**ADDIS ABABA UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

# Under-five street children diarrheal home treatment: The case of mothers residing on streets of selected sub-cities in Addis Ababa, Ethiopia 2016


**BY:**

**Henock Atnafe (BSC.)**

**ADVISOR:**

**Girma Taye (PhD)**

**CO-ADVISOR**

**Mr. Mulugeta Tamire (BSC, MPH)**


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## Approved by the board of examiners

This thesis is by Henock Atnafe Degefu accepted in its present form by the board of examiners as satisfying thesis requirements for degree of masters of Science in public health.

Examiner Date_____

Dr. Tatek Bogale (MD) Signature_____

Adviser Date _____

Girma Taye (PhD)_____ Signature_____

Chair of the department Date……

Muluken Gizaw (BSC, MPH) Signature_____

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Chair of the department Date…….

_____ Signature_____

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**ACRONYMS**

AAU……Addis Ababa University

AOR……Adjusted Odds Ratio

COR……Crude Odds Ratio

EDHS…….Ethiopian Demographic Health Survey

NGOs……..Non-Governmental Organizations

ORS…….Oral Rehydration Solutions

ORT…….Oral Rehydration Therapy

ORS…….Oral Rehydration Salts

RHF…….Recommended Home Fluids

SSW…….Salt-Sugar-Water Solutions

WHO…….World Health Organization

SPSS…….Statistical Package for Social Sciences

UNICEF……United Nations Children's Fund

**Abstract**

***Background:*** Globally, diarrheal diseases remain a leading cause of death. It is estimated for 1.87 million deaths each year, accounting for approximately 19% among children of under- five. Most of these deaths are due to dehydration and mismanagement or delayed management of the disease. Appropriate home treatment of under-five diarrheal diseases could prevent a significant number of child deaths and complications due to illnesses**.**

***Objectives:*** To asses prevalence of under-five diarrheal diseases, knowledge and practice of home treatment; it's associated factors among mothers residing in selected sub-cities street of Addis Ababa town, Ethiopia, 2016.

***Methods:*** Cross-Sectional study was conducted among mothers residing in street who had under-five children in Addis Ababa, February 2016.A sample of 422 mothers were selected from four sub-cities by systematic sampling technique. Data was collected on 406 respondents through pre-tested structured questionnaire with face to face interview. Then, data were entered using EPI Info version 7 and exported to SPSS for analysis. Descriptive statistics and logistic regression analysis was conducted to assess knowledge, practice and their associated factors. Significances were considered at P -value less than 0.05 ($P<0.05$).

***Results:*** Out of all mothers residing in the streets, the prevalence of diarrhea among under-five index children was 53.8%.One hundred sixty three (40.1%) mothers residing in the streets had good knowledge and 117(28.8%) of them had good practice on home treatment. During bi-variate and multi-variate analysis, Mothers who were able to read and write were 2 times more likely to develop good knowledge of home treatment than illiterate mothers.[AOR=1.767, 95% CI, (1.112, 2.807)] Mothers aged from 25-34 years were 4 times more likely to develop good practice of home treatment than mothers in the age category 15–24 years old. [AOR=4.314, 95 % CI, (2.417, 7.701)].Mothers aged 35 years and above were 5 times more likely to develop good practice of home treatment than mothers in the age category 15–24 years old. [AOR=5.084, 95 % CI, (2.515,10.276)].Mothers who had elementary and above educational status were 4 times more likely to develop good practice of home treatment than illiterate mothers. [AOR=3.921, 95% CI, (2.288, 6.720)] .Mothers who can read and write were 2 times more likely to develop good practice of home treatment than illiterate mothers.[AOR=1.963, 95% CI, (1.060, 3.635)]

**Conclusion**: The present study concludes that the prevalence of diarrhea among under-five index children was high. Less than half of the participants had good level of knowledge and less than one third of respondents had good practice of under five diarrheal home treatment. Educational status of participants was significant factors associated with knowledge of study participants where as age and educational status was significant factor associated with practice.

# 1. INTRODUCTION

## 1.1 Background

Globally, diarrhea is one of the main causes of morbidity and mortality in under -five Children with morbidity of nearly 1.7 billion cases every year. It is the second leading cause of death in children under-five years old, and 1.87 million deaths every year [1].

In many African countries, diarrhea diseases is placed in second position among the leading cause of death for under-five years of children with more than 3 million deaths per year and remains a leading cause of mortality and morbidity of children in Sub-Saharan Africa [2,3].

In Ethiopia, diarrhea is the major killer of children and thus is a serious public health problem with an estimated 73,700 children under the age of five deaths. This accounts for an estimated 20% of the deaths among children under- five years of age in the country [4-6].

The majority of street children are living in conditions of severe deprivation which place them at both physical and psychological risk. Inadequate nutrition, long working hours and exposure to aversive weather conditions and physical abuse while on the street, endanger their development. Street people are at high risk for acute and chronic medical illnesses which shows their susceptibility of diseases such as diarrheal diseases [7-9].

For the better management of diarrhea the national guideline in Ethiopia recommend counseling mothers on the three rules of home treatment giving extra fluid, continue feeding and advice the mother when to return to health facility [10-11].

The most important purpose of treating diarrheal diseases is preventing dehydration or correctly rehydrating people with dehydration [12]. ORS or commercially available solutions made of appropriate amounts of sodium, potassium and glucose should be used for rehydration if patients

can consume or drink the required volumes; otherwise appropriate intravenous fluids may be used[13-15].

Proper home management can reduce morbidity and mortality due to diarrhea. It was estimated that 60-70 percent of diarrhea related deaths are caused by dehydration due to loss of water and electrolytes. Factors of particular importance include care givers knowledge about causes of diarrhea and the associated dangers signs, prevention of dehydration during diarrheal episodes through the use of Oral Rehydration Salts [14, 16].

## 1.2 Statement of the problem

Diarrhea can last several days, and can leave the body without the water and salts that are necessary for survival. Most people who die from diarrhea actually die from severe dehydration and fluid loss. Children who are malnourished or have impaired immunity as well as people living with HIV are most at risk of life-threatening diarrhea. Diarrhea is usually a symptom of an infection in the intestinal tract, which can be caused by a variety of bacterial, viral and parasitic organisms. Infection is spread through contaminated food or drinking water or from person-to-person as a result of poor hygiene [17].

Diarrheal disease is an important public health problem among under-five children in developing countries. It is the result of failure to exclusively breastfeed young infants to 6 months and the introduction of liquids and solid foods at too early, lack of access to sufficient clean water and sanitary disposal of human waste, inadequate feeding practices and improper hand washing, poor housing conditions and lack of access to adequate and affordable health care[18].

In Ethiopia, this disease is the major killer of children and thus is a serious public health problem[4].The children and mothers living in the street have health problem and risk for acute and chronic medical illnesses shows exposure/susceptibility to diseases such as diarrheal diseases In addition, poverty restricts the mothers to provide age appropriate, nutritionally balanced diets or to modify diets when diarrhea develops so as to alleviate and repair nutrient losses [7-9].

The role of the family, especially the mother, is vital in health promotion, disease prevention and patient care. In the actions taken by the mother, the minimum required act is a brief and superficial examination of the dehydrated child and the amount and type of liquid fed to him/her in the case of diarrhea [19].

Many thesis works done on street children focuses on HIV and Reproductive health issues. There is no such study or any intervention on prevalence of diarrhea, knowledge, practice and associated socio-economic factors of diarrheal diseases home treatment of under-five children among the urban street mother's communities been published in Ethiopia which is of significant value.

Due to socio-economic conditions of mothers living on the streets, there may be improper home treatment of diarrheal diseases and lack of knowledge and practice. Therefore, to overt the problem this study may serve as a baseline data and finding the factors associated with

knowledge and practice of under-five children diarrheal home treatment helps to find possible intervention methods. So, this study will have important policy implications for health intervention programs and with a view of adding to the existing body of knowledge that will improve child health care in the study group in particular and in the city in general.

### 1.3 Significance of the Study

In Ethiopia, diarrhea is the major killer of children and thus is a serious public health problem with an estimated 73,700 children under the age of five deaths. This accounts for an estimated 20% of the deaths among children under- five years of age in the country Most of these deaths are due to dehydration and mismanagement or delayed management of the disease. Appropriate home treatment of under-five diarrheal diseases could prevent a significant number of child deaths and complications due to illnesses**.**

Decreasing mortality and morbidity of under-five children is one of targets in the health service transformation plan (HSTP) set by Government of Ethiopia. This study will serve as baseline information on the extent of diarrheal diseases problem among this group and understand the knowledge and practice home treatment of mothers residing in the streets for further health oriented action to be taken. It is believed that the study will give clue for the prevention of the diseases and to give information for those who are interested for further study. It will also help the government and NGOs working on street dwellers to plan health services.

Generally, the study aimed to assess the level of proper diarrheal home treatment knowledge, practice and its associated socio-economic determinants which is very important for the better decision and health planning of helping mothers and children who dwell in the streets to prevent diarrheal diseases and promote diarrheal disease home treatment.

# 2 LITRATURE REVIEW

## 2.1 Magnitude of under-five diarrheal morbidity

Even though, limited studies conducted on street population could be found information gathered from general population indicated that;

The major causes of under-five mortality remain the same globally; their relative importance varies across regions of the world. In low-income countries, infectious diseases account for a large proportion of under-five deaths in which diarrhea is responsible for 15% of the deaths[20] .

A cross-sectional study done in Pakistan (in 2004) revealed that the overall two weeks prevalence of under-five diarrhea was 16%[21]. Similar study done in Iraq (in 2009) shows that the two weeks period prevalence of under-five diarrhea was 21.3%[22]. A cross sectional study done in India rural community (in 2008) shows that the two weeks prevalence of diarrhea was 25.2% [23].

A community based study done in rural upper Egypt (in 2000) revealed that the point prevalence of diarrhea was 19.5%[24] . A cross sectional study done in Accra metropolitan area, Ghana urban area in 2005 indicate that 19.2 % of the children covered in the study have had diarrhea in the preceding two weeks of the study[25] . Similar study done in Democratic Republic of Congo and Burkina Faso revealed that two weeks prevalence of diarrhea among under-five children was 16% and 10.2% respectively[26,27] .A community based study from Mkuranga district ,Tanzania (in 2014)shows that the two weeks period prevalence of diarrhea was 6.1%[28]

Community based study from east Gojam zone[29] , Benishangul-Gumuz regional state[30] and west Gojam zone[31] shows that the two weeks prevalence of diarrhea among Under five children was 6.5%, 22.1% and 18% respectively. A community based cross sectional study from Nekemte town reveals that under-five diarrheal morbidity over a period of two weeks preceding the study was about 28.9%[32] . Similar study done in Arba-Minch rural community (in 2012) shows that the magnitude of diarrhea among under-five children was about 31% [33].A community based cross sectional study from Kersa district, Eastern Ethiopia which was done in 2011 reveals that under-five prevalence of diarrhea was 22.5%[34] .

According to Ethiopian Demographic Health Survey 2011, prevalence of diarrhea was 13 percent among under-five were reported to have had diarrhea, and 3 percent had diarrhea with blood in the two-week period before the survey. Diarrhea was most common among children age 6–23 months (23-25 percent)[35].

## 2.2 Mothers knowledge about home treatment of under-five diarrheal home treatment

Even though, limited studies conducted on street population could be found information gathered from general population indicated that;

There are different factors that affect the proper management of diarrheal disease: knowledge of the mothers towards the cause, sign, symptoms and consequence of diarrheal disease, education status of the mothers, income of the family, and place of the residence, culture of the community and availability The primary goal of treating diarrheal diseases is preventing dehydration or appropriately rehydrating persons with dehydration.ORS or commercially available solutions made of appropriate amounts of sodium, potassium and glucose should be used for rehydration if patients can consume or drink the required volumes; otherwise appropriate intravenous fluids may be used[14].

The community based cross-sectional study from Arba Minch Zuria, Southern Ethiopia (in 2013)shows that out of mothers whose child had got diarrhea about 31% of mothers could not give anything to manage the diarrhea and reduce diarrhea morbidity[36] .

Findings from EDHS 2011 states during diarrhea, ORT are a simple and effective remedy for dehydration. It involves giving the child a solution prepared by mixing water with a commercially prepared packet of ORS or RHF, usually a homemade sugar-salt-water solution. On knowledge of ORS, 42% of the mothers had knowledge that could be summarized as ORS does not stop diarrhea but adds the lost water to the child's body, 24.1% said that ORS helps the child recuperate the physical strength lost due to the diarrhea, 16.4% said that ORS is the cure for diarrhea, and 17.5% did not know any details of ORS or had never heard of it. Mothers are encouraged to continue feeding and increase the amount of liquids given to their children when they suffer from diarrhea illnesses. Out of the 26 (54%) respondents who had used ORS in the past, 42.9 % knew correct method of preparation and 70.5 % knew the correct method of administration of ORS.From the children,16% with diarrhea were given more fluids than usual, as recommended[35] . Some studies and scholars recommended two general methods for an effective treatment of diarrheal disease, ORS and zinc supplementations [37,41] .

Interventions to improve home treatment of diarrhea could reduce child deaths by up to 40%. A community based cross sectional study done in urban Kenya showed that (in 2003) majority of respondents 692 (76.4%) were not able to mention any of the danger signs. Only 29 (3.1%) of the mothers new all the danger signs. Knowledge of danger signs is important because it leads to

early referral of very sick children. Failure to refer such children results in major complications or death [38].

A community based cross-sectional study done in Fenote Selam Town,Ethiopia (in 2014) maternal knowledge and practice towards diarrhea management revealed that 63.6% of mothers had good knowledge towards diarrhea management. Maternal age above 45 years old, illiterate mothers, private employees and widowed mothers were independently associated towards knowledge of diarrhea and its management. Most mothers have lack of experience, knowledge and awareness for practice of ORS preparation. Almost half of the mothers never took any treatment action during Diarrhea episodes [39].

A cross-sectional study done on marginalized community of Moran, Nepal (in 2011)shows mothers had some basic knowledge about the prevention of diarrhea, and fluids/foods which can or cannot be given during episodes of diarrhea. Knowledge about signs of dehydration was poor. This is may be due to none of the mothers were able to mention all the steps for correct and complete preparation of oral rehydration salt (ORS) and salt-sugar-water (SSW) solutions. Only, 8.5% of the mothers stated that the purpose of giving ORS solution during diarrhea is to prevent the child from getting dehydrated [40].

The WHO/UNICEF recommendation includes zinc as part of routine diarrhea treatment, was developed after extensively reviewing the results of numerous randomized placebo-controlled trials (RCTs), demonstrating the benefits of zinc on shortening and decreasing the overall severity of the diarrhea episode. Zinc for the treatment of diarrhea is a critical treatment intervention and since 2004, zinc has been recommended by WHO and UNICEF as the only treatment to be coupled with oral rehydration salts for the treatment of all diarrhea episodes. [41].

### 2.3 Mothers practice on home treatment of diarrheal disease

Even though, limited studies conducted on street population could be found information gathered from general population indicated that;

Mothers are encouraged to continue feeding and increase the amount of liquids given to their children when they suffer from diarrhea illnesses. These practices help to reduce dehydration and also minimize the adverse consequences of diarrhea on the child's nutritional status. Research done in India show only 10.4% were aware of the specific measures for prevention of diarrhea, most (85.5%) of the mothers were in favor of continuing breastfeeding during diarrhea [23].

The community based crossectional study from Arba Minch Zuria, Southern Ethiopia (in 2013) showed out of mothers whose child had got diarrhea about 31% of mothers could not give anything to manage the diarrhea and reducing diarrhea morbidity involves providing better sanitation for the entire population and hygiene of the person caring of the child which recommends that counseling mothers on the three rules of home treatment; give extra fluid, continue feeding and advise the mother when to return health facility is very crucial for the control and the prevention of the disease[36].

