services: effectiveness of the nationaL implementation. Malar J. 2016;1–15.

54. Abdulraheem I eta. Determinant factors for caregivers' treatment-seeking behaviour for childhood illnesses in a rural Nigerian. Early Child Dev Care. 2009;179(5):671–83.

55. Getahun A, D. Determinant factors of delay in malaria healthcareabd-seeking practice for children below five years in south-west Ethiopia: Malar J. 2010;9(1):1–6.

56. Cohen A. HealthCare Organization, Provision, and Financing Perspectives on Health Reform and Its Implementation. 2012;38(Spring):21–38.

57. CSA. 2007 Population and Housing Census of adminstrative,. 2012;(April):125.

58. Gelaw YA. Effect of residence on caregivers healthcare-seeking practice for childhood illness in Northwest Ethiopia: BMC Res Notes. 2014;7(1):1–8.

59. Friedman L, Wolfeim C. Review of Integrated Community Case Management Training and Supervision Materials in Ten African Countries. 2013;(November):63. Available from: http://www.mchip.net/node/2809

60. Kotloff KL. The Burden and Etiology of Diarrheal Illness in Developing Countries. Pediatr Clin North Am [Internet]. 2017;64(4):799–814. Available from: http://dx.doi.org/10.1016/j.pcl.2017.03.006

61. Agabi CO, Ogah JI. Education and Human Resource Planning In Nigeria: The Case of National Manpower Board (NMB). Int J Sci Res Educ. 2010;3(December):152–65.

62. Yamuna B. Prevalence of acute morbidities and health seeking behaviour among under-five children of urban slums in Karnataka. 2017;4(7):2449–56.

63. Gelaw YA, Biks GA, Alene KA. Effect of residence on mothers ' health care seeking behavior for common childhood illness in Northwest Ethiopia : a community based comparative cross – sectional study. 2014;1–8.

8. Appendices

Annex I: Information sheet and Informed consent statements

Information sheet

Hello! Sir/Madam my name is _____and I am data collector for this study. We are conducting a study on the magnitude of healthcare-seeking behavior, common childhood illnesses and factors associated with healthcare-seeking behavior. The aim of this study is to collect information about the healthcare-seeking behavior of caregivers' for common childhood illnesses and factors affecting it, in addition to fulfilling thesis work for graduation. The results of this study will be helpful for the planners to plan appropriate intervention and to improve child health in this area.

Informed consent

I am going to ask you questions using a questionnaire about your child illnesses within the past two weeks and your healthcare-seeking behavior. You are randomly selected to participate in this study. Your participation in this study doesn't involve any direct risk or benefit for you but is very useful to improve child health in this area. Your name does not appear on this questionnaire, and all the information you provide me will be strictly confidential. It takes 20 minutes to finish the interview and you are not obliged to answer any question that you don't wish to answer, and you can end this interview at any time if you wish to do so. Would you like to participate in this study? Yes_____ No_____

Note, if the answer is "Yes" please sign below to certify the client gave her/his oral consent to take part voluntarily in the study. Otherwise, thank the client and conclude the conversation.

Signature_____ Kebele: _____

Date _____ Identification No._____

Contact address of principal investigator: - Mobile: +251 943862546

E-mail: genanaw21kassaye@gmail.com

Annex II English version questionnaire

Section I Socio-demographic characteristics of the sick child and caregivers

S.no	Questions(Variable description)	Responses	Code	Skip
101	Age	------Years		
102	Sex	1. Female 2. Male		
103	Marital status	1. Married 2. Widowed 3. Divorced 4. Single		
104	Could you read and write? If so attained level of education?	-------Grade -------Informal		
105	Religion	1.Orthodox 2.Muslim 3.Protestant 4.Other		
106	Occupation	1.Housewife 2.Merchant 3.Farmer 4. Daily laborer 5.Government employed 6. Other		
107	Family size	--------Persons		
108	Number of under-five children	--------Children		
109	Average level of income	---------Birr		
110	Distance to health facility	----------KM		
111	Place of Residence	1. Urban 2. Rural		
112	What is the sex of your child?	1. Female 2. Male		