In EDHS 2011 survey, the proper disposal of children's feces is extremely important in preventing the spread of disease. Contact with human feces directly, or indirectly by animal contact with the feces, can lead to diarrheal diseases. Comparable data from the 2005 EDHS show an increase in safe stool disposal from 21 percent to 36 percent over the five years between surveys. The survey results show a higher proportion of urban children's stools are disposed of safely than of rural children's stools (63 and 31 percent, respectively). Safe disposal of children's stools increases with mother's level of education and with household wealth [35].

According to Health seeking behavior, 32 percent of the children with diarrhea were taken for advice or treatment to a health facility or provider. Children ages 24-35 months were more likely than children in other age groups to be taken to a health facility or provider for treatment (39 percent). The differences in percentages of children taken for treatment were small between male and female children and by type of diarrhea. Urban children were considerably more likely to have been taken for advice or treatment for diarrhea than rural children (54 percent versus 29 percent). Children of highly educated mothers and those in the highest wealth quintile are more likely than other children to be taken to a health facility or provider for treatment when they have diarrhea. During diarrhea, ORT is a simple and effective remedy for dehydration. It involves giving the child a solution prepared by mixing water with a commercially prepared packet of ORS or RHF, usually a homemade sugar-salt-water solution. Twenty-six percent of children with diarrhea were treated with ORS packets and 8 percent were treated with RHF. Sixteen percent of children with diarrhea were given increased fluids. Overall, two children in every five with diarrhea were treated with some form of ORT or increased fluids, while 42 percent of children did not receive any form of treatment. Comparable data from the 2000 EDHS and 2005 EDHS show an increase in mothers' health seeking behavior for children with diarrhea over the past

decade. Highest prevalence of childhood diarrhea was observed among uneducated mothers (13.9%) compared to primary (12.6%), secondary (10.2%) and more than secondary (10.9%) educated mothers [40]. Researchers asked mothers regarding knowledge of ORS, 42% of the mothers had knowledge that could be summarized as ORS does not stop diarrhea but adds the lost water to the child's body, 24.1% said that ORS helps the child recuperate the physical strength lost due to the diarrhea, 16.4% said that ORS is the cure for diarrhea, and 17.5% did not know any details of ORS or had never heard of it [35].

Fluids in more than usual amounts were favored by 6.3 %, in usual amounts by 39.6 %, in less than normal amount by 50 %, and 4.1% mothers were in favor of complete restriction. Sixty five per cent mothers had of the opinion that usual amount of food should be given and 35.4% favored less than usual amount of food during diarrheal episodes. For treatment of diarrhea, 33 (68.8%) mothers give home remedies; 9 (18.8%) start ORS at home. When illness is serious or home remedies do not seem to benefit, 83.7 % consult local medical practitioner, and 16.3% seek treatment from Government health functionaries. Out of the 26 (54%) respondents who had used ORS in the past, 42.9 % knew correct method of preparation and 70.5 % knew the correct method of administration of ORS Sixteen percent of children with diarrhea were given more fluids than usual, as recommended. More than one-third of children (35 percent) were given the same amount of fluids as usual. However, almost one child in every two (49 percent) were offered less fluid than usual or were given no fluids at all: 28 percent were offered somewhat less, 13 percent were offered much less, and 7 percent of children were offered no fluids at all which suggest that a large proportion of mothers still engage in the dangerous practice of curtailing fluids and food intake when their children have diarrhea [35].

For the better management of diarrhea the national guideline in Ethiopia recommend counseling mothers on the three rules of home treatment; giving extra fluid, continue feeding and advice the mother when to return health facility [42].

A community based cross-sectional study done in Fenote Selam Town,Ethiopia (in 2014) showed that, during episodes, 24% of the mothers gave less breast milk, 34% gave the same amount, and 13% gave more breast milk as usual. Fluids, defined as water, tea, rice-water, and juice, were withheld in 29% of the cases, were given the same amount in 44% of the cases, and were increased in 26% of the cases. Also, 46% of the mothers withheld food during the illness.

Mothers withheld fluids more when the child vomited than did not vomit during the illness (33% vs. 17% respectively, p=0.02) [39].

## 2.4 Factors associated with under five children diarrheal disease home treatment

Even though, limited studies conducted on street population could be found information gathered from general population indicated that;

A community based cross-sectional study done in Fenote Selam Town,Ethiopia (in 2014) indicated that 63.6% of mothers had good knowledge towards Diarrhea management while 45.9% of mothers had good practice on diarrhea management. In general, most mothers have lack of experience, knowledge and awareness for practice of ORS preparation. Almost half of the mothers were not taken any treatment action during diarrhea episodes. Maternal age above 45 years old, illiterate mothers, private employees and merchant and widowed mothers were independently associated towards knowledge of diarrhea and its management. In addition the research revealed that illiterate mothers had poor knowledge towards diarrhea management as compared to educated mothers. The fact is that as the educational level of the mothers increased the level of awareness and knowledge becomes increase. In bi-varate analysis, mothers who had poor knowledge were 25.5 times likely to have poor practice toward diarrhea management as compared to mothers who had good knowledge [39].

The cross-sectional study conducted in Zahedan regarding knowledge and practice regarding childhood diarrhea showed that knowledge of the majority of mothers (64.3%) regarding diarrhea and diet was moderate and only 3.7% had good knowledge. The majority of mothers (56%) had a moderate practicing knowledge of diarrhea and diet and only 2.3% had a good practice[43].

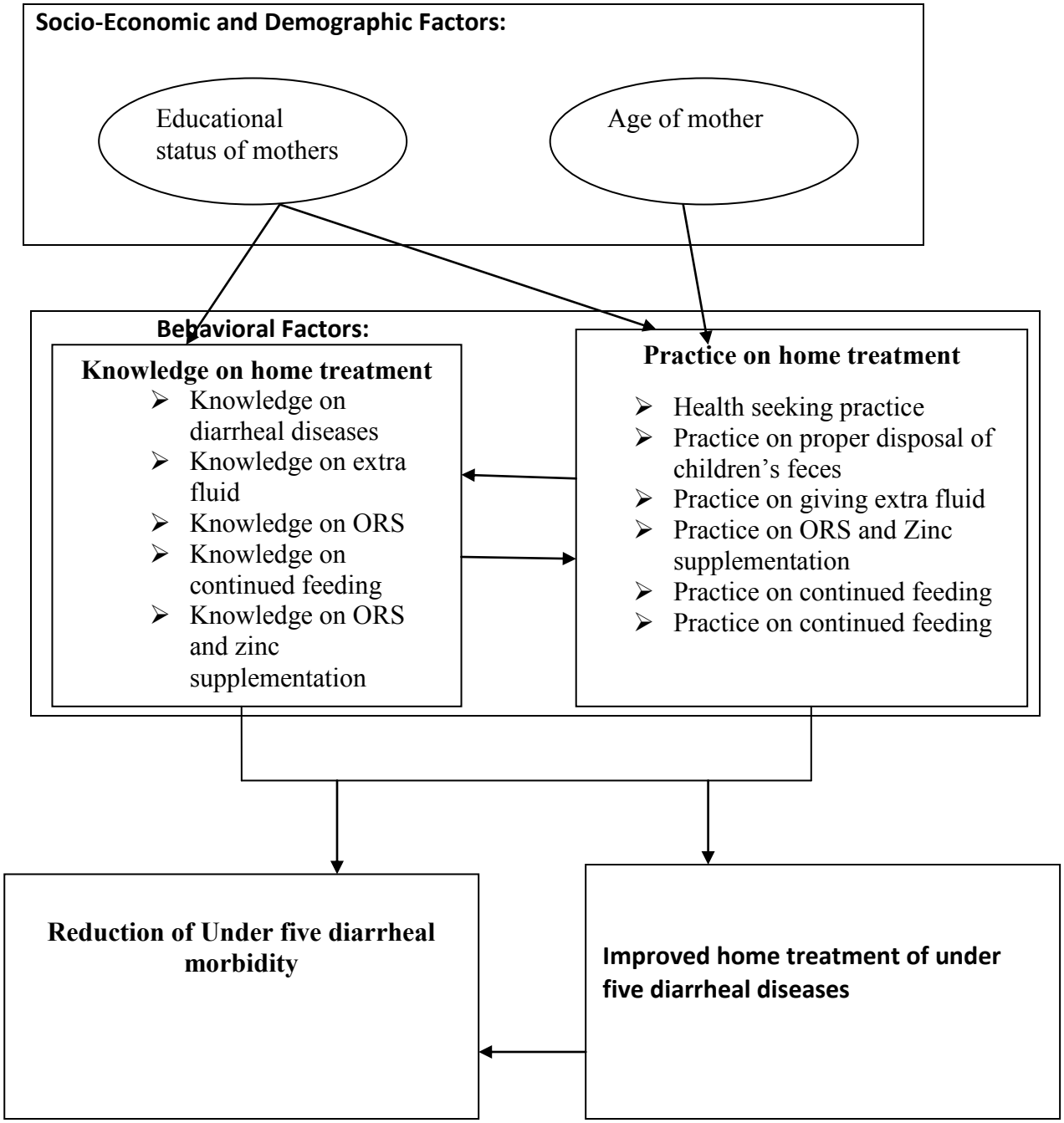


**Figure 1: Conceptual framework on the under-five diarrheal Home treatment knowledge and practice constructed from different literatures**

Source: - Muluken D., 2011[31] Shikur M., 2013. [36], , Amare D., 2014[39] , Ansari M.2011[40] .

# 3 OBJECTIVES

## 3.1 General objective

- To assess the prevalence of under-five street children diarrheal diseases, knowledge and practice of home treatment; it's associated factors among mothers residing in the selected sub cities streets of Addis Ababa town, Ethiopia, 2016.

## 3.2 Specific objectives

- To assess the prevalence of under-five street children diarrhea disease among mothers residing in the selected sub cities streets of Addis Ababa town, Ethiopia, 2016.
- To asses knowledge of under-five children diarrheal disease home treatment among mothers residing in the selected sub cities streets of Addis Ababa town, Ethiopia, 2016.
- To asses practice of under-five children diarrheal disease home treatment among mothers residing in the selected sub cities streets of Addis Ababa town, Ethiopia, 2016.
- To identify factors associated with knowledge and practice of under-five diarrheal home treatment among mothers residing in the selected sub cities streets of Addis Ababa town, Ethiopia, 2016.

# 4 RESEARCH METHODS AND MATERIALS

## 4.1 Geographical location of the study area

The study was conducted in selected sub-cities of Addis Ababa city, Ethiopia. Being the capital city of the country it has a wider role in the economic, social, political and administrative issues. The center of Addis Ababa is located at 9 degree latitude and 38 degree east longitudes with a height of 2000m to 2500m above sea level at the peak of Entoto mountain, having a mean annual temperature of $16^0$C (range: $7^0$C - $26^0$C) with an average annual rainfall of 1200 millimeter. Its area is 540 km2 and the total population of the city is estimated at nearly 3 million populations, from which 222,000 of them are under-five years' old children. For administrative purpose Addis Ababa is divided in to 10 sub-cities and 106 woreda which is currently the smallest administrative level.(Source:- Socio-economic profile of Addis Ababa for the years 200-2006 E.C., Bureau of Addis Ababa Finance and Economic Development (BoFED) Policy Study and Population Affairs Core Process February, 2015).

## 4.2 Study Design

A cross-sectional descriptive study was conducted from February - May 2016.

## 4.3 Source population

All mothers who lived on the streets of Addis Ababa are the source population.

## 4.4 Study Population

Mothers who are living in the street from the four sub cities (Addis Ketema sub-city, Lideta sub-city, Gulele sub-city and Arada sub-city).

### 4.4.1 Inclusion Criteria

- All mothers above the age of 15 years, who had at least one under-five children living in the streets of Addis Ababa more than a month, able to hear and speak and not seriously ill were involved.

### 4.5 Sampling method and sample size estimation

## 4.5.1 Sampling method

Based on the inclusion and exclusion criteria among the 10 sub-cities, four sub-cities were randomly selected (Arada sub-city, Lideta sub-city, Addis ketema sub-city and Gullele sub-city) due to resource and cost constraints. There was no priory collected census data on all under-five year's old children whose mothers are street dwellers. Therefore; there was no previous study that shows sampling proportion to be used for this study. So, the study used 50 % to determine the sample size. From information gathered from sub-cities labor and social affair office, even though there was no satisfactory list available, systematic sampling methods was used by using the estimate of the total mothers residing in the streets having under-five children, studying the street dwelling place boundaries of the survey area and determine of the start point and end point and which direction was followed when walking through the area. The study units were selected again with the consideration of inclusion and exclusion criteria using random starting point from Arada sub city to capture sample sizes in the given sub-cities streets.

## 4.5.2 Sample size estimation

Since there was no priory collected research survey data on those marginalized segments of the population, under-five year's old children whose mothers are street dwellers. There was no previous study that shows sampling proportion to be used for this study.

Both knowledge and practice use the same set of tools, therefore sample size determined for either of them serves all specific objectives. Since the sample size for all specific objectives was the same the sample size for this study was 422.Then the sample was distributed to sub-cities and Woredas using proportional allocation to size (PAS). By the formula for single population proportion formula:

- Z = 95% CI (1.96)
- P = estimated proportion of Street under-five diarrhea home treatment knowledge (50%)
- W = margin of error (5%)
- n = required sample size
- N = final sample size after considering 10% non-response rate from 'n'
- $\underline{(Z_{a/2})^2 * P(1 - P)}$

$$n = \frac{1.96*1.96*0.5*(1-0.5)}{W^2} = \frac{1.96*1.96*0.5*(1-0.5)}{0.05*0.05}$$

n= 384

Non-response rate 10% = 38

Total estimated sample size is 422

### 4.6 Sampling procedure

**Proportional allocation**

In Addis Ababa, four sub-cities were selected randomly. Then, according to information gathered from Addis Ababa Social affairs office the total number of mothers with under-five children in the selected four sub-cities was 2,710. Based on proportional allocation to size, this 422 study subjects were distributed to each sub-city using the following formula.

$$nk = \frac{n \times Nk}{N}$$

Where; nk =required sample size from each Sub-city (Addis ketema, Arada, Gullele, Lideta)
n= the total sample size - 422
After that the sample size were allocated to each sub city as follows;

$$\text{nk Addis ketema} = \frac{n \times Nk \text{ (Addis ketema)}}{N} = \frac{860 \times 422}{2,710} = 134$$

$$\text{Nk Arada} = \frac{n \times Nk \text{ (Arada)}}{N} = \frac{620 \times 422}{2,710} = 96$$

$$\text{nk Gullele} = \frac{n \times Nk \text{ (Gullele)}}{N} = \frac{474 \times 422}{2,710} = 74$$

$$\text{nk Lideta} = \frac{n \times Nk \text{ (Lideta)}}{N} = \frac{756 \times 422}{2,710} = 118$$

Number of mothers residing in the streets in each sub city would have sample populations respectively as shown in Figure 2.The selection of participants was done by systematic sampling.

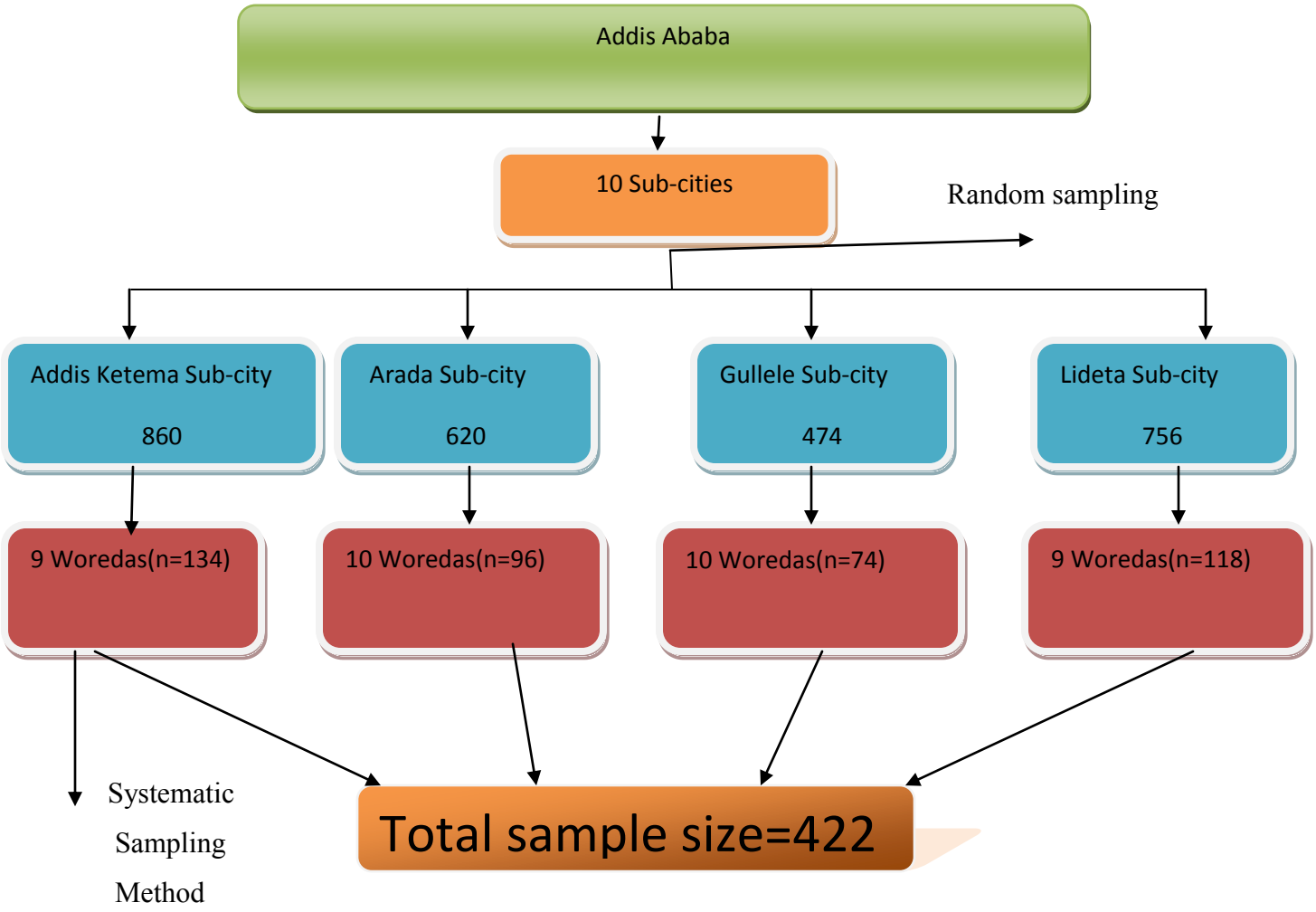


*Figure 2-Schematic representation of sampling procedure used for mothers residing in the streets of Addis Ababa town, Ethiopia, February -May 2016 (n=422)*

### 4.7 Data Collection Procedures

Quantitative data of pre-tested structured questionnaire was used including questions adopted from studies done on community level [39, 31 and 40] to capture relevant data. The questionnaire was administered by four female nurse data collectors and one co-investigator who were trained for one day before starting data collection. The data was collected using structured questioner, which was prepared in English then translated into Amharic language, for the data collection purpose, and back to English again in order to maintain the consistency of the Instrument. Ten percent of the questionnaires were pre-tested on mothers residing in the streets who were not selected, to identify potential problem areas, unanticipated interpretation and cultural objections to any of questions. If there are more than two under five children with a

mothers residing in the streets, information was taken for index child explained by the operational definition to avoid participants recall bias and interviewer bias.

Face to face interview was used and the interviewers were all females to facilitate communication between interviewees and respondent (mothers residing in the streets) and for obtaining reliable information. However, for the study participant who were refusing to answer at any time of the interview to any specific questions, it was to be recorded as missing and the questionnaire is recorded as incomplete.

## 4.8 Variables of the study

### 4.8.1 Dependent variable

- Prevalence of diarrheal diseases
- Knowledge of diarrheal disease home treatment
- Practice of diarrheal disease home treatment,

### 4.8.2 Independent variables

- Mothers age,
- Mothers marital status ,
- Mothers education,
- Average household monthly income,
- Family size
- Child age
- Child sex
- Current Birth order of the mother,
- Mass media exposure,
- Head of house hold,
- Number of under-five children,
- Average street dwelling experience

## 4.9 Operational Definitions of terms

**Good knowledge:** Those mothers scoring above mean value from the 20 close ended questions were considered as having good knowledge.

**Poor knowledge:** Those mothers who score less or equal to mean value from the 20 close ended questions were considered as having poor knowledge.

**Good Practice:** Those mothers who score above the mean value from the 15 close ended questions were considered as having good practice.

**Poor Practice:** Those mothers who score less or equal to the mean value from the 15 close ended questions were considered as having poor practice.

**Diarrheal diseases:-**refers to a child with loose or watery stool for three or more times during a 24-hour's period in the household within two weeks period prior to the survey, as reported by the mother of the child.

**Diarrheal Home treatment-** refers to identification of diarrhea, giving extra fluid and continued feeding which are crucial for the control and the prevention of the disease among the street dwelling.

**Street dwelling-** refers to the streets, around bus stations, parks, open spaces, religious centers, construction sites, around graveyards, and other public places.

**Index child:** refers to a child that was included in the study from children of mothers residing in the streets to have information on the health characteristics.

### 4.10 Data processing and Analysis

Data collection was conducted using face to face interview based questionnaire. The data was checked for its consistency and completeness during data collection on site by the co-investigator. At the end of data collection, the principal investigator checked and edited before entry. After preparing coding instructions the data entry was done using EpI-Info 7 statistical program and data cleaning and analysis was done using SPSS 20 software. About 10% data were double entered to check consistency. Frequency count and percentage were used to clean and check the accuracy of data entry. Descriptive statistics and logistic regression (where odds ratio with 95% confidence intervals will be estimated) were used to analyze the data. Descriptive analysis was done to summarize the frequency distribution, mean, range, minimum and maximum, median and standard deviation for the measured determinants prior to the analysis of the data using appropriate statistical models. Since the outcome of diarrheal diseases is binary

outcome, logistic regression models was employed. Bi-variate analysis was used for the prevalence using crude odd ratio through cross tabulating across the dependent and independent variables while logistic regression was used to analyze knowledge and practice of home treatment. Logistic regression was fitted and variables which show statistically significant ($p<0.25$) were used as covariates to see the relative effects of independent variables on dependent variable by controlling for potential confounders. Differences were considered to be significant, when P-Value was less than 0.05 ($p < 0.05$).

### 4.11 Data quality management

To ensure the quality of data first training of the data collectors and their supervisor was carried out for one day by the principal investigator on the objectives, relevance of the study, methods interviewing, confidentiality of information and informed consent. Before data collection process commenced, data collectors explained in detail the purpose of the research (to better understand and indicate prevalence and associated home treatment knowledge and practice of diarrhea disease) and asked the honest response from respondents before going directly into the research questions. The data collection tool was prepared in English, translated in to Amharic, and then back to English to check its consistency. The questionnaires were pre-tested outside the four selected sub-city on 10% of sample size (42 participants) of Yeka sub-city and Bole sub-city mothers residing in the streets by which were not included in the study. Pre-test was done before the actual data collection work to see for the accuracy of responses and to estimate time needed and the questionnaire is adjusted accordingly. Based on findings of the pre-test, the questioners were modified.

Data were checked with in each questioner for completeness before data entry. Each Completed questionnaires had been coded on pre-arranged coding sheet by the principal investigator to minimize errors. Then, they were checked every day by the supervisors in the field and again re-checked by the supervisor for consistency, clarity and completeness in the same day. The principal investigator closely observed and coordinated the overall activities of the study project. Supervision during data collection was done to understand how the data collectors were handling the questionnaire and each filled questionnaire was checked for its completeness, accuracy, clarity, consistency on daily basis. Corrective measures were given accordingly if there was any gap, then special care was given during data entry, and cleaning and the whole data was cross

checked for reliability before analysis. Finally, it was analyzed by the principal investigator in collaboration with assistance from experienced expert statistician.

### 4.12 Ethical issues

This research project proposal was approved by the Department Research and Ethical Review Committee and ethically cleared by Institutional Review Board (IRB), Department of Public Health Addis Ababa University. An official letter of permission was obtained from School of Public Health of Addis Ababa University (written to Addis Ababa Social Affairs Office). The purpose of study was explained to the study subjects. For mothers residing in the selected sub city streets age between 15 and below 18, issues of assent was fully addressed during the data collection. Full verbal consent was obtained from the mothers of the child after clear explanation was given about the aim of the study. Name was not put on the questionnaire and information sought was not used for any other purpose than that to which participants consented for and not passed to a third party. Confidentiality and privacy was maintained during data collection, analysis and reporting in which the information obtained from the respondents will not be shared with anyone other than the data collectors and principal investigator. The information sought was not used for any other purpose than that to which participants consented for and not passed to a third party. There were no possible risk (no invasive procedures) entertained in this particular study. Mothers whose children were found to be sick with diarrhea during the interview were given ORS by the data collectors and counseled to take their children to the nearby health facility for better management. Health education related to diarrheal diseases home treatment was also given to the whole Mothers residing in the streets immediately after data collection. The principal investigator declared that there is no conflict of interests regarding the study.

## 4.13 Dissemination and Utilization of results

Result of the study was submitted and presented to School of Public Health, College of Health Sciences, Addis Ababa University. The study results will be submitted to Addis Ababa Health Bureau and selected four sub-city health offices. Efforts will be made to supply the document to other government offices and NGOs that are working on child health, water supply and sanitation. The findings from the study will be presented on Public health seminars and an article will be submitted to one of public health Journals for the benefit of the study participants and create awareness on the subject.

## 5 RESULTS

A total of 406 (96.2%) mothers residing in the streets participated in this study. Among the study subjects, sixteen mothers were reported as non respondents due to refusal to participate in the survey in- spite the intense sensitization effort made by the data collectors.

### 5.1 Socio demographic characteristics

The mean age (SD) of the selected mothers residing in the streets was 29.73 (6.755) years; ranging from 15 to 65 years. Majority of participants, 225 (55.4 %), were in age group of 25 – 34 years; 190(46.8%) were illiterate and about 232(57.1%) participants were Separated/divorced/Widowed. Many of mothers residing in the streets, 368 (90.6 %), had at most five family members and the rest, 38 (9.4%), had more than five. Two hundred eighty (69%) had one child, 112 (27.6%) two children and the rest 14 (3.4%) had more than two children. Average dwelling experience of mothers residing in the streets recorded in the streets was 30.78 (17.67) months. The mean monthly income (SD) of the respondents was 498 birr (299) ranging from 50 to 2400 birr/month with majority of mothers between monthly income below 500 birr. (Table 1).

*Table 1-Socio-demographic characteristics of selected mothers residing in the streets of Addis Ababa ,Ethiopia, February -May 2016 (n=406)*

| **Variables** | **Category** | **Frequency N (%)** |
|---|---|---|
| Age of Mothers residing in the streets | 15 -24yr | 75(18.5) |
| | 25 -35yr | 225 **(**55.4**)** |
| | 35 yr and above | 106 **(26.1)** |
| Marital status of Mothers residing in the streets | Single | 62 **(**15.3**)** |
| | Married | 112 **(**27.6**)** |
| | Separated/Divorce/Widowed | 232 **(57.1)** |
| Educational status of mothers residing in the streets | Illiterate | 190 **(**46.8**)** |
| | Read & write | 85**(**20.9**)** |
| | Elementary and above | 131(32.3) |
| Monthly income | <500 birr | 209 **(**51.5**)** |
| | 500 –999 birr | 170 **(**41.9**)** |
| | 1000 -1500 Birr | 21 **(**5.2**)** |
| | >1500 birr | 6**(**1.5**)** |
| Numberof Under-five by the mothers residing in the streets | 1 | 280 (69.0) |
| | 2 | 112 (27.6) |
| | 3 | 14 (3.4) |
| Family size of Mothers residing in the streets | Less than and equal to 5 | 368 **(**90.6**)** |
| | Greater than 5 | 38 **(**9.4**)** |
| | **Total** | **406(100)** |

### 5.2 Prevalence of diarrhea among under-five street children

Among all selected mothers residing in the streets, 268(66%) mothers have under-five children recorded as having the two weeks prevalence of diarrheal disease. (Table-2)

*Table 2- Occurrence of diarrhea among selected mothers residing in the streets under five children in Addis Ababa, Ethiopia, February -May 2016 (n=406)*

| Variables | Category | Frequency (n=406) | Percentage % |
|---|---|---|---|
| Does any of your under-five children experience diarrhea in the past 2 weeks? | Yes | 268 | 66 |
| | No | 138 | 34 |
| | Total | 406 | 100 |

The mean age (SD) of the total under five children was 29.21 months (13.825) ranging from 2 to 59 months. From the total number under-five children, 148(50.3%) were male. The prevalence of diarrhea among under-five index children in the preceding two weeks of the study was 294(53.8%); the majority age group was older than 35 months (37.1%).(Fig. 3)

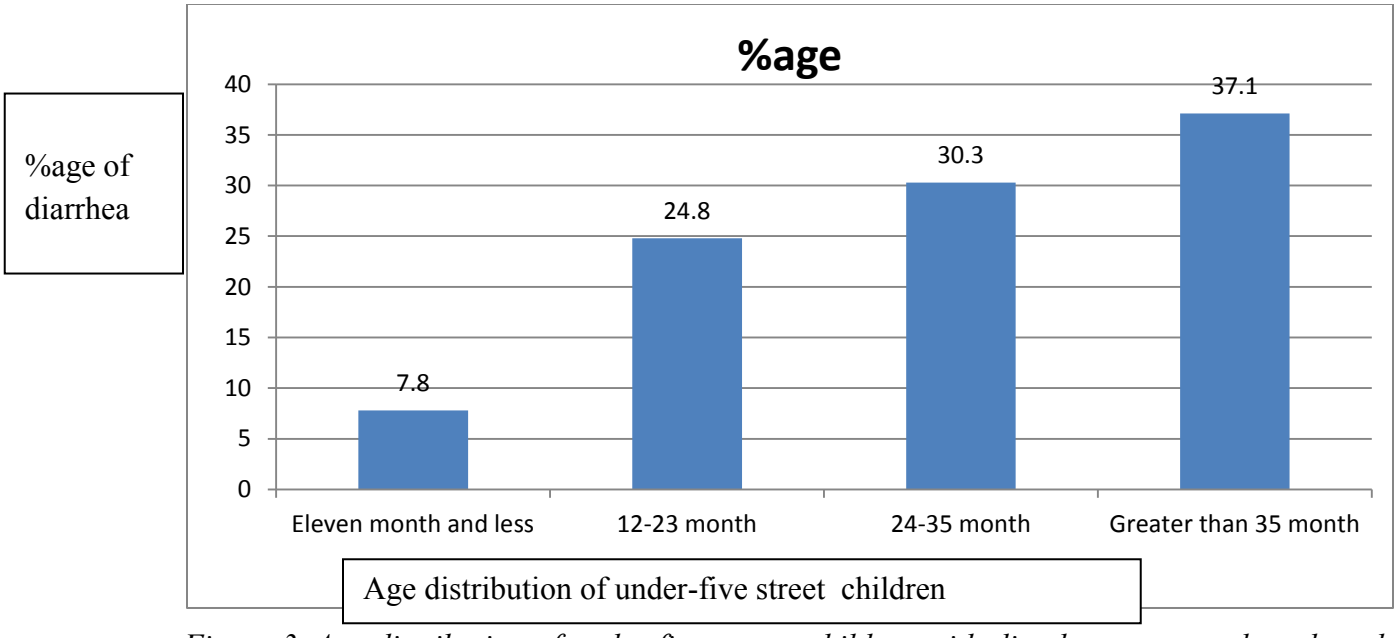


*Figure 3–Age distribution of under-five street children with diarrhea among selected mothers residing in the streets of Addis Ababa, Ethiopia, February -May 2016*

## 5.3 Mothers knowledge about home treatment of under-five diarrheal home treatment

The majority of participants, 224 (55.2%), defined diarrhea correctly and its home treatment. Of the total number of mothers, 187(46.1%) had good knowledge about diarrheal disease. One hundred eighty two (44.8 %) of the mothers didn't correctly define diarrhea and its home treatment. Only, 179(44.1%) of them had knowledge on extra fluid. Of these, 128(31.5%) had good knowledge about amount of fluid to be given during diarrheal episodes.