113	What is the age of your child?	--------Months		
114	Did your child have any illness in the past two weeks?	1. Yes 2. No		**If your answer is No go to question 128**
115	Did your child had a cough in the last two weeks?	1. Yes 2. No		
116	Did your child had diarrhea in the last 2 weeks?	1. Yes 2. No		
117	Did your child have fever at any time in the last 2 weeks?	1. Yes 2. No		
118	Did your child have a cough, diarrhea, and fever or both in the last 2 weeks?	1. Yes 2. No		
119	Was the disease severe?	1. Yes 2. No		
120	Do you have experience of child death before	1. Yes 2. No		

Section II: Information about healthcare-seeking behavior of caretaker for a sick child.

s.no	**Questions**	**Responses**	**Code**	**Skip**
121	Did you seek any advice or treatment for your sick child?	1. Yes 2. No, →		**If your answer is No go to question 126**
122	Where did you seek advice or treatment? (circle all the apply)	1. Religious area 2. Health institution 3. Holy water place 4. Traditional healer 5. At home 6.purchasing from pharmacy		
123	Where did you first	1. Religious area		

	seek advice or Treatment?	2. Health institution 3. Holy water place 4. Traditional healer 5. At home 6. From pharmacy		
124	If your answer for Q122 is health institution which types	1. Health post 2. Health center 3. Hospital 4. Private clinic		
125	Main reason for visiting Health Facility? (Multiple answers)	1. Child's condition worsened 2. Other peoples' advise 3. Fear of Death 4. The facility was nearby 5. Other		
126	Time of healthcare-seeking after the onset of illness?	1. Hours 2. Days 3. Weeks 4. Months		
127	Reason for not Visiting health facility? (Multiple answers)	1. Lack of money 2. The illness was not serious 3. Treatment was expensive 4. Lack of transportation 5. Long-distance from Health facility		
128	Did you get access to transportation vehicles when your child is sick?	1. Always 2. Yes 3. Sometimes		

		4. No		
129	What type of transportation vehicles was available when your child was sick? (Multiple answers)	1. Ambulance 2. Public transport 3. Manpower 4. Other, specify		

Annex III Amharic version Information sheet and Informed consent statements

በአማረኛ የተዘጋጀ የማስገንዘቢያ ቅጽ እና ፍቃደኝነትን የመግለጽ ዉል

የማስገንዘቢያ ቅጽ

ሰላም ጤና ይስጥልኝ፡ ስሜ_____ይባላል፡ ለዚህ ጥናት መረጃ ሰብሳቢ ነኝ፡፡በልጅ አሳዳጊዋች ጤና አገልግሎት አጠቃቀም ባህሪ እና ተያያዥ ችግሮች ዙሪያ ጥናት እያካሄድን እንገኛለን፡፡ አላማዉ የሁለተኛ ድግሪ ትምህርት መመረቂያ ጽኑፍ ለማዘጋጀት : በእናቶች ጤና አገልግሎት አጠቃቀም ባህሪ ዙሪያ መረጃ ለመሰብሰብ እንዲሁም ችግሮችን መለየት ይሆናል፡፡ ዉጤቱም ለእቅድ አዉጭዋች ተገቢ መፍትሄ እንዲያዘጋጁ እና የህጻናትን ጤና እንዲያቸሻሽሉ ይረዳቸዋል፡፡

ፍቃደኝነትን የመግለጽ ዉል

እኔ መጠይቅ በመጠቀም ባለፉት ሁለት ሳምንታት ልጅህ/ሽ ስላጋጠመዉ የጤና ችግር እና ስለተደረገለት ህክምናና እንክብካቤ ጥያቄወችን እጠይቃለሁ፡፡ ለጥያቄዉ ትክክለኛ መልስ የምትይዉን ትነግሪኛለሽ፡፡ በዚህ ጥናት ውስጥ በመሳተፍሽ/ህ የምታገኝዉ የተለየ ጥቅም ወይም ጉዳት አይኖርም፡፡ ሆኖም ግን የጥናቱ ዉጤት በዚህ አካባቢ ያሉ ህጻናትን ጤና ለማሻሻል አስተዋጾ ያደርጋል፡፡ስምሽ/ህ በዚህ መጠይቅ ላይ አይመዘገብም፡ሁሉም የምትነግሪኝ/ረ መረጃዎች ምሰጢር በአግባቡ ይጠበቃል። ቃለ መጠይቁ ቢበዛ እሰከ 20 ደቂቃ ሊፈጅ ይችላል፡ ሆኖም መመለስ የማትፈልጊዉ/ገ ጥያቄ ካለ እንድትመልሽ/ስ አትገደጅም/ድ፡ መጠየቁንም ካልተመቸሽ/ጎ በማንኛዉም ጊዜ ማቋረጥ ትችያለሽ/ላለህ፡ በቃለ መጠይቁ ለመሳተፍ ፈቃደኛ ከሆንሽ/ህ መጀመር እንችላለን? አዎ---------- በፍፁም----------