About 131(32.3%) of mothers residing in the streets had good knowledge on ORS. Majority of them,271(66.7), have not heard about ORS. Among the mothers who know about ORS, 103(78.6) knew the correct method of ORS preparation and 122(93.1%) knew how often should it be given to the sick child.

Among the 166 (40.1%) who have good knowledge on continued feeding, 168(41.4%) replied frequent breast feeding must be longer at each feed and given during diarrhea episodes and 164 (40.4%) responded breast-feeding must be increased during the diarrheal episodes.

One hundred sixty four (40.4%) mothers have good knowledge on ORS and Zinc supplementations. Among the 172(42.4%), mothers who responded ORS and Zinc supplementation was effective for rehydration of the sick child, 156(90.7%) knew how many tables of Zinc the sick child have to take during diarrheal episodes. (Table -3).

*Table –3 Frequency of mothers residing in the streets on knowledge about home treatment of Under-five diarrhea in Addis Ababa Ethiopia, February -May 2016 (n=406)*

| **Variables** | **Category** | **Frequency N (%)** |
|---|---|---|
| Knowledge about diarrheal disease | Information about Diarrhea | 188(46.3) |
| | Definition of Diarrhea | 224 **(**55.2**)** |
| | Danger signs related to diarrhea | 160 **(**39.4**)** |
| | Action to be taken for child with diarrhea | 214 **(**52.7**)** |
| | Information on childhood diarrhea vaccination | 150 **(**36.9**)** |
| Knowledge of extra fluid | Amount of fluid to be given | 128 (31.5) |
| | Type of fluid to give for vomiting child | 108 (26.6) |
| | Recommended homemade fluid to be given for sick child | 122 (30) |
| Knowledge of ORS | Heard about ORS | 135 (33.3) |
| | Do we give ORS to the child during the diarrhea episode | 143 (35.2) |
| | reason(s) why ORS is given to children having diarrhea | 186 (45.8) |
| | correct method of ORS preparation | 103 (25.4) |
| | when ORS must be given | 118 (29.1) |
| | How often should we give the ORS | 122 (30.1) |
| | ORS solution to be given each time the child has lose stool | 114 (28.1) |
| | water to use when mixing ORS Solution | 124 (30.5) |
| Knowledge of continued feeding | frequent Breast feeding must be longer at each feed and given during diarrhea episodes | 168(41.4) |
| | increase breast-feeding during the diarrheal episodes | 164(40.4) |
| Knowledge of ORS and Zinc supplementations | ORS and Zinc supplementation is effective for rehydration of the sick child | 172(42.4) |
| | How many tables of Zinc will the sick child take | 156(38.4) |

Out of five categories of knowledge question, 163 (40.1%) mothers residing in the streets have good knowledge about home treatment. While, the rest 243 (59.9%) have poor knowledge for home treatment (Table-4).

*Table 4: The mean value and level of knowledge of selected mothers residing in the streets towards diarrhea home treatment in under-five children in Addis Ababa Ethiopia, February - May 2016 (n=406)*

| Dependent variable | Mean value | | Level of knowledge | Frequency (N) |
|---|---|---|---|---|
| | mothers answer correctly | mothers answer incorrectly | | |
| Knowledge | 165.4(40.7%) | 240.6(59.3%) | Good knowledge | 163 (40.1%) |
| | | | Poor knowledge | 243 (59.9%) |

Mother's knowledge on diarrheal diseases shows that majority of mothers have good knowledge on diarrheal diseases category and poor knowledge on knowledge of ORS category (Fig. 4)

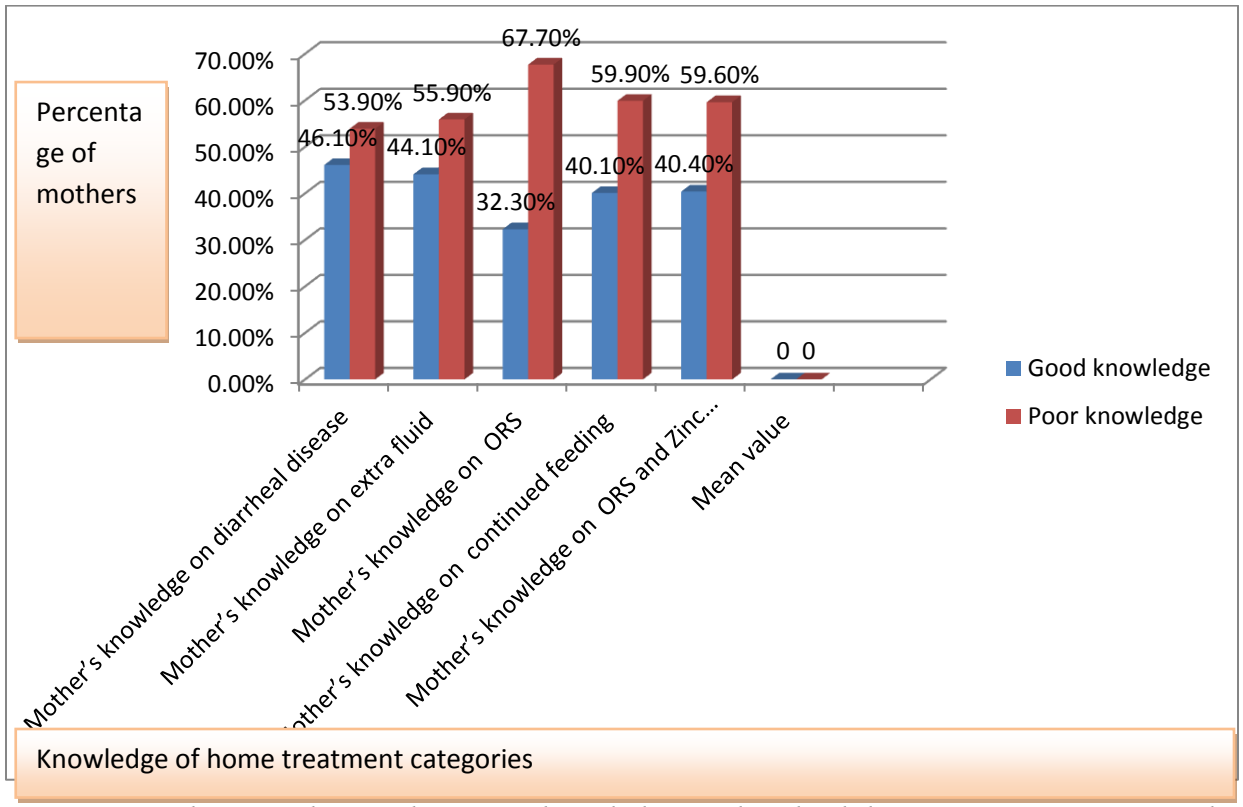


*Figure 4- Mothers residing in the streets knowledge on diarrheal disease management in under-five children in Addis Ababa Ethiopia, February -May 2016 (n=406)*

### 5.4 Mothers practice on diarrheal disease home treatment

Majority of participants, 289 (71.2%), have poor practice on diarrheal home treatment. Of the total number of mothers, 117(28.8%), had good practice on home treatment of under-five diarrheal disease.

Out of 406 mothers, about 119(29.3%) of mothers could not give anything to manage the diarrhea and reducing diarrhea morbidity (did not take any action). Among the actions, giving home remedies and taking the sick child to the health institution accounts for 196(48.3%) and 91(22.4 %), respectively. Among the 91(22.4%) mothers of the children with diarrhea were taken for advice or treatment to a health facility or provider, sixteen had their child admitted in health facility due to diarrhea, 27 (29.7%) brought their child less than one day of onset of diarrhea and 24 (26.4%) had taken enough advice on the management of diarrheal diseases by the health professional. Mothers who have their children taken the childhood diarrhea vaccination (Rota virus vaccination) accounts for 59 (14.5%).

Mothers residing in the streets who properly dispose their children's feces during diarrheal episodes was 34.2%.

Among the mothers residing in the streets, 68 (23.7%) and 81 (28.2 %) of mothers treated their children with ORS packets and RHF. Regarding increasing fluids, 32 (11.5%) mothers given increased fluids for their children with diarrhea. Regarding the practice on ORS and zinc supplementation; 23.7%, 8.01%, 12.2% and 7.7% had given ORS during diarrheal episodes, given zinc tables along with ORS during diarrheal episodes, correctly prepared ORS and correctly administered, respectively.

Regarding practice on continued feeding, less than half of the mothers 41(14.3%) were in favor of continuing breastfeeding during and had frequently breast fed during diarrhea episodes mothers had frequently (Table-5).

*Table –5 Frequency of selected mothers residing in the streets on Practice of home treatment of Under-five diarrhea in Addis Ababa Ethiopia, February -May 2016*

| **Variables** | **Category** | | **Frequency N (%)** |
|---|---|---|---|
| Health seeking practice | action taken for child with diarrhea | No action taken | 119(29.3) |
| | | Given home remedies | 196(48.3) |
| | | Taken to the health institution | 91(22.4) |
| | Mothers residing in the streets who vaccinated their children childhood diarrhea vaccination | | 59(14.5) |
| | child ever admitted in health facility due to diarrhea | | 16/91(17.6) |
| | When do you bring your child to the health facility from the onset of diarrhea?( less than one day of onset) | | 27/91(29.7) |
| | Do you take enough advice on the management of diarrheal diseases by the health professional?(Yes) | | 24/91(26.4) |
| Practice on proper disposal of children's feces | Properly dispose children's feces during diarrheal episodes | | 98/287(34.2) |
| Practice on giving extra fluid | Amount of fluid given to a child during diarrheal episodes(More than usual) | | 32/287(11.5) |
| | Recommended homemade fluid given for sick child | | 81/287(28.2) |
| | Fluid given to the sick child during diarrhea episode when vomiting | | 47/287 **(**16.4**)** |
| Practice on ORS and Zinc supplementation | Have you given ORS to the child during the diarrhea episode | | 68/287 **(**23.7**)** |
| | Have you given Zinc tablet for the child during the diarrhea episode | | 23/287 **(**8.01**)** |
| | Correctly prepared ORS(Water used when mixing ORS Solution) | | 35/287 **(**12.2**)** |
| | Correctly administered ORS(When did you give ORS ,How often did you give the ORS ,ORS solution was given each time the child has lose stool) | | 22/287 **(**7.7**)** |
| Practice on continued feeding | Mothers who frequently Breast feeding and given longer at each feed during diarrhea episodes | | 41/287 **(**14.3**)** |
| | Have you increased breast-feeding during the diarrheal episodes | | 41/287 **(**14.3**)** |

Out of five categories of practice question, 117 (28.8%) mothers residing in the streets have good practice about home treatment. While, the rest 289 (71.8 %) have poor knowledge for home treatment (Table-6).

*Table 6- The mean value and level of Practice in selected mothers residing in the streets towards diarrhea home treatment in under-five children in Addis Ababa Ethiopia, February - May 2016 (n=406)*

| **Dependent variable** | **Mean value** | | **Level of Practice** | **Frequency (N)** |
|---|---|---|---|---|
| | mothers answer correctly | mothers answer incorrectly | | |
| Practice | 114.76 (28.3 %) | 291.24 (71.7 %) | Good Practice | 117(28.8%) |
| | | | Poor Practice | 289 (71.2%) |

Mothers practice on diarrheal diseases shows that majority of mothers have good practice on giving extra fluid category and poor practice on continued feeding category (Fig. 5).

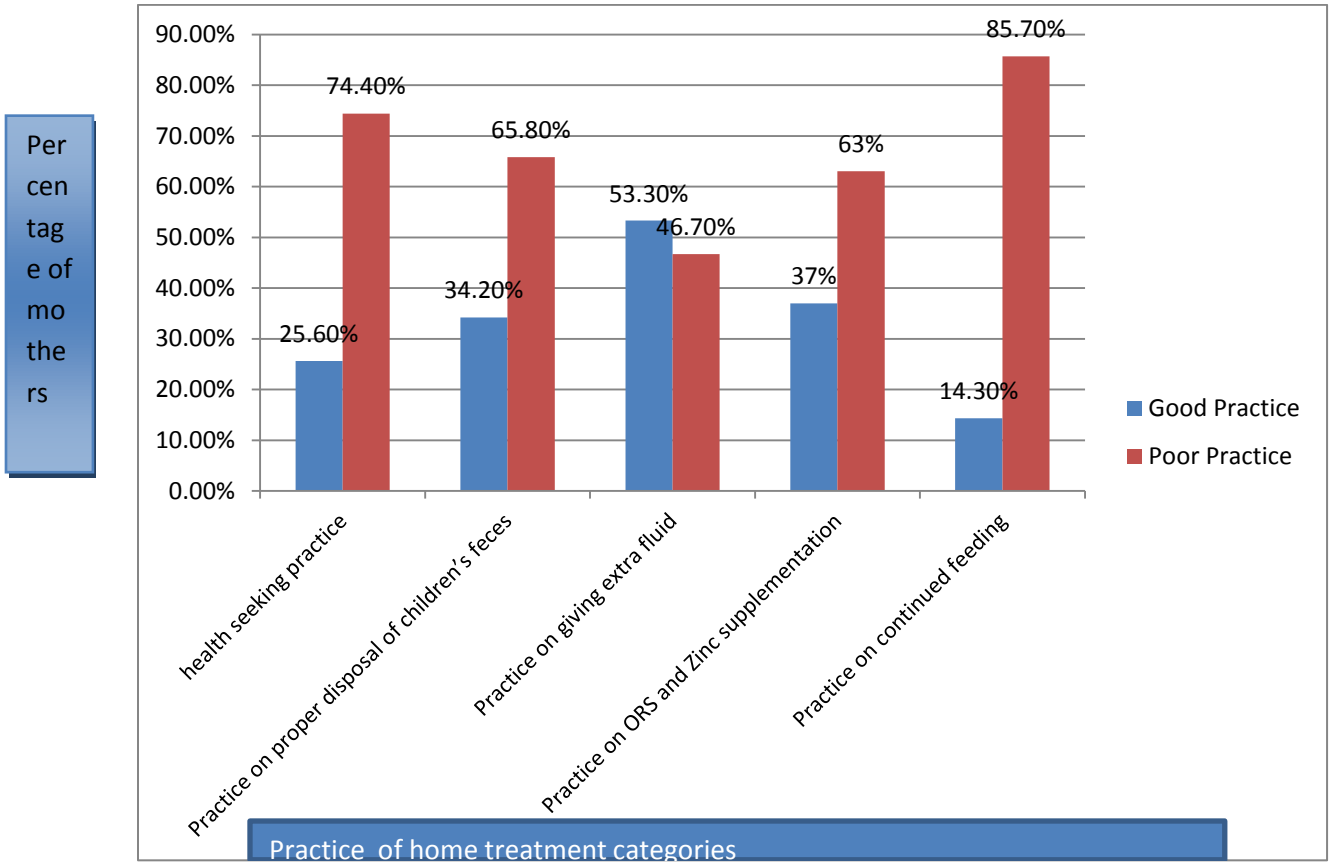


*Figure 5- Mothers residing in the streets Practice on diarrheal disease Home treatment in under-five children in Addis Ababa Ethiopia, February -May 2016 (n=406)*

### 5.5 Factors associated with under-five children diarrheal disease home treatment

Associated factors with knowledge of under five diarrheal home treatment were determined by fitting different predictors in to logistic regression model.

In the bivariate analysis, educational status and marital status had statistical significance, But age of the mothers was not showing any significant association with knowledge.

**Multivariate analysis on Knowledge of home treatment**

On multiple logistic regression analysis; educational status of mothers remained the predictors of knowledge on home treatment among the study participants.

Educational status had significant association knowledge on home treatment. Mothers who were able to read and write were 2 times more likely to develop good knowledge of home treatment than illiterate mothers.[AOR=1.767, 95% CI, (1.112, 2.807)](Table 7).

*Table –7 Association of the socio demographic variables with knowledge of home treatment of Diarrheal diseases among under- five of selected mothers residing in the streets of Addis Ababa, Ethiopia, February -May 2016 (n=406)*

| **Variable** | **Knowledge about Under-five diarrheal home treatment** | | **COR(95%CI)** | **AOR(95%CI)** |
|---|---|---|---|---|
| | **Good** | **Poor** | | |
| Age of Mothers residing in the streets | | | | |
| 15-24 years | 28 | 47 | 1 | |
| 25-34 years | 98 | 127 | 0.772(0.4512-1.321) | *** |
| 35 years and above | 37 | 69 | 1.111(0.601, 2.055) | *** |
| **Marital status** of Mothers residing in the streets | | | | |
| Single | 25 | 37 | 1 | 1 |
| Married | 33 | 79 | 1.618(1.604,1.908)** | 1.528(0.792,2.948) |
| Separated/Divorced/Widowed | 105 | 127 | 1.224(0.462,1.444) | 0.840(0.472,1.494) |
| **Educational level of mothers residing in the streets** | | | | |
| Illiterate | 61 | 70 | **1** | 1 |
| Read and write | 61 | 129 | 1.843(1.165,2.916)** | **1.767(1.112,2.807)*** |
| Elementary and above | 41 | 44 | 0.935(0.541,1.616) | 0.987(0.568,1.715) |

Note: 1 = reference * significant at P < 0.05 and confidence interval is 95% **-p-value<0.25

***-For age of mothers residing in the streets in bivariate analysis, P-value of age group 15-24 years and 35 years and above were above 0.25.Therefore,multivariate analysis was not done for age of the respondents.

Associated factors with practice of under five diarrheal home treatment were determined by fitting different predictors in to logistic regression model.

In the bivariate analysis, Age of participants and educational status were statistical significance, But marital status do not have any significant association with practice.

**Multivariate analysis on Practice of home treatment**

On multiple logistic regression analysis; age and educational status of mothers remained the predictors of practice on home treatment among the study participants.

Mothers aged from 25-34 years were 4 times more likely to develop good practice towards under five diarrheal home management [AOR=4.314, 95 % CI, (2.417, 7.701)] than mothers in the age category 15–24 years old. Mothers aged 35 years and above were 5 times more likely to develop good practice towards under five diarrheal home management [AOR=5.084, 95 % CI, (2.515,10.276)] than mothers in the age category 15–24 years old.

Mothers able to read and write were 4 times more likely to develop good practice of home treatment than illiterate mothers [AOR=3.921, 95% CI, (2.288,6.720)].Mothers who had elementary and above educational status were 2 times more likely to develop good practice towards home treatment than illiterate mothers [AOR=1.963, 95% CI, (1.060,3.635)] (Table-8).

*Table –8 Association of the socio demographic variables with practice on home treatment of Diarrheal diseases among under- five of selected mothers residing in the streets of Addis Ababa, Ethiopia, February -May 2016 (n=406)*

| **Variable** | **Practice of Under-five diarrheal home treatment** | | **COR(95%CI)** | **AOR(95%CI)** |
|---|---|---|---|---|
| | **Good** | **Poor** | | |
| Age of Mothers residing in the streets | | | | |
| 15-24 years | 43 | 32 | 1 | 1 |
| 25-34 years | 55 | 170 | 0.240(0.198,0.594)** | **4.314(2.417,7.701)*** |
| 35 years and above | 19 | 87 | 0.161(0.133,0.485)** | **5.084(2.515,10.276)*** |
| **Marital status** of Mothers residing in the streets | | | | |
| Single | 22 | 40 | 1 | |
| Married | 33 | 79 | 1.317(0.680,2.548) | *** |
| Separated/Divorced/Widowed | 62 | 170 | 1.508(0.831,2.737) | *** |
| **Educational level of mothers residing in the streets** | | | | |
| Illiterate | 61 | 70 | **1** | **1** |
| Read and write | 33 | 157 | 0.239(0.193,0.895)** | **3.921(2.288,6.720)*** |
| Elementary and above | 23 | 62 | 0.424(0.304,0.733)** | **1.963(1.060,3.635)*** |

*p-value <0.05 ** p-value <0.25 1-Reference

***-For marital status of mothers residing in the streets in bi-variate analysis, P-value of married mothers residing in the streets was above 0.25.Therefore,multivariate analysis was not done for them.

**Knowledge versus practice on home treatment**

In the bivariate analysis,knowledge of home treatment was statistical significance with practice.

**Multivariate analysis on Knowledge of home treatment**

On multiple logistic regression analysis; knowledge of home treatment remained the predictor of practice on home treatment among the study participants.

Mothers who have good knowledge about home treatment were 1.6 times more likely to develop good practice towards diarrheal home treatment. [AOR=1.562, 95% CI, (1.011, 2.411)](Table-9).

*Table –9 Association of the practice with Knowledge on home treatment of Diarrheal diseases among under- five of selected mothers residing in the streets of Addis Ababa, Ethiopia, February -May 2016 (n=406)*

| Variables | Level of Practice | | COR(95%CI) | AOR(95%CI) |
|---|---|---|---|---|
| Knowledge | Poor | Good | | |
| Poor | Practice | Practice | | |
| Knowledge | 61 | 182 | 1 | 1 |
| Good Knowledge | 56 | 107 | **0.640(0.415,0.989)*** | **1.562(1.011,2.411)*** |

*p-value <0.05 1-Reference

## 6 DISCUSSION

As mothers residing in the streets are part of the general population and as limited studies on street population could be found, comparison of results from this study was done with that of the general population from literature.

The prevalence of diarrhea among under-five index children in the preceding two weeks of the study was high (53.8 %). This may be due to seasonality of diarrheal episode cases and as indicated this is only point estimate prevalence. Even though the literatures are based on the general population, the magnitude of under-five diarrhea in this study was higher compared to Benishngul-Gumuz (22.1%), west Gojam zone (18%) Arba-Minch rural community (31%) ,eastern Ethiopia Kersa district and EDHS 2011 report (13%), (22.5%) [, 30, 31, 33,34, 35. Higher than studies conducted in Egypt (19.5%) and Ghana, (19.2%) [24, 25]. This difference could be mainly due to differences in the target group socio demographic, basic environmental and behavioral characteristics of the respondents.

Although mothers were aware of diarrhea and its home management, the level of awareness was 40.1% of mothers had good knowledge towards diarrhea home treatment in under-five children. This result is very low compared with studies conducted in Pakistan (75%). and Iran (64.3%) [21, 43]In this study; it was found that mother's educational level was the only socio economic factor which showed significant association with knowledge of under-five diarrhea home treatment which is different from results in the literatures. The difference in awareness of the mothers may be due to difference in Socio-cultural and difference in educational levels . High proportion of mother's response was observed on the purpose of giving ORS solution during diarrhea is to prevent the child from getting dehydrated. This study indicated that 30 % of the mothers were able to prepare home fluids to manage Diarrhea, although 70 % of mothers were unable to prepare home fluid of Diarrhea management. 25.4% of mothers knew the correct method of ORS preparation. On the Contrary, other study in Nepal showed that mothers had no knowledge on preparation of ORS. This might be due to mothers' exposure to diarrhea diseases and lack of proper home treatment lessons about the concerned matters. [40].

Mothers' education was significant factor to their knowledge about diarrhea home treatment. The study showed that the marital status was not associated with knowledge of home treatment. This was in contrary to the study done on Fenote Selam Town, West Gojjam Zone that widowed mothers had poor knowledge towards Diarrhea home treatment in under-five children as

compared to those mothers who were married [39] .

Although less than half of the mothers residing in the streets were aware of home management,almost half of the mothers did not take any treatment action during Diarrhea episodes.

According to this study, 28.8 % of mothers had good practice towards diarrhea home treatment in under-five children. This result is very low compared with studies conducted in Fenote Selam Town (45.9%) [39]. Results from the study showed less number of mothers (29.3%) who didn't take any action to manage diarrhea compared to study from Southern Ethiopia [36]. In the study there was low percentage of mothers that perform effective treatment of diarrheal disease, ORS and zinc supplementations [15]. There was low percentage of mothers with safe disposal practice and Health seeking practice [31]. Mothers are encouraged to continue feeding and increase the amount of liquids given to their children when they suffer from diarrhea illnesses but poor practice was observed from the study compared to other study [39].Even though there was low percent of mothers (23.7%) given ORS at home, very few mothers know the correct preparation and administration of the ORS. In general, most mothers have lack of experience, knowledge and awareness for practice of ORS preparation [26]. Among the factors considered for knowledge of under-five diarrheal home treatment; marital status and age were not significant. Educational level of being able to read and write was only significant factor for knowledge which was different from other study [39]. The Age and educational level of mothers residing in the streets were significantly associated with practice of under-five diarrheal home treatment. Educational level of being able to read and write and elemetary and above illiterate and age group 24-34 and 35 years and above was significant for practice of home treatment. On the contrary, mothers who have good knowledge about home treatment were more likely to develop good practice (1.562 times) [39].

# 7 STRENGTHS AND LIMITATIONS OF THE STUDY

## 7.1 Strengths

- ✓ The study was done on a marginalized or neglected group which can give direction to policy makers or others concerned to address the problem.
- ✓ Representative sample was used.
- ✓ Since no earlier studies were conducted on under-five diarrhea home treatment of mothers residing in the streets, this study will serve as at least a base line data.

## 7.2 Limitations

- ⇒ It was good if the study was complemented with qualitative part to obtain in-depth information.
- ⇒ Limited discussion and comparison was done due to insufficient literatures on study group.
- ⇒ The study design was cross-sectional study; it may not be strong enough to demonstrate direct cause and effect relationship between risk factors and outcome.
- ⇒ The results for information collected on prevalence through interview has subjectivity depending on the knowledge of diseases management of the respondent and there will be no validation of response to interview by physical examination or laboratory confirmation of illness and the discrepancy between response and physical examination or laboratory confirmation will be unknown.

# 8 CONCLUSION AND RECOMMENDATION

## 8.1 Conclusion

Taking the limitations in to consideration, this study has revealed some important findings related to under-five diarrheal home management among mothers residing in the streets in selected sub-cities. Findings from this study indicate that prevalence of diarrhea among under-five index children were higher among mothers residing in the streets compared to others. Less than half of the participants had good level of knowledge and less than one third of respondents had good practice of under five diarrheal home treatment. Educational status of participants was significant factor associated with knowledge of study participants where as age and educational status was significant factors associated with practice. Knowledge of home treatment has was significant association with the mothers residing in the streets under five diarrheal disease home treatment practices.

## 8.2 Recommendation

- Addis Ababa health bureau and Addis Ababa social affairs office in partnership with selected sub cities health offices should implement health extension program supported by health development army serve at the street community level for health promotion, disease prevention and basic curative services through implementation of health extension packages and integrated community case management of diarrhea could serve as a preventive measure for the occurrence of diarrhea.
- Addis Ababa health bureau and Addis Ababa social affairs office in partnership with other implementing stakeholders to review their health education strategies of addressing and strengthening street population oriented health programs. In addition, health promotion efforts could target this group to further improve the management of under-five diarrheal diseases especially in increasing awareness on mother's knowledge on some basic issues such as about causes of diarrhea and the associated dangers signs, prevention of dehydration during diarrheal episodes through the use of ORS and continued feeding so as to improve home-based case management of diarrheal diseases and initiate their practice.
- Addis Ababa health bureau and Addis Ababa social affairs office in partnership with selected sub cities educational offices could implement target based educational program so as to increase the mothers residing in the streets educational status .This will increase their knowledge and practice of under-five diarrhea home treatment among mothers residing in the streets.
- Any interested public health researcher could conduct advanced studies on prevalence of diarrheal diseases among under-five children of mothers residing in the streets, knowledge and practice of under-five diarrhea home treatment among mothers residing in the streets in all sub-cities of Addis Ababa using this study as a baseline.

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# 10 ANNEX-I ENGLISH VERSION OF THE QUESTIONNAIRE

**Questionnaire for the assessment of knowledge, practice and its associated factors of under-five children diarrhea home treatment among mothers residing in the streets in Addis Ababa, Ethiopia**

**Part 1: INFORMATION SHEET**

**Introduction and consent form**

Hello my name is ----------, I am here on behalf of the Addis Ababa University, School of Public Health. The study asses knowledge and practice of diarrhea diseases home treatment among street dwellers in Addis Ababa city government.

Dear respondents this booklet contains 4 sections and under each section there are number of questions. The results obtained from this questionnaire will be wholly used for research purpose to be conducted in partial fulfillment of Masters Degree in Public Health. I am going to ask you questions that are not that much difficult to answer. Your responses are completely confidential .Your name will not be written on these questionnaire, and will never be used in connection with any of the information you provide. You don't have to answer any question that you do not want to answer, and you may end to participate in the study any time you want.

However, your honest response to these questions will help us to better understand and indicate prevalence and associated home treatment knowledge and practice of diarrhea disease, to give clue for the prevention of the diseases and to give information for those who are interested for further study. The study will be helpful to understand the home treatment knowledge and practice of mothers residing in the streets that help the government and NGOs working on Street dwellers to plan health services.

Participation in this survey is voluntary, and if we should come to any question you don't want to answer, just let me know and I will go on to the next question; or you can stop the interview at any time. However, we hope you will participate in the survey since your views are important. It will take about 25 minutes. Your honest &genuine response to each question will play a major role in the attainment of the objective of the study.

Therefore, we thank you in advance and greatly appreciate your helping.

So, may I continue? 1. Yes……. 2.No…….