ማስታወሻ፡ መልሳቸዉ አዎ ከሆነ እባክዋ ስምምነት መስጠታቸዉን ለማረጋገጥ ከታች በፊርማ ያረጋግጡ፡ ካልሆነ ግን በማመስገን ደንበኛዉን ያሰናብቱ፡፡

የቃለ መጠይቅ ቁጥር: _____ ቀበሌ: _____

መረጃዉ የተሰበሰበበት ቀን:_____/_____/_____ የመረጃ ሰብሳቢዉ ስም: _____

ስለትብብርዋ አናመሰግናለን!

Annex IV Amharic version questionnaire

በአማረኛ የተዘጋጀ የመጠይቅ ፎርም

ክፍል አንድ: የልጆች እና ተንከባካቢዎች ማህበራዊ ሁኔታ

ቁጥር	ጥያቄ	ምላሽ	ኮድ	ማለፍ
101	ዕድሜ (በዓመት)	_____አመት		
102	ጾታ	1. ሴት 2. ወንድ		
103	የትዳር ሁኔታ	1.ያገባ/ች 2. ባል የሞተባት 3. የፈታ/ች 4. ያላገባ/ች		
104	ማንበብና መፃፍ ትችላለህ/ያለሽ፣ ከሆነ የትምህርት ደረጃ?	_____ክፍል _____ኢ-መደበኛ		
105	ሀይማኖት	1. ኦርቶዶክስ ተዋህዶ 2.ሙስሊም 3.ፕሮቴሳታንት 4. ሌላ (ይጠቀስ)		
106	ስራ	1 የቤት እመቤት 2 ነጋዴ 3.አርሶ አደር 4.የቀን ሰራተኛ 5.የመንግስት ሰራተኛ 6. ሌላ (ይጠቀስ)		
107	የቤተሰብ አባላት ስንት ናቸዉ	_____ በቁጥር		
108	ከአምስት አመት በታች ያሉ ህጻናት ብዛት	_____ በቁጥር		
109	የቤተሰቡ አማካኝ የገቢ መጠን	----------ብር		
110	ከመኖሪያ ሰፈር ለጤና ተቋም ያለው እርቀት	---------- ኪ.ሜ		
111	የመኖሪያ አካባቢ	ı. ከተማ 2. ገጠር		

112	የመጨረሻው ልጅ ጾታ?	1. ሴት 2. ወንድ		
113	የመጨረሻው ልጅ ዕድሜ ስንት ነዉ (በወራት)	----------ወር		
114	ባለፈው ሁለት ሳምንት ልጅህ/ሽ ህመም ነበረው	ነ. አወ 2. በፍጹም		
115	ባለፈዉ ሁለት ሳምንት ልጅህ/ሽ ያስለዉ/የአተነፋፈስ መቆራረጥ ነበረው	ነ. አወ፡ 2. በፍጹም		
116	ባለፈዉ ሁለት ሳምንት ልጅህ/ሽ ተቅማጥ ወይም ደም የቀላቀለ ሰገራ ነበረው;	ነ. አወ፡ 2. በፍጹም		
117	ባለፈዉ ሁለት ሳምንት ልጅህ/ሽ ትኩሳት እና ተያያዥ ህመም ነበረው;	ነ. አወ፡ 2. በፍጹም		
118	ባለፈዉ ሁለት ሳምንት ልጅህ/ሽ ሳል፡ትኩሳት እና ተቅማጥ በአንድ ላይ ነበረው;	ነ. አወ፡ 2. በፍጹም		
119	በአንተ/ች እይታ ህመሙ የከፋ ነበር;	ነ. አወ 2. በፍጹም		
120	ከዚህ በፊት ልጅ ሞቶብዋት ያዉቃል	ነ. አወ 2. በፍጹም		