**Identification Serial number ----------**

**Part one: Socio demographic variables**

**NB: please use actual wording when ever interviewing**

| No | **Question** | **Possible Response** | **Skipping** | **Response code** |
|---|---|---|---|---|
| 101 | Age of the respondent | …… .. | | |
| 102 | Marital status of the respondent | 1.Married<br>2.Divorced<br>3.Separation<br>4.Single<br>5.Widowed | | |
| 103 | What is the highest level of Education the respondent has attained? | 1.Illiterate<br>2.Read and write<br>3.Elementary<br>4.High School<br>5.Above high school | | |
| 104 | Monthly income in Ethiopian birr | **…… …..birr** | | |
| 105 | How many children under-five do you have in this house hold? | **…… …..** | | |
| 106 | Family size | **…… …..** | | |
| 107 | Duration as street dwellers | …… months | | |

**Part 2-Prevalence of diarrhea**

| No | **Question** | **Possible Response** | **Skipping** | **Response code** |
|---|---|---|---|---|
| 201 | Does any of your under-five children experience diarrhea in the past 2 weeks? | 1.YES<br>2.NO | | |
| 202 | If yes, how many of your under-five children affected by the diarrhea diseases in the past 2 weeks? | …….. | | |

| | | | | |
|---|---|---|---|---|
| 203 | If more than one child is affected what is age and sex of the child? | Child A-<br>Age ……sex…….<br>Child B-age ……sex…….<br>Child C-age ……sex……. | | |

## Part 3: DIARRHEA HOME TREATMENT KNOWLEDGE

**NB: please use actual wording when ever interviewing**

| No | **Question** | **Possible Response** | **Skipping** | **Response code** |
|---|---|---|---|---|
| 301 | Do you have any information about diarrhea disease? | 1.Yes<br>2.No | | |
| 302 | What is the definition of diarrhea?<br>**More than one answer is possible** | 1/ More than 3 loose or watery stools in a day<br>2/ Increased thirst<br>3/ Irritability or restlessness<br>4 / Decreased liquid intake or inability to drink fluids<br>5/ Decreased activity or lethargy<br>6/ Loss of consciousness<br>7/ Decreased urination<br>8/ Sunken eyes<br>9/ Bloody diarrhea<br>10.dont know | | |
| 303 | Do you know any danger signs Related to diarrhea in a child? | a. Yes<br>b. No | | |
| 304 | What are some of the danger signs associated with diarrhea? (Tick as many as possible?)<br>**More than one answer is possible** | a. Becoming weak or lethargic frequent passing of diarrhea<br>b. Repeated vomiting / vomiting everywhere<br>c. Fever and blood in stool<br>d. Marked thirst of water<br>e. Poor feeding<br>f. Reduced urine output<br>g. Other, specify please | | |
| 305 | For the child with diarrhea, what | 1.No action | | |

| | | | | |
|---|---|---|---|---|
| | action would you take | 2.Give home remedies<br>3.Taken to traditional healer<br>4.Restricting of food and water<br>5.feed with cooked rice soup<br>6. give ORS<br>7.Take them to the health institution<br>8.Do nothing<br>9.Others | | |
| 306 | Do you have information about childhood diarrhea vaccination? | 1/ Yes<br>2/ NO | | |
| 307 | Which of the vaccinations do you know that protect the child from diarrhea? | a/Rota vaccine<br>b/Ors<br>c/zn supplements<br>d don't know<br>e/others | | |
| 308 | Have you heard about a fluid made from a special packet called (ORS)? | 1/ Yes<br>2/ NO | | **lemlem** |
| 309 | Do we give ORS to the child during the diarrhea episode? | 1.YES<br>2.NO | | |
| 310 | Mention the reason(s) why ORS is<br>given to children having diarrhea<br>**More than one answer is possible** | a. To increase the diarrhea<br>b. To decrease the diarrhea<br>c. To prevent dehydration<br>d. No idea<br>e. Other, specify | | |
| 311 | How ORS will be prepared (correct method of ORS preparation)?<br>**More than one answer is possible** | a. 1 sachet of ORS -300 mls<br>( 3 coke bottle) of water<br>b. 1 sachet of ORS -500 mls<br>( 1 small size of mineral bottle) of<br>water<br>c.1 sachet of ORS -600 mls<br>70<br>( 2 beer bottle) of water<br>d.1 sachet of ORS -750 mls<br>( 1 medium size of mineral bottle) of<br>water<br>e.1 sachet of ORS -1000mls<br>( 1 liter) of water<br>f. 1 sachet of ORS -1500mls<br>( 1.5 liters or large size of | | |

| | | | | |
|---|---|---|---|---|
| | | mineral<br>bottle) of water | | |
| 312 | After how long the diarrhea started, ORS must be given to the sick child? | a. Same day<br>b. Second day<br>c. Third day<br>d. Fourth day<br>e. I don't know | | |
| 313 | Do you know that ORS and Zinc supplementation is effective for rehydration of the sick child during the diarrhea episode? | 1/Yes<br>2/No | | |
| 314 | How many tables of Zinc will the sick child take during the diarrheal episodes? | ……. | | |
| 315 | Do you know that frequent Breast feeding must be longer at each feed and given during diarrhea episodes? | 1/Yes<br>2/No | | |
| 316 | Did you have to increase breast-feeding your child during the diarrheal episodes? | 1.Yes<br>2.NO | | |
| 317 | What available recommended Home-made fluid / home base oral rehydration fluid will be given to a Child with diarrhea? ( Tick as many as possible) | a. Sugar and salt solution<br>b. Salt with water<br>c. Rice water<br>d. Soup<br>e. Juice<br>f. Other, specify……. | | |
| 318 | What amount of liquid should be give to a child with diarrhea compared to healthy situation: | 1/ less than usual<br>2/ greater than usual<br>3/ similar<br>4/ nothing given | | **Usual is the healthy situation before getting sick** |
| 319 | What kind of fluid will be given to the sick child during diarrhea episode when vomiting?<br>**More than one answer is possible** | 1/ Water<br>2/ Rice<br>3/ Tea<br>4/ Juice<br>5/Withheld food<br>6/Others | | |

| | | | | |
|---|---|---|---|---|
| 320 | How often should we give the ORS to the sick child?<br>**More than one answer is possible** | a. Once a day<br>b. 2 – 3 times a day<br>c. 4 – 5 times a day<br>d. 6 & above times a day<br>e. After the passing of every loose<br>stool<br>f. No idea | | |
| 321 | How much ORS solution should we give the sick child each time the child<br>Has lose stool?<br>**More than one answer is possible** | a. As much as the child can drink<br>b. Coffee cup of 100ml<br>c. Don't know / can't answer<br>d. Other ( specify | | |
| 322 | What water do we use to mix ORS<br>Solution? | a. Previously boiled and cooled water<br>b. Drinking water<br>c. Any available water<br>d. Highland water | | |

**Part 4: DIARRHEA HOME TREATMENT PRACTICE**

**NB: please use actual wording when ever interviewing**

| No | **Question** | **Possible Response** | **Skipping** | **Response code** |
|---|---|---|---|---|
| 401 | Did you ever breast-feed your child? | 1.Yes<br>2.NO | | **If no skip to 304** |
| 402 | If yes, What is the breast feeding history of the child? | 1./Partial<br>2/Exclusive | | |
| 403 | For the child with diarrhea, what action was taken by you | 1.No action taken<br>2.Give home remedies<br>3.Taken to traditional healer<br>4.Restricting of food and water<br>5.feed with cooked rice soup<br>6. give ORS<br>7.Take them to the health institution<br>8.Do nothing<br>9.Others | | |
| 404 | Did you seek medical care outside | 1/ Yes | | **If yes** |

| | | | | |
|---|---|---|---|---|
| | your settlement? | 2/ No | | **skip to 406** |
| 405 | If you do not seek care outside your home, what is the reason? | 1/ Health facility too far from house<br>2/ Unable to find transport<br>3/ Cost for travel too high<br>4/ Cost for treatment too high<br>5/ Other children at home who could not be left alone<br>6/ Other____ | | |
| 406 | For the child with diarrhea, Was the child taken to the health Facility? | 1.Yes<br>2.No | | |
| 407 | When do you bring your child to the health facility from the onset of diarrhea? | 1/ within one days of onset<br>2/ less than one day of onset<br>3/ greater than one days of onset<br>4/ if other specify…… | | |
| 408 | Do you have enough advice on the management of diarrheal diseases by the health professional? | 1/Yes<br>2/No | | |
| 409 | If Yes, What kind of advice was given for the sick child by the health professional? | 1/ Return of the Health facility if the child develops fever<br>2/ Return of the Health facility if the child getting weaker<br>3/ Return of the Health facility if the child diarrhea doesn't decrease within 3 days<br>4/ if other specify…… | | |
| 410 | Did your child ever admitted in health facility due to diarrhea? | 1/ Yes<br>2/ No | | |
| 411 | What available recommended Home-made fluid / home base oral rehydration fluid was given to a child with diarrhea? ( Tick as many as possible) | a. Sugar and salt solution<br>b. Salt with water<br>c. Rice water<br>d. Soup<br>e. Juice<br>f. Other, specify……. | | |
| 412 | When you compare the amount of liquid you give during the illness with the healthy situation: | 1/ less than usual<br>2/ greater than usual<br>3/ similar<br>4/ nothing given | | |

| | | | | |
|---|---|---|---|---|
| 413 | What kind of fluid is given to the sick child during diarrhea episode when vomiting? | 1/ Water<br>2/ Rice<br>3/ Tea<br>4/ Juice<br>5/Withheld food<br>6/Others | | |
| 414 | Does your child taken the childhood diarrhea vaccination? | 1/ Yes<br>2/No | | |
| 415 | IS ORS given to the child during the diarrhea episode? | 1.YES<br>2.NO | | |
| 416 | How often did you give the ORS to the sick child? | a. Once a day<br>b. 2 – 3 times a day<br>c. 4 – 5 times a day<br>d. 6 & above times a day<br>e. After the passing of every loose<br>stool<br>f. No idea | | |
| 417 | How much ORS solution did you give the child each time the child Has lose stool? | a. As much as the child can drink<br>b. Coffee cup of 100ml<br>c. Don't know / can't answer<br>d. Other ( specify | | |
| 418 | What water do you use to mix ORS<br>Solution? | a. Previously boiled and cooled<br>water<br>b. Drinking water<br>c. Any available water<br>d. Highland water | | |

This is the end of the interview

THANK YOU!

Date of the interview----------

Name of the interviewer---------- Signature----------

Name of the supervisor…… Signature……

## 11 ANNEX-II AMHARIC VERSION OF THE QUESTIONNAIRE

**በጎዳና የሚኖሩ እናቶች ስለተቅማጥ ህመም በሚከሰት ወቅት ያላቸው የቤት ውስጥ የህክምና አሰጣጥ ዕውቀት እና የህመሙን ተያያዥ ምክንያቶች ለማወቅ የተዘጋጀ የጥናት መጠይቅ፣ አዲስአበባ** 2008

**<u>የጥናቱመግለጫ</u>**

**ጤና ይስጥልኝ ስሜ----------ይባላል፡፡ በጥናቱ ውስጥ በመረጃ ሰብሳቢነት ነው የምሠራው፡፡ የጥናቱ ርዕስ "በአዲስ አበባ ጎዳና የሚኖሩ እናቶች ከአምስት ዓመት በታች ለሆኑ ልጆቻቸው የተቅማጥ ህመም ሲከሰት በቤት ውስጥ የሚደረግ የህክምና እርዳታ እውቀትና አተገባበር እንዲሁም የህመሙን ተያያዥ ችግሮች " ያለውን ገፅታ ለማወቅ ሲሆን ይህም በአ/አ ዩንቨርስቲ የህ/ሰብ ጤና ክፍል የድህረ ምረቃ ኘሮግራም ማሟያ የሚሆን ነው፡፡**
**ውድ ተሳታፊዎች መጠይቁ አራት ክፍሎች ያለው ሲሆን በእያንዳንዱ ክፍል ስር ዝርዝር ጥያቄዎች ይገኛሉ፡፡ ከመጠይቁ የሚገኘው ውጤት በሙሉ ለመመረቂያ ጥናቱ ብቻ የሚውል ነው፡፡ ጥናቱ በህፃናት ተቅማጥ ህመም በቤት ውስጥ አያያዝ ጉድለት አማካኝነት የሚያደርሱትን የሞትና የህመም ሁኔታ ለመቀነስ ይረዳል፡፡ በመጠይቁ ያሉት ጥያቄዎች ቀላል ሲሆኑ መልስዎቹ ምስጢራዊነት የተጠበቀ ነው፡፡ ተሳትፎአችሁ በፈቃደኝነት ላይ የተመሠረተ ነው፡፡ በመጠይቁ ውስጥ በጣም ሚስጢራዊ የሆኑ እና ግላዊ የሆኑ ጉዳዬች አልተካተቱም፡፡ያላችሁን ተሞክሮ ብታካፍሉን የጠቀስናቸውንና ሌሎችንም ተያያዥ የሆኑ ችግር ለመፍታት እጅግ በጣም ጠቃሚ ነው፡፡ጥያቄውን ለመሙላት** 25 **ደቂቃ ያህል ሊወስድ ይችላል፡፡**

**ጥናቱን አስመልክቶ እርስዎ የሚሰጡት ማንኛውም መረጃ በሚስጢር የሚጠበቅ በመሆኑ በማንኛውም መንገድ ለሶስተኛ አካል አሳልፎ አይሰጥም ወይም አይጋለጥም፡፡ ማንነትዎ እንዳይታወቅም ስምዎ በጥያቄው ወረቀት ላይ አይመዘገብም መመለስ የማይፈልጉትን ጥያቄ መተውና በማንኛውም ጊዜ በጥናቱ ላይ ያሎትን ተሳትፎ ማቋረጥ ይችላሉ፡፡ነገር ግን በጥናቱ ላይ በመሳተፍዎ እና ለሚጠየቁት ጥያቄ በዕውቀት ላይ የተመሠረተና ተገቢ የሆነ መረጃ መስጠትዎ በህመሙ በሚደረጉ የጤና አገልግሎቶች ዙርያ እንዲሁም ለሚደረጉት አገልግሎቶች መስፋፋት ከፍተኛ አስተዋጽዖ ያበረክታሉ፡፡ በመጨረሻም ለሚሰጡት ለየትኛውም አይነት ምላሽ አመሰግናለሁ፡፡**

**ግልጽነው? ያልገባሽነገርአለ?**

**ክፍል 2-የስምምነት መግለጫ ቅጽ**

**እኔ ተሳታፊ የሆንኩ ከላይ የተገለጹትን በሙሉ ሰምቼአለሁ፤ አላማውንና ጥቅሙንም ተረድቼአለሁ፤ሚስጥር እንደሚጠበቅና ለሶስተኛ አካል እንደማይተላለፍ ተገንዝቤአለሁ፤ ስለዚህ በጥናቱ ለመሳተፍ**

**ፈቃደኛ ነኝ አዎ እሳተፋለሁ.....**

**ፈቃደኛአይደለሁምአልሳተፍም.....**

**መረጃ ሰብሳቢ ስም----------ፊርማ----------ቀን.....**

የመጠይቅ መለያ ቁጥር----------

**ክፍል አንድ:ስነ ህዝብና ማህበራዊ ጉዳዮችን የሚለከት መረጃ**

ማሳሰቢያ: ቃለ መጠይቁን ሲሞሉ ትክክለኛ የመልስ ሰጪውን ቃል እን□ለ □መ□□ቡ::

| ተ.ቁ. | ጥያቄ | መልስ | ኮድ | ወደ ... ይለፉ |
|---|---|---|---|---|
| 101 | ዕድሜሽ ስንት ነው | ..... | | |
| 102 | የጋብቻ ሁኔታ | 1.ያገባች<br>2.የፈታች<br>3.የተለያዩ<br>4.ያላገባች<br>5.ባሏየሞተባት | | |
| 103 | የትምህርት ደረጃ | 1.ያልተማረ<br>2.ማንበብናመፃፍየሚችል<br>3.አንደኛደረጃ<br>4.ሁለተኛደረጃ<br>5.ከሁለተኛደረጃ በላይ | | |
| 104 | በአማካኝ በወር ምን ያህል ብር ታገኛለሽ | ..... | | |
| 105 | ስንት ከአምስት አመት በታች ልጆች አሉሽ | ---------- | | |
| 106 | የቤተሰብ ብዛት | ..... | | |
| 107 | ጎዳና ላይ ከወጡ ምን ያህል ጊዜ ሆኖት | ..... | | |

**ክፍል ሁለት-የተቅማጥ በሽታ መከሰት መረጃ**

ማሳሰቢያ: ቃለ መጠይቁን ሲሞሉ ትክክለኛ የመልስ ሰጪውን ቃል እን□ለ □መ□□ቡ::

| ተ.ቁ. | ጥያቄ | መልስ | ኮድ | ወደ ... ይለፉ |
|---|---|---|---|---|
| 201 | ከአምስትበታችየሆኑልጆችዎበተቅማጥ ባለፈው 1 ወርውስጥታመውያውቃሉ? | 1.አዎ<br>2.አይደለም | | |
| 202 | መልስዎ አዎ ከሆነ ምን ያህል ከአምስት በታች የሆኑ ልጆችዎ በተቅማጥ ባለፈው ሁለት ሳምንታት ውስጥ ታመው ያውቃሉ? | ..... | | |
| 203 | ከአንድልጅበላይከታመመዕድሜናያ ታቢገልፁ? | ህፃን1-እድሜ..... ፃታ.....<br>ህፃን2--እድሜ..... ፃታ.....<br>ህፃን3-እድሜ..... ፃታ..... | | |

**ክፍል ሶስት-የተቅማጥ የቤት ህክምና ግንዛቤ**

**ማሳሰቢያ፡ ቃለ መጠይቁን ሲሞሉ ትክክለኛ የመልስ ሰጪውን ቃል እን□ለ □መ□□ቡ::**

| ተ.ቁ. | ጥያቄ | መልስ | ኮድ | ወደ ... ይለፉ |
|---|---|---|---|---|
| 301 | ስለ ተቅማጥ የሚውቁት ነገር አለ? | 1.አዎ<br>2.አይደለም | | |
| 302 | የተቅማጥ በሽታምንድነው ብለው ያስባሉ?<br>(ከአንድ በላይ መልስ መምረጥ ይቻላል) | 1/በቀን ውስጥ ከ3 ጊዜ በላይ ቀጭን ተቅማጥ ሲኖር<br>2/ተደጋጋሚ የውሃ ጥም ሲታይ<br>3/ መቅበጥበጥ<br>4 / የፊሳሽ የመውሰድ ፍላጎት ማጣት<br>5/የድካም ስሜት መታየት<br>6/ራስን መሳት<br>7/ የሽንት መጠን መቀነስ<br>8/ የአይን መጎድጎድ<br>9/ደም የተቀላቀለበት ተቅማጥ<br>10/አላውቅም | | |
| 303 | የተቅማጥ በሽታአስከፊነቱን/ ከፍተኛ ጉዳት ማስከተሉን የሚያመላክቱ ምልክቶችን ያውቃሉ? | 1. .የህፃኑሁኔታበማየት<br>2.ከህመሙጋርየተያያዙሁኔታዎችን በማየት(ማስመለስ)<br>3.ህፃኑምግብአልበላምማለቱ<br>3.በወጣውተቅማጥመጠን<br>4.ለረጅምጊዜየቆያተቅማጥከሆነ<br>5.ህፃኑአይኑመጎድጎድ<br>6. .ሌላከሆነይግለፁ____ | | |
| 304 | መልስዎ አዎ ከሆነ ከተቅማጥ ጋር የተያያዙ አደገኛ ምልክቶችን ቢገልፁልን? | 1. ደካማ መሆንና ቶሎ ቶሎ አይነምድር መውጣት<br>2. ተ□□□ሚ ማስመለስ/በ□ቦ□ □ማስመለስ::<br>3.ትኩሳትና ደም ያለው ተቅማዓ<br>4. ተ□□□ሚ □ሃ ዓ ም<br>5. የምግብ ፍላጎት ማጣት<br>6. የሽንት መቀነስ<br>7. ሌሎች ካሉ ይግለጹ | | |

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|---|---|---|---|---|
| 304 | ልጅዎተቅማጥበያዘውወቅትምንእርምጃ ይወስዳሉ | 1 ምንምአላደረኩም<br>2.ከልምድ ያገኘሁትን መፍትሄ እርምጃ<br>3.የባህል መድሃኒት አዋቂ ጋር<br>4.የተቀቀለ ሩዝ ማብላት<br>5.ኦርኤስ ንጥረነገር መስጠት<br>6.ወደ ጤና ተቋም መውሰድ<br>6.ምንም አላደርግም | | |
| 305 | ስለ ተቅማጥ በሽታ ክትባት መረጃው አልዎት? | 1.አዎ<br>2.አይደለም | | |
| 306 | ህጻናትን ከተቅማጥ የሚያድነው የትኛው የክትባት ዓይነት ነው? | ሀ. ሮታ ክትባት<br>ለ. ኦ አር ኤስ<br>ሐ. የዚንክ ንጥረነገር<br>መ. አላውቅም<br>ሠ. ሌሎች | | |
| 307 | ስለ ኦ.ር.ኤስ ንጥረነገር ሰምተው ያውቃሉ? | 1.አዎ<br>2.አይደለም | | |
| 308 | የኦ.ር.ኤስ ንጥረነገር በህመሙ ወቅት ለታመመው ልጅ ይሰጣል? | 1.አዎ<br>2.አይደለም | | |
| 309 | የኦ.ር.ኤስ ንጥረነገር ለታመው ልጅ መስጠት ለምን ያስፈልጋል?(ከአንድ በላይ መልስ መምረጥ ይቻላል) | 1. ተቅማጡን ለመጨመር<br>2. ተቅማጡን ለመቀነስ<br>3. የወጣውን ፈሳሽ ለመተካ<br>4. አላውቅም<br>5. ሌሎች ካሉ ይግለጹ | | |
| 310 | የኦር ኤስ ንጥረነገር እንዴት ይዘጋጃል<br>ከአንድ በላይ መምረጥ ይቻላል | 1.አንዱን እሽግ በሶስት የኮካኮሊ ጠርሙስ መበጥበጥ<br>2.አንዱን እሽግ በግማሽ ሉትር ውሀ መበጥበጥ<br>3. አንዱን እሽግ በሁሀት የቢራ ጠርሙስ ውሀ መበጥበጥ<br>4. አንዱን እሽግ በመካከለኛ ከግማሽ ሉትር በሚበሌጥ ውሀ መበጥበጥ<br>5. አንዱን እሽግ በአንዴ ሉትር ተኩል ውሀ መበጥበጥ<br>6. አንዱን እሽግ በአንድ ሊትር ውሀ መበጥበጥ | | |
| 311 | ተቅማጡ ከጀመረ ከስንት ጊዜ በኋላ ነው ኦ አር ኤስ ለህጻኑ | 1. በዚያው ቀን<br>2. በሁለተኛው ቀን | | |

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| | መሰጠት ያለበት? | 3. በሶስተኛው ቀን<br>4. በአራተኛው ቀን<br>5. አላውቅም | | |
| 312 | ህጻናት ተቅማጥ በሚይዛቸው ጊዜ ኦ አር ኤስ እና ዚንክ ሰኘ ሊመንት ሲሰጣቸው ከህጻናቱ የሚወጣውን ፈሳሽ ለመተካት እን□ሚረ□ ጸ□ቃሉ | 1. አዎ<br>2.አይደለም | | |
| 313 | በተቅማጥ የተያዘ ህጻን ስንት እንክብል የዚንክ መድሃኒት □ሰ□ል? | ..... | | |
| 314 | በተቅማጥ ለተያዙ ህጻናት በተደጋጋሚ ጡትን ማጥባት አስፈላጊእንደሆነ ያውቃሉ? | 1 አዎ<br>2 .አይደለም | | |
| 315 | ልጅዎ ተቅማጥ ሲይዘው ጡት የሚያጠቡበትን ጊዜ በመፈ መር □□□መ□ ማጥባት እንዳለብዎት ግንዛቤ አግኝተዋል? | 1. አዎ<br>2. አይደለም | | |
| 316 | በቤት ውስጥ ከሚዘጋጁ በተቅማጥ የወጣውን ፈሳሽ ከሚመልሱ የትኛው መሰጠት አለበት ብለው ያስባሉ(ከአንድ በላይ መልስ መስጠት ይቻላል) | 1. የጨው ና የስኳር ውህድ<br>2. የጨውና የውሀ ውህድ<br>3. የሩዝ ውሀ<br>4. አጥሚት<br>5. ጁስ<br>6. ሌላ ካለ ይጠቀስ | | |
| 317 | ተቅማጥ ለያዘው ህጻን ከወትሮው/ከደህናው ጊዜ/ ሲነጻጸር ምን ያህል ፈሳሽ ሊያገኝ ይገባዋል: /ወትሮ ማለት ህጻኑ ከመ□መሙ በፊት ይወስደው የነበረ መጠን ነው/ | 1. ከበፊቱ ያነሰ<br>2. ከበፊቱ የበለጠ<br>3. ከበፊቱ ጋር ተመሳሳይ<br>4. ምንም አይሰጠው | | |
| 318 | ተቅማጥ ለያዘውና ለሚያስመልሰው ህጻን ምን ዓይነት ፈሳሽ መሰጠት አለበት /ከአንድ በላይ መልስ መምረጥ ይቻላል | 1. □ሃ<br>2. □ሯ□ □ሃ<br>3. ሻ□<br>4. □ ማቂ<br>5. ምግብ መከልከል<br>6. ሌላ ካለ ይጠቀስ | | |
| 319 | በቀን ውስጥ ምን ያህል ጊዜ የኦ ር ኤስ ንጥረ ነገር መሰጠት አለበት<br>/Ÿ›"É uLA SMe SU[Ø A‰LM | 1. አንዴ ግዜ ብቻ<br>2.ከሁለት እስከ ሶስት ግዜ ብቻ<br>3. ከአራት እስከ አምስት ግዜ<br>4. ስድስትና ከዛም በላይ<br>5. ባስቀመጠው ቁጥር<br>6. አላውቅም | | |
| 320 | ምን ያህል የኦ ር ኤስ ንጥረ | 1. ህፃኑ አስከሚበቃው ድረስ | | |

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| | ነገር የታመመው ልጅ ባስቀመጠው ቁጥር መውሰድ አለበት ብለው ያስባሉ/Ÿ›"É uLA SMe SU[Ø A‰LM | 2.አንዴ የቡና ስኒ 100 ሲሲ<br>3. አላውቅም<br>4. ሌላ ካለ ይጠቀስ---------- | | |
| 321 | የኦ ር ኤስ ንጥረነገር ዱቄቱን በምን አይነት ውሃ መበጥበጥ አለበት ብለው ያስባሉ | 1.ፈልቶ በቀዘቀዘ ውሃ<br>2.ለመጠጥ የምንጠቀምበት ውሃ<br>3. የተገኘውን ውሃ<br>4.የታሸገ ውሃ | | |

## ክፍል 4፡ የተቅማጥ የቤት ህክምናአተገባበር በተመለከተ

ማሳሰቢያ: ቃለ መጠይቁን ሲሞሉ ትክክለኛ የመልስ ሰጪውን ቃል እን□ለ □መ□□ቡ::

| ተ.ቁ. | ጥያቄ | መልስ | ኮድ | ወደ ... ይለፉ |
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| 401 | ልጆዎትን የጡት ወትት መግበውት ያውቃሉ? | ሀ. አዎ<br>ለየለም | | |
| 402 | ለጥያቄ 401 መልሰዎ አዎ ከሆነ የልጆዎ የጡት ወትት አመጋገብ ሁኔታ እንዴት ነው? | ሀ.በከፊል/አልፎ አለፎ የጡት ወትት<br>ለ.ሙሉ በሙሉ የጡት ወትት ብቻ | | |
| 403 | ተቅማጥ ለታመው ልጆዎ ምን ዓይነት ህክምና አደርገው ነበር? | ሀ. ምን ዓይነት ህክምና አልተደረገም<br>ለ.የቤት ውስጥ ህክምና /የመዳኒት ፈውስ ተደርጓል<br>ሐ.ወደ ባህላዊ ሀኪም ተውስዷል<br>መ.ምግብ እና ውሀ መከልከል<br>ሠ.የበሰለ የሩዝ ሾርባ መመገብ<br>ረ.ORS መስጠት<br>ሰ.ወደ ጤና ጣቢያ መውሰድ<br>ሸ.ምንም ነገር አልተደረግም<br>ቀ. ሌሎች------ | | |
| 404 | ከመኖሪያዎ አካባቢዎ/ቤተዎ ውጭ የሜዲካል ህክምና ፈልገወል (ፈለገው | ሀ. አዎ<br>ለየለም | | If yes skip to |

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| | ነበር)? | | | 316 አዎ ከሆነ ጥያቄ 316 ይተው |
| 405 | ከቤተዎ ውጭ የሜዲካል ህክምና ፈለገው ካልነበረ ምክኒያቶ ምን ነበር? | ሀ.የህክምና አገልግሎቱ ከቤት በጣም ስለሚርቅ<br>ለ.ትራንስፖርት ስለማይገኝ<br>ሐ.የትራንስፖርት ወጭ በጣም ክተኛ ስለሆነ<br>መ.የህክምና ወጭ በጣም ክተኛ ስለሆነ<br>ሠ.ሌሎች ልጆች ከቤት ብቻቸውን መተው ስለማይቻል<br>ረ.ሌሎች ምክንያት ካለ.___ | | |
| 406 | ተቅማጥ የታመው ልጀዎ ወደ ጤና ተቋም ተወስዶ ነበር? | ሀ. አዎ<br>ለየለም | | |
| 407 | ተቅማጥ የታመው ልጀዎ ተቅማጥ እንደጀመረው ወደ ጤና ተቋም የወሰዱት መቼ ነበር? | ሀ.እንደጀመረው በ አንድ ቀን ውስጥ<br>ለ.እንደጀመረው ከአንድ ቀን ባነሰ ጊዜ ወስጥ<br>ሐ.እንደጀመረው ከአንድ ቀን በበለጠ ጊዜ ወስጥ<br>መ.ሌላ ካለ ይጥቀሱ..... | | |
| 408 | ስለተቅማጥ በሽታዎች መከላከል እና መቆጣጠር በጤና ባለሙያ በቂ የምክር አገልግሎት አለዎት? | ሀ. አዎ<br>ለየለም | | |
| 409 | መልሶ አዎ ከሆነ ስለ ታመመው ልጀዎ ምን ዓይነት የምክር አገልግሎት በጤና ባለሙያ አግኝተው ነበር? | ሀ.ልጁ መቀቱ እጨመረ ከሄደ መልሶ ወደ ጤና ተቋሙ ይዞ መምጣት<br>ለ.ልጁ አቅሙ እየቀነሰ/እየደከመ ከሄደ መልሶ ወደ ጤና ተቋሙ ይዞ | | |