ክፍል ሁለት፡ ለልጆች ህክምና ፍላጎት እና አጠቃቀም

ቁጥር	**ጥያቄ**	**ምላሽ**	**ኮድ**	**ማለፍ**
121	ባለፈዉ ሁለት ሳምንት ለታመመው ልጅህ/ሽ ምክር ወይም ህክምና አግኝተኃል/ሻል;	1.አወ 1. በፍጹም		**ወደ ጥያቄ ቁጥር 26 ይለፉ**
122	ለጥያቄ ቁ. 120 መልስዋ አዎ ከሆነ ከየትኛው ተቆም (ከአንድ በላይ መልስ ይቻላል)	1. ከሃይማኖት ተቆም 2. ከሃኪም ቤት 3. ከጸበል 4. ከባህላዊ ህክምና 5. በቤት ህክምና 6. ከግል መድሃኒት ቤት		
123	በመጀመሪያ ከየትኛው ተቆም አገልግሎት አገኙ;	1. ከሃይማኖት ተቆም 2. ከሃኪም ቤት 3. ከጸበል 4. ከባህላዊ ህክምና 5. በቤት ህክምና		

		6. ከግል መድሃኒት ቤት		
124	ለጥያቄ ቁጥር 122 መልስዋ ከሃኪም ቤት ከሆነ ከየትኛው	1. ከጤና ኬላ 2. ከጤና ጣቢያ 3. ከሆስፒታል 4. ከግል ክሊኒክ		
125	አገልግሎት የተጠቀሙበት ምክንያት;(ከአንድ በላይ መልስ ይቻላል)	1. ህመሙ ስለባሰ 2. በሰዋች ምክር 3. ሊመጣ የሚችለዉን መዘዝ/ሞት በመፍራት 4. የጤና ተቋሙ ቅርብ በመሆኑ		
126	ህመሙ ከተከሰተ በኋላ በምን ያህል ጊዜ የህክምና አገልግሎት አገኙ;	1. በሰአታት 2. በቀናት 3. በሳምታት 4. በወራት		
127	ለጥያቄ ቁ. 121 መልስዋ በፍጹም ከሆነ ለምን;(ከአንድ በላይ መልስ ይቻላል)	1. የገንዘብ እጦት 2. ህመሙ የከፋ አለምሆኑ 3. የህክምናው መወደድ 4. የትራንስፖርት አለመኖር 5. በአቅራቢያ ያለው ጤና ተቋም እርቀት		
128	ልጆች ሲታመሙ ህክምና ለመውሰድ በቅርብ መጓጓዣ ታገኛላችሁ	1. ሁል ጊዜ 2. አዋ 3. አልፎ አልፎ 4. በፍጹም		
129	ለጥያቄ ቁ. 127 መልስዋ አዋ ከሆነ በምን; (ከአንድ በላይ መልስ ይቻላል)	1. አምቡላንስ 2. የህዝብ ማመላለሻ 3. በሰዉ ጉልበት 4. ሌላ፣ ይጠቀስ		

Annex V: Statement of declaration

By my signature below, I declare and affirm that this thesis is my own original work. I have followed all ethical principles in the preparation, data collection, data analysis and completion of this research thesis.

Name: Genanew Kassie (BSc).

Signature: _____Date_____

Place: Addis Ababa University, College of Health Sciences, School of Public Health

Date of submission: _____

Research Advisor: `

1. Ewnetu Firdawek (MPH, PhD)

Signature: _____Date_____

Annex VI: Approval by the board of examination

As a member of the Board of Examiners of the MPH Thesis-Open Defense Examination, I certify that I have read and evaluated the Thesis prepared by Genanew Kassie and examined the candidate. I recommend that the thesis be accepted as fulfilling the thesis requirement for the degree of Master's in General Public Health.

1. Examiners:

(1)._____ _____Chair Person Signature, Date_____

(2). _____ _____Examiner Signature, Date_____

2. Department head:

Name_____Rank _____Signature _____Date_____

Final approval and acceptance of the Thesis are contingent upon the submission of its final copy to the Council of Graduate Studies through the Candidate's Department or School Graduate Committee.