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| | | መምጣት<br>ሐ.የልጁ የተቅማጥ ህመም በሶስት ቀን ውስጥ ካልቀነሰ መልሶ ወደ ጤና ተቋሙ ይዞ መምጣት<br>መ.ሌላ ካለ ይጥቀሱ..... | | |
| 410 | **ልጅዎ በተቅማጥ ምክኒት ወደ ጤና ተቋም ተወስዶ ታክሞ ያውቃል?** | ሀ. አዎ<br>ለ.የለም | | |
| 411 | በቤት የተሰራ ፈሳሽ/የቤት ፈሳሽ የሚመልስ በአፍ የሚወሰድ ለልጁ ምን ተሰቶ ነበር (መለስወን ምልክት ያድረጉ) | ሀ. የሚሚ ስኳር እና ጨው<br>ለ. በውሀ የሚሚ ስኳር<br>ሐ. የሩዝ ውሀ<br>መ. ሾርባ<br>ሠ. ጁስ<br>ረ.ሌላ ካለ ይጥቀሱ | | |
| 412 | በህመሙ ጊዜ የተሰጠውን ፈሳሽ ከጤነኛው ጊዜ ጋር ሲነፃፀር ምን ያህል ነው | ሀ.ከተለመደው በታች<br>ለ.ከተለመደው በላይ<br>ሐ.ተመሳሳይ<br>ሠ.ምንም አልተሰጠም | | |
| 413 | ልጅዎ በትቅማጥ ታሞ ሲያስቀምጠው በሚስታውክበት ግዜ ለታመመው ልጅ ምን ዓይነት ፈሰሽ ይሰጠዋል? | ሀ. ውሀ<br>ለ.ሩዝ<br>ሐ ሻይ<br>መ. ጁስ<br>ሠ.ምግብ መከልከል<br>ረ.ሌሎች ካለ.---- | | |
| 414 | ልጅዎ ይፃን የትቅማጥ በሽታ መከላከያ ክትባተ ወስዷል? | ሀ አዎ<br>ለ.የለም | | |
| 415 | ልጅዎ በትቅማ ታሞ ሲያስቀምጠው ለልጅዎORS ይሰጠዋል? | ሀ አዎ<br>ለ.የለም | | |
| 416 | ORS ለምን ያህል ጊዜ ለታመመው ልጅዎ ተሰታዋል? | ሀ. በቀን አንድ ጊዜ<br>ለ. በቀን 2-3 ጊዜ<br>ሐ. በቀን 3-5 | | |

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|---|---|---|---|---|
| | | ጊዜ<br>መ› በቀን 6 ጊዜ እና ከዚያ በላይ<br><br>ሰ. ወዲያውኑ ከእንዳንዱ ተቅማጥ/ሰገራ በኋላ<br>ሸ. ለዚህ ሀሳብ የለኝም | | |
| 417 | ለእያንዳንዱ የልጅዎ ሰገራ ከወጣ በኋላ ምን ያህል ORS ፈሳሽ/ሶሉሽን ሰተውታል? | ሀ. ልጁ መጠጣት የሚችለውን ያህል<br>ለ. 100 ሚሊ ሊትር በሚዘው አንድ የቡና ስኒ<br>ሐ. ግምቱን አላውቅም/መልሱን መመለስ አልችለም/<br>መ. ሌሎች ካለ.-- | | |
| 418 | ORSን ለመቀላቀል/ለማሟሟት/ለመበጥበጥ የሚጠቀሙት ውሃ ምንድን ነው? | ሀ. ቀደም ብሎ የፈላ እና የቀዘቀዘ ውሀ<br>ለ. የመጠጥ ውሀ<br>ሐ. ማናቸውንም የተገኘ ውሀ<br>መ.የሀይላንድ/የታሸገ ውሀ | | |

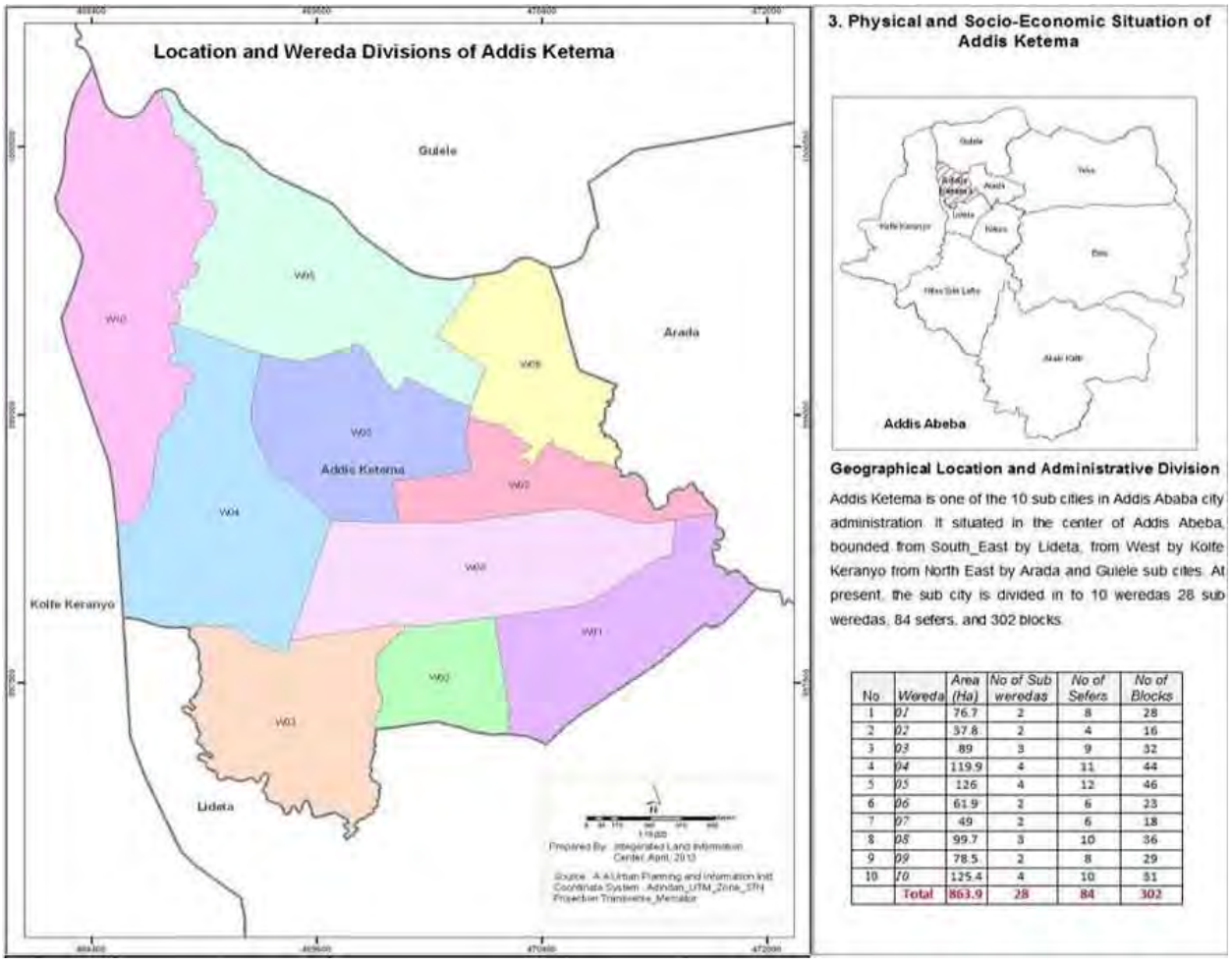
**ቃለ ምልልሱ አልቋል አመሰግናለሁ**

**መረጃ የተሰበሰበበት ቀን----------**

**መረጃ ሰብሳቢው ስም---------- ፊርማ----------**

**የሱፐርቫይዘር ስም..... ፊርማ.....**

## 12 MAP OF SELECTED STUDY AREA




| No | Wereda | Area (Ha) | No of Sub weredas | No of Sefers | No of Blocks |
|---|---|---|---|---|---|
| 1 | 01 | 76.7 | 2 | 8 | 28 |
| 2 | 02 | 37.8 | 2 | 4 | 16 |
| 3 | 03 | 89 | 3 | 9 | 32 |
| 4 | 04 | 119.9 | 4 | 11 | 44 |
| 5 | 05 | 126 | 4 | 12 | 46 |
| 6 | 06 | 61.9 | 2 | 6 | 23 |
| 7 | 07 | 49 | 2 | 6 | 18 |
| 8 | 08 | 99.7 | 3 | 10 | 36 |
| 9 | 09 | 78.5 | 2 | 8 | 29 |
| 10 | 10 | 125.4 | 4 | 10 | 31 |
| | Total | 863.9 | 28 | 84 | 302 |

Figure 6 -Map of Addis-Ketema Sub-city(Source:-Integrated land information center, April 2013)


Figure 7 -Map of Arada Sub-city(Source:-Integrated land information center, April 2013)

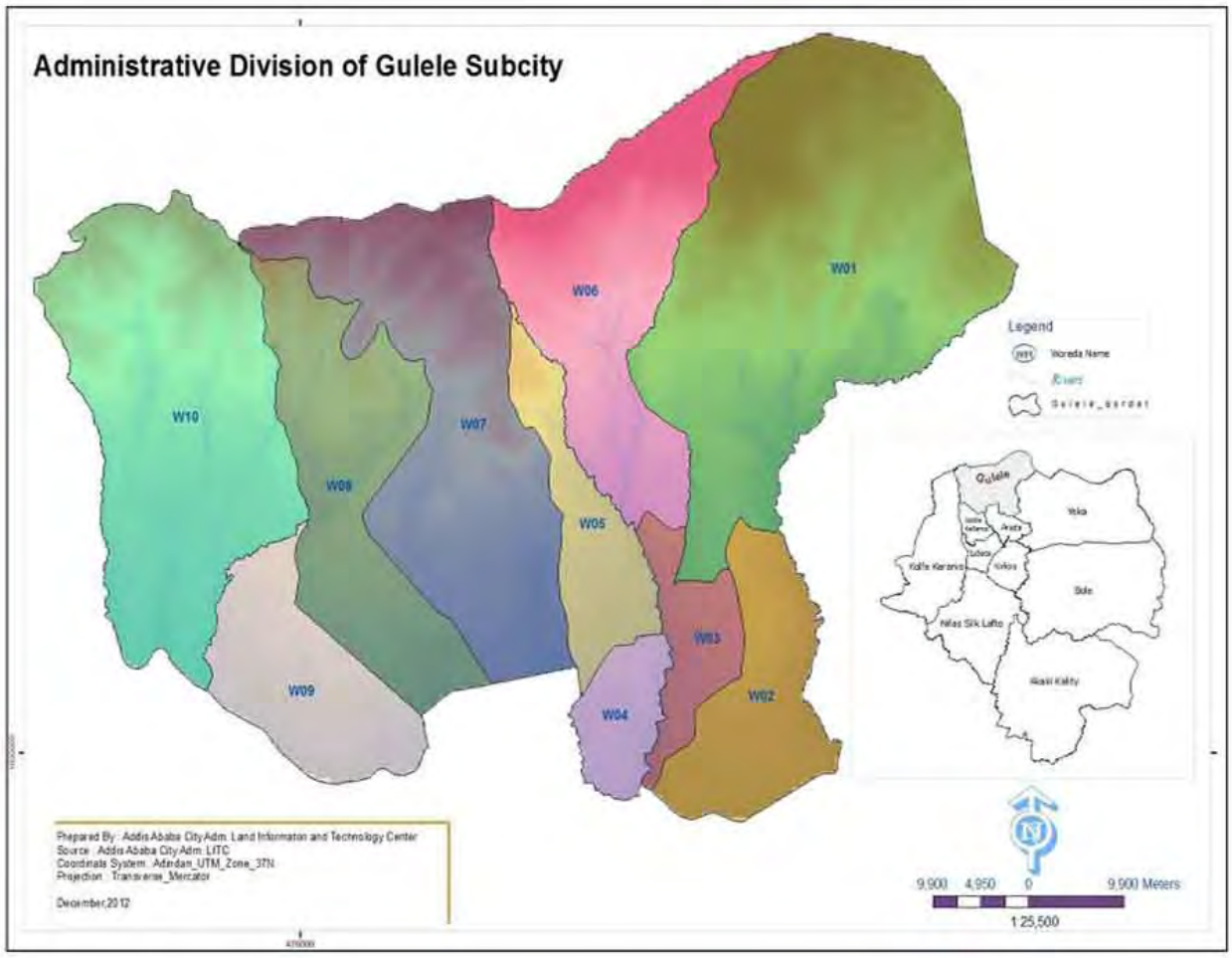



Figure 8 -Map of Gulele Sub-city(Source:-Integrated land information center, April 2013)

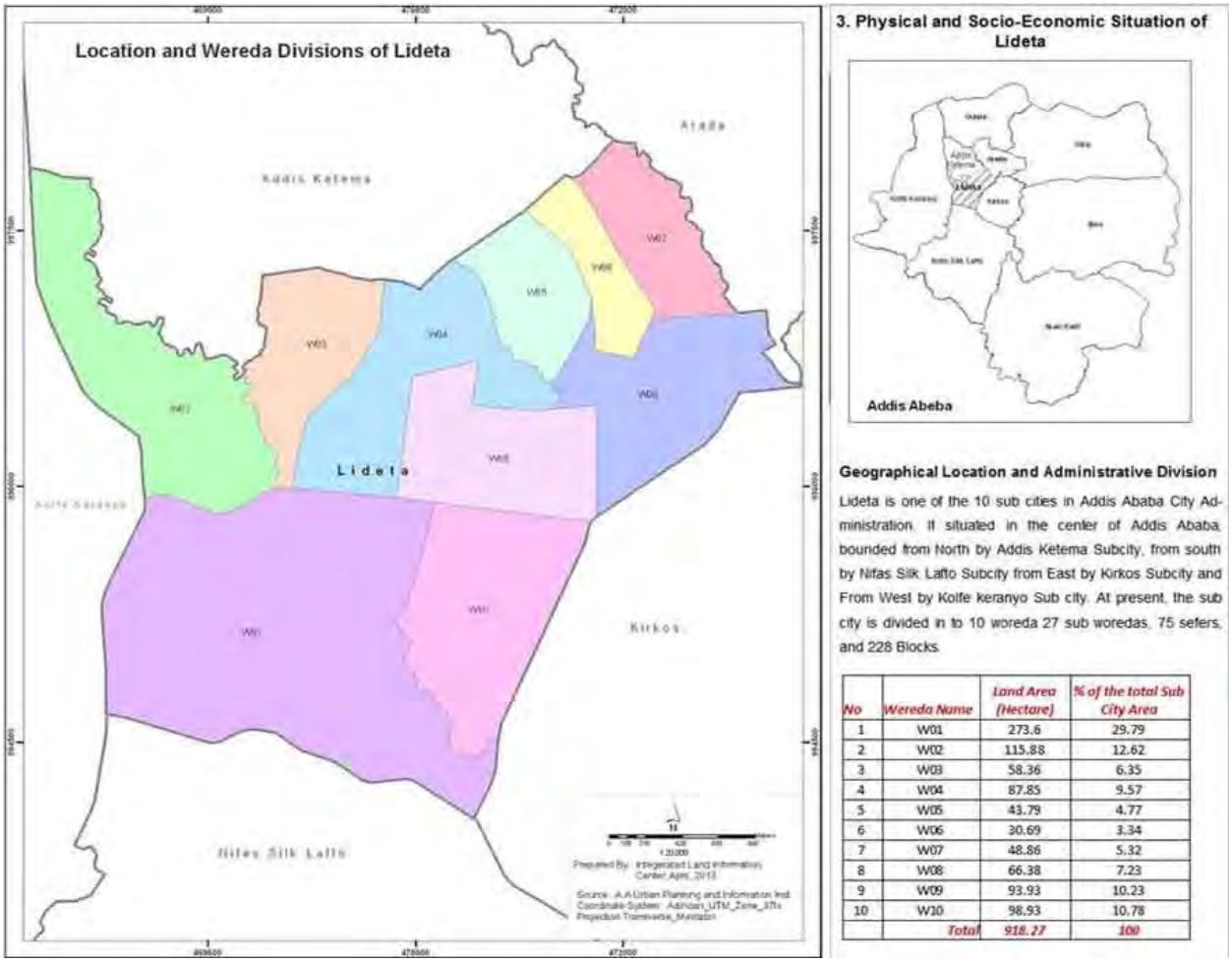



Figure 9 -Map of Lideta Sub-city (Source:-Integrated land information center, April 2013)